Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL

JULY, 1963
(Vol. 27, No. 7)

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

INDUSTRIAL HYGIENE FEATURES

Medically sponsored service plans in Canada are discussed in Abst. No. 606.

What constitutes a part-time industrial physician? See Abst. No. 609.

A psychiatric training program for non-psychiatric physicians is detailed in Abst. No. 614.

Abst. No. 616 reports on the correlation of folate deficiency with alcoholism and associated macrocytosis, anemia, and liver disease.

Abst. No. 617 presents a study on wound healing and dressing.

Fatal anaphylactic reactions to wasp stings are discussed in Abst. No. 635.

See Abst. No. 637 for observations on skin cancer among refinery workers.

Abst. No. 638 is concerned with studies on the toxicity of petroleum waxes.

The effect of penicillamine in promoting lead excretion is described in Abst. No. 647.

Liver tumors produced in rats by feeding safrole is investigated in Abst. No. 649.

Consult Abst. No. 656 on pulmonary disease and hair-spray polymers: a disputed relationship.

Asbestos as a modern urban hazard is the title of Abst. No. 663.

For a preliminary study of some health hazards in the plasma jet process see Abst. No. 664.

Abst. No. 667 is concerned with the thermal comfort on the hot humid tropics of Australia.

Abst. No. 693 discusses the medico-legal aspects of air pollution research.

FOUNDATION FACTS

I-H-F 28th ANNUAL MEETING. Fifty Years of Progress in Industrial Health and Safety is the theme for the first day of the meeting. Industrial Hygiene in the 1960's is the theme for the second day. A tentative program is shown on pages i through iii of this Digest. Invitations and final programs will be mailed at a later date, so mark these dates on your calendar now:

------ OCTOBER 23-24 ------

A meeting held at the Foundation's headquarters to explore means of improving mental health services in industry through improved interviewing and counseling is described on page iv.

DR. ROBERT T. P. deTREVILLE, Managing Director, attended a meeting of the American Speech and Hearing Association last month in Washington, D.C. Purpose of the meeting was to re-evaluate the monograph Identification Audiometry with special regard to the section on adult population.

W. J. SCHREIBEIS, Industrial Hygiene Engineer, has just returned from a three-week Western trip where he conducted industrial hygiene surveys for several member companies.

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TENTATIVE PROGRAM

28th ANNUAL MEETING OF INDUSTRIAL HYGIENE FOUNDATION

Mellon Institute, 4400 Fifth Avenue, Pittsburgh, Pa.

OCTOBER 23-24, 1963

Wednesday

"Fifty Years of Progress in Industrial Health and Safety"

9:30 AM-- Dr. Blaine B. Wescott, President, MPC Corporation, and Chairman of IHF Board of Trustees

9:40 AM-- "50 Years of Accident Prevention", speaker to be announced.

The Department of Labor celebrated its 50th Anniversary this year. The success of our national program of industrial accident prevention in the past 50 years is widely recognized. Highlights of this governmental program will be presented by a high-level spokesman for the U.S. Department of Labor.

10:10 AM-- "Interstate Cooperation—Key to Water Pollution Control", Dr. Richard D. Hoak, Senior Fellow and Head, Water Resources Fellowship, Mellon Institute.

Ohio River Valley Water Sanitation Commission (ORSANCO) and similar programs of research and control of water pollution on the part of industries, states, and municipalities will be discussed.

10:35 AM-- "Atmospheric Hygiene in Pittsburgh through Community Action", Dr. E. R. Weidlein, former President and now Trustee, Emeritus of Mellon Institute.

The community effort which resulted in bringing better control of air hygiene to Pittsburgh will be discussed. Dr. Weidlein served as President of Mellon Institute during planning and implementation of the project.

11:00 AM-- Break

11:10 AM-- "Management Considerations", Andrew Fletcher, Chairman, St. Joseph Lead Company.

With St. Joseph Lead Company from 1929 to the present, Mr. Fletcher will discuss management considerations leading to the development of hazard controls and of industrial associations to improve effectiveness of health and safety programs in industry. Mr. Fletcher was Chairman of the IHF Board of Trustees 1941-58.

11:30 AM-- "Industrial Hygiene and Occupational Medicine", Dr. Robert A. Kehoe, Director, The Kettering Laboratory, University of Cincinnati.

As research institutes brought university research and development into industry in the U.S., the medical profession was drawn into the study of industrial health problems by industrial leaders such as "Boss" Kettering. Dr. Kehoe was Medical Director of Ethyl Corporation from its origin in the early 1920's to 1958 and thus speaks from long personal experience on the contribution of industrial health to our nation's industrial progress.

12:10 PM-- Luncheon

2:00 PM-- "Perspective in Industrial Hygiene", Theodore F. Hatch, University of Pittsburgh, Graduate School of Public Health.

Mr. Hatch has attained the highest stature in industrial health as a result of his outstanding technical competence, scientific approach and judgment. He will review industrial hygiene technology and philosophy in the past 50 years and show the importance of such developments to industrial and human progress.

2:30 PM-- "Toxicology of Industrial Chemicals", Dr. Henry F. Smyth, Jr., Administrative Fellow, Chemical Hygiene Fellowship, Mellon Institute.

Dr. Smyth has made an outstanding contribution to the field through his research at Mellon Institute on the Chemical Hygiene Fellowship sponsored by Union Carbide Corporation, and his extensive participation in general scientific and professional activities. He speaks from long experience and from an intimate and practical knowledge of current legislation concerning control of hazardous chemicals and food additives.

3:00 PM-- Break

3:10 PM-- "Compensation Trends", speaker to be announced.

A member of the Foundation's Legal Committee will trace the emergence of occupational disease compensation in relation to injury cases and show the problem which exists as a result of insufficient evidence in occupational disease hearings. The potential for abuse is considered astronomical.

3:40 PM-- "Industrial Hygiene Foundation", Dr. Robert T. P. deTreville, Managing Director, Industrial Hygiene Foundation.

Dr. deTreville will outline areas in which IHF is in a position to make significant contributions to industrial health programs of its member companies in the future. As in the past, IHF member companies working together will set an example of progress which will continue to elevate the standards of practice of industrial health. This will lead to further human progress as well as technical advances in industry.

4:10 PM-- Membership Meeting.

This is the annual business meeting at which the financial report and budget are presented to the membership for approval, nominations are opened for election to the Board of Trustees, and the meeting is open for discussion and questions from the member company representatives in attendance.

5:00 PM-- Fellowship Hour.

Thursday

"Industrial Hygiene in the 1960's"

10:00 AM-- Dr. Paul W. Bachman, Vice President, Koppers Company, Inc., and Vice-Chairman of IHF Board of Trustees.

10:10 AM-- Management (title to be announced). Speaker to be announced.

Industry's views and plans for future industrial health and safety programs will be presented.

10:40 AM-- Government (title to be announced). Dr. Luther Terry, Surgeon General of the U. S. Public Health Service.

Dr. Terry will discuss the proposed USPHS center for the Division of Occupational Health. He will indicate the degree of increase in emphasis in occupational health which is developing in government.

11:10 AM-- Break

11:20 AM-- Labor (title to be announced). A. E. Brown, United Paper Makers & Paper Workers, AFL-CIO, Albany, N.Y.

Mr. Brown will give an opinion of labor's views on the importance of health and safety services in industry.

12:00 PM-- Luncheon Address: "Social Progress and the Law", Senator Charles Weiner, Democratic Minority Leader, Pennsylvania State Senate.

Senator Weiner will discuss some of the problems of writing technical directives into state legislation.

2:00 PM-- "Group Health Programs", Dr. James H. Sterner, Medical Director, Eastman Kodak Company.

Eastman Kodak administers its own group health program. Dr. Sterner is eminently qualified to trace development of such programs and to discuss their impact on industry in the U.S.

2:20 PM-- "Epidemiology and Computers", Dr. J. J. Phair, University of Cincinnati, College of Medicine.

Dr. Phair will review the development of epidemiology and computers, indicating plans under way at the University of Cincinnati for using statistical methods to study industrial populations. The costly pitfalls in undertaking such studies without adequate advance planning will be described.

3:00 PM-- "Physiology of Work", Dr. David Minard, Head, Department of Occupational Health, Graduate School of Public Health, University of Pittsburgh.

Dr. Minard will discuss the importance in industrial facility and process design of applying known physiological principles. Where indicated, physiological studies can best define design parameters, preventing overdesign or necessity for modifications, both of which are costly.

3:30 PM-- "Products Liability", speaker to be announced.

Effects of current federal legislation on industrial marketing and labeling practices will be covered by a member of the IHF Legal Committee. Implications on future industrial research and developments in food additives will also be presented.

4:00 PM-- Adjournment of Annual Meeting.

OCCUPATIONAL MEDICAL RESEARCH PLANNED TO IMPROVE INTERVIEWING AND COUNSELING IN INDUSTRIAL MEDICAL PROGRAMS

On June 21, 1963, Industrial Hygiene Foundation held a preliminary meeting to explore means of improving mental health services in industry through improved interviewing and counseling by industrial nurses and physicians. Modern techniques of teaching were discussed. Research presently underway or planned was reviewed to determine whether further studies are indicated.

The meeting was attended by (seated, left to right): Alda Sica, Chief Nurse, U.S. Steel Corp.; Bedonna Jacobs, Occupational Nurse Consultant, Allegheny County Health Department; Jane A. Lee, Medical Department, Jones & Laughlin Steel Corp.; Dr. Jack A. Wolford, Western Psychiatric Institute and Clinic; Dr. John H. Gorsuch, Research Associate, Personnel Services Research Department, U.S. Steel Corp.; Jean W. Gray, Nurse Consultant, Occupational Health Nursing Section, and Mary Louise Brown, Chief, Occupational Health Nursing Section, both of the Division of Occupational Health, Public Health Service; and H. H. Shettel, American Institute for Research; (standing, left to right): Dr. Robert T. P. deTreville, Managing Director, Industrial Hygiene Foundation; Dr. Mario Battigelli, University of Pittsburgh Graduate School of Public Health; Dr. Daniel C. Braun, Assistant Medical Director, U.S. Steel Corp.; Dr. G. A. Webb, Director of Administration, Mellon Institute; and Dr. C. Craig Wright, Medical Director, Homestead Division, U.S. Steel Corp.

BERYLLIUM TOXICITY INFORMATION AVAILABLE

It has been brought to our attention that a limited number of copies of the WORKSHOP ON BERYLLIUM, conducted under United States Air Force contract by The Kettering Laboratory, University of Cincinnati, on January 5 and 6, 1961, may be made available to our membership free of charge. The Table of Contents is as follows:

This report is the best statement of our current knowledge on beryllium and is the basis for the Final Technical Engineering Report on Toxicity of Beryllium, dated April 1962, which was intended by the United States Air Force to serve as a guide for use by individuals who have the responsibility for protecting the health of personnel engaged in operations in which beryllium is used.

If you would be interested in receiving a copy of the WORKSHOP, please tear off the attached blank and return it to us. The other report is available through The Office of Technical Services, Department of Commerce, Washington 25, D.C. (Price not given).

Please send me a copy of the WORKSHOP ON BERYLLIUM which is available to members of I-H-F

Name_____ Title_____

Name of member company_____

Address of member company_____

City_____ State_____ Zip Code No._____

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INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

592 American Public Health Association 1963 Meeting.

The American Public Health Association's 91st Annual Meeting is scheduled for the Municipal Auditorium, Kansas City, Mo., November 11 to 15, 1963. Over 5,000 members and non-members of the Association, largest professional society of public health personnel in the Western Hemisphere, are expected to attend. Meeting concurrently with the Association will be 60 related organizations. Major sessions at the forthcoming meeting will be devoted to a wide variety of topics including new developments in radiological health; health and urban renewal; the health manpower shortage; policy on major environmental problems; water resources, pesticides, international health, housing; environmental health research; smoking and disease; respiratory diseases; advances in immunization procedures; accident prevention; disaster feeding; nutrition factors of congenital metabolic diseases; and suicides as a public health problem. Also, viral diseases; economic benefits from public health services; social changes and well child care concepts; health problems of migratory farm labor; techniques for including psychotherapy in medical care programs; community noise as a public health problem; new technological developments and their significance; and common school health problems such as obesity and early detection of emotional illness and sight and hearing difficulties. Chairman of the local arrangements committee for the meeting is Hugh L. Dwyer, M.D., Director of Health, Kansas City, Mo., Health Department. -- Ind. Med. & Surg. 32, 252 (June 1963)

593 Sources and Use of Toxicological Information.

A five-day course in "Sources and Use of Toxicological Information" will be presented by the Institute of Industrial Medicine, New York University Medical Center, in cooperation with the American Industrial Hygiene Association on October 14 through 18, 1963, at the Onchiota Conference Center, Tuxedo, N.Y. The increasing variety and quantity of chemical products coming into use has brought a widespread need for toxicological information to ensure the safety of workers and consumers. This course is designed to acquaint those concerned with advanced methods of securing and interpreting pertinent information. It is particularly aimed at meeting the needs of persons who have the responsibility for securing and ensuring the use of such information but who may not have had formal training in the area. Inquiries for additional information should be addressed to: Institute of Industrial Medicine, New York University Medical Center, 550 First Ave., New York 16, N.Y. -- Ind. Med. & Surg. 32, 234 (June 1963)

594 American Medical Association to Set Up Institute for Biomedical Studies.

The American Medical Association will set up an institute for basic biomedical studies. The project marks AMA's entry into the research field. The institute's staff will be housed in a new building now going up at AMA's Chicago headquarters. Studies will be directed at life processes, particularly those related to intracellular mechanisms. The institute will not provide medical services to patients nor will it carry out any clinical investigations. AMA's education and research foundation will sponsor the project and will seek voluntary contributions from doctors and industry. The association hopes to have the first research group functioning by early 1965. According to an AMA spokesman, one of the aims of the new program is to "strengthen AMA's scientific activities." Plans are tentative but the program would normally fall under AMA's division of scientific activities, which is headed by Hugh Hussey, M.D. Dr. Hussey is the former dean of Georgetown University's medical school.
-- Chem. Eng. News 41, 19 (June 24, 1963)

595 Chemotherapy Group.

The American College of Clinical Pharmacology and Chemotherapy has been organized by leaders in clinical pharmacology and chemotherapy. Its purpose will be to set standards for and to evaluate the competence of medical scientists who study the effects of drugs in humans, and to promote communication between clinical investigators, Food and Drug Administration, and the pharmaceutical industry. Dr. McKeen Cattell, professor emeritus of pharmacology at Cornell College of Medicine, has been named president of the new organization. Dr. D. E. Hutcheon of Seton Hall College of Medicine was elected secretary and treasurer, and Dr. T. Greiner of Baylor College of Medicine, vice president. Membership in the college will be limited to scientists holding either the M.D. or Ph.D. degree in one of the medical sciences. Membership will also demand interest and competence in and dedication to clinical research with chemical substances. The organization is also committed to the publication of a journal.

-- Chem. Eng. News 41, 88 (June 24, 1963)

596 Smoking Report Delayed.

The Surgeon's General Committee on Smoking and Health has put off until the first of the year a report dealing with smoking and health evidence. The group originally was supposed to have issued its initial report by this summer, but the members found they could not accomplish the research in this time. A second report will be made later on possible recommendations on federal action, if any, in the field of cigarettes and health.

-- J. Am. Med. Assn. 184, adv. p. 18 (June 15, 1963)

COMING EVENTS

597	Aug. 3-7	World Contact Lens Congress, Chicago, Ill.
	Aug. 4-9	International Conference and Exhibit on Aerospace Support, Washington, D.C.
	Aug. 11-14	American Society for Pharmacology and Experimental Therapeutics, San Francisco, Calif.
	Aug. 12-15	National Medical Association, Los Angeles, Calif.
	Aug. 18-22	Pennsylvania Health Conference, Pennsylvania State University, University Park, Pennsylvania
	Aug. 19-23	Gordon Research Conference on Microbiological Deterioration, New Hampton, New Hampshire
	Aug. 19-23	5th International Congress of Clinical Chemistry, Detroit, Mich.
	Aug. 20-26	International Congress on Psychology, Washington, D.C.
	Aug. 20-27	International Association for the Co-Ordination of Psychiatric and Physiological Methods and Psychology, Washington, D.C.
	Aug. 20-27	16th International Congress of Zoology, Washington, D.C.
	Aug. 22-24	West Virginia State Medical Association, White Sulphur Springs, W. Va.
	Aug. 25	American Association of Electromyography and Electrodiagnosis, Dallas, Texas
	Aug. 25-30	American Congress of Physical Medicine and Rehabilitation, Dallas, Texas
	Aug. 26	American Academy of Physical Medicine and Rehabilitation, Dallas, Texas
	Aug. 26-28	Symposium on Environmental Measurements, U.S. Public Health Service, Cincinnati, Ohio
	Aug. 26-29	American Hospital Association, New York, N.Y.
	Aug. 26-30	American Physiological Society, Coral Gables, Florida
	Aug. 26-30	Gordon Research Conference on Cancer, New London, New Hampshire
	Aug. 27-31	American Institute of Biological Sciences, 14th Annual Meeting, Amherst, Mass.
	Aug. 28-31	Electron Microscope Society of America, 21st Annual Meeting, Denver, Colo.

OCCUPATIONAL DISEASE STATISTICS

598 Occupational Disease Statistics. (Cases reported to the respective Health Departments.)

	Colo. Jan.-Apr.	Conn. Apr.	Pa. May-June	Total
Anthraco-silicosis			27	27
Bronchitis			1	1
Carbon monoxide intoxication	1			1
Chemical pneumonia	1			1
Cyanide burn	1			1
Cyanosis			1	1
Dermatitis	60	29*	27	116
Emphysema			1	1
Fumes (unidentified)			2	2
Lead poisoning	2		1	3
Metal poisoning			1	1
Mononucleosis			1	1
Pneumoconiosis			129	129
Pneumoconiosis (suspected)			11	11
Poisoning (from biological agents)	7			7
Poisoning (from solvents)	3			3
Silicosis	1	2	2	5
Silicosis (suspected)			9	9
Silicotuberculosis			1	1
Silicotuberculosis (suspected)			1	1
Tuberculosis			2	2
Miscellaneous	18			18
Total	94	31	217	342

* Causes are listed as follows:

Connecticut: Occupational dermatitis due to oils and greases (and metal cutting compounds) 10; occupational dermatitis due to solvents 5; occupational dermatitis due to other chemicals: dyes 1, fluorides 1, insecticides 1, miscellaneous 1, multiple chemicals 4; occupational dermatitis—other: heat 1, infection 1, soaps or detergents 1, undetermined 3.

LEGAL DEVELOPMENTS

599 Drug Testing Regulations May Slow Down Research.

The FDA regulations for testing new drugs may slow down research, says Dr. L. T. Coggeshall, head of the commission on drug safety set up by the Pharmaceutical Manufacturers Association. Faced with the Food and Drug Administration's revised rules for testing new drugs, some research men have decided to stop all drug research until the regulations have been clarified, Dr. Coggeshall told the Senate Subcommittee on Reorganization at hearings recently. He believes that the detailed reporting and large volume of paper work required may cause some young men to bypass drug research in favor of other fields. However, the new regulations should pose no serious problems for industrial firms that have maintained high standards of research, he says. -- Chem. Eng. News 41, 21 (June 24, 1963)

600 Action on Pesticide Bills Premature.

Action on pesticide control bills would be premature, a Department of Agriculture spokesman told the House Subcommittee on Merchant Marine and Fisheries at hearings recently on H.R. 2857 and H.R. 4487. These bills would require advance consultation among government agencies before federal spray programs are started and would require pesticide labels to bear warnings about harm to fish and wildlife. The Agriculture Department wants action on the bills postponed until a study of interagency coordination on pesticide problems (recommended by the report of the President's Science Advisory Committee) is completed. Representative J. D. Dingell (D.-Mich.), sponsor of the bills, sharply cirticized USDA's proposal and accused the department of "fiddling around" with the pesticide problem for years without ever coming up with any legislative recommendations. -- Chem. Eng. News 41, 21 (June 24, 1963)

601 Dry Cleaning Establishments Require Certificate of Operation.

Retail dry cleaning establishments will be required to obtain a certificate of operation and pay a registration fee of $10 under proposed amendments to the Rules and Regulations of the New York City Department of Air Pollution Control. A public hearing was held by the Board of Air Pollution Control April 16. Retail dry cleaning establishments having equipment with a dry load capacity no greater than 60 lb. shall be registered by the owner with the Department on a form provided by the department. Upon approval by the Department, a certificate of operation will be issued for posting in the establishment. The equipment shall be vented to the outside air as required by the Department. -- J. Air Poll. Control Assn. 13, 297 (June 1963)

602 Restrictions on Fuel Oil Use in Los Angeles.

Restrictions on the use of fuel oil by power plants, refineries, and industry in the Los Angeles Basin went into effect April 15 for a 7-month period under Air Pollution Control District (APCD) Rule 62. Until November 15, major fuel users will be burning natural gas in compliance with the regulation that eliminates pollution from fuel oil burning during the most intensive smog period of the year. The substitution of natural gas is credited by the APCD with important reductions in the amount of sulfur compounds, particulate matter, and other contaminants in the atmosphere. Air Pollution Control Officer Smith Griswold has advocated the extension of Rule 62 as quickly as additional supplies of natural gas become available to the Los Angeles area. A contract recently awarded by the Los Angeles Department of Water and Power, provides for additional natural gas, but requires approval by Federal regulatory agencies before new pipeline facilities may be built. -- J. Air Poll. Control Assn. 13, 297 (June 1963)

BOOKS, PAMPHLETS AND NOTICES

EDITORS NOTE: Because a number of Industrial Hygiene Foundation member companies are engaged in space flight support, the following reference may be of interest. Critical comments from space medical specialists should be forwarded to: Dr. E. B. Konecci, Director, Biotechnology and Human Research, National Aeronautics and Space Administration, Washington 25, D.C.

603 The First Manned Space Flights. Volume I. Yu. M. Volynkin, V. I. Yazdovskiy, and others. Translated by Foreign Technology Division, U.S. Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. FTD-TT 62-1619. 203 pp. (December 7, 1962).

This is an unedited translation of the text of scientific reports from the Academy of Sciences of the USSR (Division of Biological Sciences), which relate the results of medical and biological investigations conducted during the orbital flights of the spaceship satellites "Vostok" and "Vostok-2" piloted by Y. A. Gagarin and G. S. Titov. The coverage is quite comprehensive

from the standpoint of life support and bioeffects. A limited amount of technical material relating to the space ship, and general problems of space flight is included. A considerable portion of the volume is devoted to a description of the training of the cosmonauts and to detailed studies of weightlessness, thermal stress, psychological investigations, and general medical findings on the astronauts, in preparation for, as well as during and after the flights. Special consideration is given to effects of ionizing radiation, and special studies of urine and blood for intermediate products of metabolism were made. Immunological reactivity was studied. These investigations reportedly revealed only a transient, completely reversible stress reaction, expressed by increased urinary 21-hydroxy-20-ketosteroid excretion and by temporary stimulation of immunity. This report and Volume II, entitled "Problems of Space Biology" are available from the U.S. Department of Commerce, Office of Technical Services, Joint Publications Research Service, Building T-30, Ohio Drive and Independence Avenue, S.W., Washington 25, D.C. Volume III is in translation. -- RTP deT

604 Periodic Health Examinations. Abstracts from the Literature. G. S. Siegel. PHS Publication No. 1010. 119 pp. (March 1963). LIMITED COPIES ARE AVAILABLE FROM: The Division of Occupational Health, Public Health Service, U.S. Department of Health, Education, and Welfare, Washington 25, D.C.

Increasing interest in recent years in health examinations of employee groups has raised questions on the value of the procedure for periodic health examinations. To answer these questions, Dr. Gordon S. Siegel of the Division of Occupational Health compiled abstracts after a search of U.S. literature and that of other English-speaking countries. Abstracts are presented in three sections: (1) selection of articles from the U.S. medical literature published prior to 1940; (2) review of articles published from 1940 to June 1962; and (3) selected articles from English and Canadian literature. General articles discussing value and limitations, recommended content, and methods or periodicity of periodic health examinations are few. There is also a paucity of articles on periodic health examinations as part of daily office practice. In contrast, selected aspects, such as diagnostic criteria for specific diseases or usefulness of specific laboratory tests, are profusely covered. Several articles reveal that the English appear less enthusiastic over the alleged values of periodic health examinations than their American colleagues.

605 Air Pollution. Selected 16 mm. Films. (Brochure). U. S. Department of Health, Education, and Welfare, Public Health Service. 4 pp. (Nov. 1962). COPIES OF THE BROCHURE MAY BE OBTAINED FREE FROM: The Division of Air Pollution, Public Health Service, Washington 25, D.C. PRINTS OF FILMS ARE AVAILABLE ON LOAN FROM: The Public Health Service Audio-visual Center, Atlanta 22, Georgia.

The films, which range in length from 5 to 60 minutes, depict the broad subjects of air pollution, including its sources and effects, the research effort to gain better understanding of the problem, and the steps being taken to control further contamination of the air. All of the films are 16 mm. sound productions. Three of the motion pictures described in the brochure were produced in color by the Division of Air Pollution. They are concerned specifically with sources, effects, and control of air pollution. The other, black-and-white films were made from television broadcasts produced in cities throughout the country with the cooperation and frequently participation of Public Health Service personnel. Each of these television films selected for distribution by the Division of Air Pollution contains information relevant to the air pollution problems facing nearly all American cities.

INDUSTRIAL MEDICAL PRACTICE

606 Medically Sponsored Service Plans in Canada. C. H. Shillington. Can. Med. Assn. J. 88, 1163-1166 (June 8, 1963).

Prepayment plans in Canada were started by the profession because of an urgent need not being met by any other agency. In their development they have maintained the characteristics

which the profession itself gave to them and in the process they have served the needs of the public and the profession beyond their founders' fondest hopes. If the medical profession and its prepayment plans are to go forward in the future together, their relationship must be kept strong because, whatever the pattern of health care for the future, the profession will be deeply involved. Through these plans it has the one opportunity to present, for all the world to see, the evidence of its dedicated effort and honesty of purpose in pursuing the answer to a problem which does not belong to government alone but to all citizens. -- Author's conclusions

607 Occupational Health in Eastern Europe. R. M. Malan.
Brit. J. Ind. Med. 20, 154-164 (April 1963).

Progress may be fostered as much by spreading information as by research. The aim of this review is to add to the existing knowledge of the pattern of occupational health services in the socialist countries of Eastern Europe. The work consists of two main parts. Part I is based on official information issued by government departments or typewritten reports prepared by government officials, and relates mostly to the Union of Soviet Socialist Republics and to Czechoslovakia. Part II is largely based on direct observation, discussion, and comparison of the occupational health services in Czechoslovakia, of which the author has more extensive knowledge than the other countries of Eastern Europe. This part embodies a number of conclusions and is followed by a list of bibliographical references. Throughout the review, the author has endeavored to show how problems which exist all over the world are dealt with in Eastern Europe. -- Author's abst.

608 Occupational Health Bookshelf. Selected References as Recommended by the Industrial Medical Association and the United States Public Health Service. Anon.
J. Occ. Med. 5, 150-156 (March 1963).

To meet the need for a current Occupational Health Bookshelf, the Division of Occupational Health of the U.S. Public Health Service, at the suggestion of the Industrial Medical Association, compiled a list of publications in this field and related areas.

609 What Constitutes a Part-Time Industrial Physician?—Down to Earth Industrial Medicine.
E. S. Jones. Ind. Med. & Surg. 32, 248-249 (June 1963).

Medicine in industry is not very different from the private practice of good medicine. In both types the welfare of the patient is the prime consideration. The added requirement for the industrial physician is familiarity with the industry itself, its machines, its chemicals, its processes, and its exposures that might result in traumatic injury or in occupational diseases. This requirement can be met only by the regular devotion of time to the plant itself, to the work environment. The plant becomes one of his patients. If this particular requirement be fulfilled then any good private practitioner of medicine may become equally successful as the small plant industrial physician. -- Author's summary

610 Capacity for Work Following Gastric Resection. P. W. Springorum and H. Pickhardt.
Deutsch. med. Wochschr. 87, 2537 (1962). German.

The authors examine the validity of the generally prevailing belief that gastric resection frequently causes a significant loss in the earning capacity of the patient. They began their investigation in 1949 and concluded it in May 1958, having questioned and examined 100 mine workers who had undergone gastric resection. This series of patients had Billroth II gastric resection carried out with a retrocolic anastomosis. There were no postoperative deaths. Follow-up interviews of patients took place in their own homes, and the wives of the patients usually also took part. Weight change and excessive use of alcohol or nicotine were noted, and the question was regularly posed whether the patient would be prepared to undergo this operation again, if it became necessary. Of the 100 postoperative patients, 14 had had gastric ulcer and 86 duodenal ulcer. The authors considered the results very good in 76%, good in 12.5% and

satisfactory in a further 8.3%. It is of interest that of those patients 40 years and older, more than 32% had changed their place of work; of the younger patients only 15% were unable to carry out the heavy physical work connected with mining in the mountains. Body weight increased in 25, remained unchanged in 55 and was reduced in 20 of the patients. The authors concluded that gastric resection has to be considered the treatment method of choice also in those performing heavy physical work. -- Can. Med. Assn. J. Absts.

611 *Some Clinical Aspects of Geriatrics.* E. D. Sherman. Med. Serv. J. (Can.) 18, 801 (1962). (Medical Services Journal (Canada), Ministry of National Defense, National Health and Welfare, Ottawa, Ontario, Canada*).

This presentation attempts to delineate 3 aspects of importance in the broad field of aging: (a) chronic illness; (b) research, and (c) prevention. The chronically ill have been receiving increasing attention, but it is essential that the approaches toward care and scientific understanding be broadened and improved. Research is vital and should be centered around (1) rehabilitation or care of the aged already infirm, (2) prophylaxis of chronic illness and (3) understanding of the biology of natural aging. This implies a combination of all the disciplines of biology and medicine. The emphasis will shortly need to shift from rehabilitation to prevention. These latter measures can be encouraged by medical societies through educational campaigns directed toward physicians and the public generally, by lectures, brochures and geriatric symposia. The ultimate objective is that as many as possible should attain the full life-span while enjoying physical, mental, social and economic well-being to the end. In the field of aging, medicine should assume the responsibility for leadership beyond merely curative practice. The provision of improved facilities for the chronically ill, added financial support for research activities, initiation of preventive measures, and the formulation of dynamic educational programs are essential requisites for the attainment of this objective.

-- Can. Med. Assn. J. Absts.

612 Aging and Disease. B. Steinmann. Schweiz. med. Wochschr. 93, 172 (1963).

According to the author there is a physiology as well as an anatomy of aging. The significant changes taking place in aging depend on the organ or tissue involved. They occur singly or in combinations. Purely involutional changes are found in highly vascularized organs such as the brain, liver, spleen, and intestinal mucosa. In poorly vascularized tissues such as joints, lens and cornea, nourished by diffusion, degenerative changes predominate. When exposed to functional mechanical irritation these tissues may respond with reactive changes. Most important are the degenerative-reactive processes of aging, in particular arteriosclerosis and arthrosis. All of these changes can occur in normal conditions of life but will occur prematurely if some disturbance of the normal relationships within the body takes place.

-- Can. Med. Assn. J. Absts.

613 Causes of Death in Persons Over 90 in the Light of Autopsy Material. S. G. Jokiph and A. E. Heino. Ann. Med. Internae Fenniae 52, 11 (1963). (Annales Medicinae Internae Fenniae, Kalevankatu 11, Helsinki, Finland*).

On the basis of autopsy findings, the underlying and the immediate causes of death were studied in 90 persons over 90 years of age at the time of their death. They were compared with the corresponding causes of death of 324 persons between 65 and 89 years and of 576 persons between 20 and 64. In persons over 90 the five most important underlying causes of death were: cardiovascular disease, 48.9%; malignant neoplasm, 15.6%; central nervous system disease, 12.2%; digestive system disease, 10%; and genitourinary disease, 5.6%. The corresponding figures for the group between 65 and 89 years were: cardiovascular disease, 42.6%; central nervous system disease, 19.4%; malignant neoplasm, 18.5%; digestive system disease, 5.2%; and respiratory system disease, 4%. For the group between 20 and 64 years the underlying cause of death was: malignant neoplasm in 25.2%; cardiovascular disease in 22.7%; central nervous system disease in 11.8%; genitourinary disease in 5.9%; and digestive system disease in 5.4%. The immediate causes of death in persons over 90 were: respiratory

* Address not in current List of Periodicals.

system disease, 38.9%; cardiovascular disease, 26.7%, digestive system disease, 14.4%; malignant neoplasm, 8.9%; and genitourinary disease, 5.6%. For the group between 65 and 89 years the figures were: cardiovascular disease, 45.1%; respiratory system disease, 17.9%; central nervous system disease and malignant neoplasm, each 12.7%; digestive system disease, 6.2%. For the group between 20 and 64 years the figures were: cardiovascular disease, 26%; malignant neoplasm, 18.9%; central nervous system disease, 14.1%; respiratory system disease, 13.4%; and digestive system disease, 6.6%. -- Can. Med. Assn. J. Absts.

614 Psychiatric Training Program for Nonpsychiatric Physicians. L. Bellak, et al. J. Am. Med. Assn. 184, 470-472 (May 11, 1963).

Postgraduate seminars in psychiatry for nonpsychiatric physicians are essential because psychiatry, although a basic medical science, has not been sufficiently taught to a majority of physicians now in practice. Also, the scarcity of psychiatrists makes it essential that other physicians be able to diagnose and treat patients with certain psychiatric problems. The development of community psychiatry has made it clear that psychiatry has a preventive medical function which must be exercised by all doctors. The experience here summarized, in the fourth year of teaching a year-long seminar to about 20 physicians at a time, indicates that the needs cited can be met. Lectures, seminars, supervised psychotherapeutic experience, consultations, and participation in the activities of a psychiatric division of a large general hospital seemed to offer a very useful training. -- Authors' abst.

615 Psychiatry in General Practice. D. G. McKerracher. Can. Med. Assn. J. 88, 1014-1016 (May 18, 1963).

Psychiatrists should include the family doctor in their plans for future psychiatric services. The general practitioner now treats most of the patients who seek help for psychiatric disorder and he could not give up his psychiatric practice even if he wanted to. Furthermore, there are not now nor will there ever be enough psychiatrists to take over all patients with mental ills. Most emotionally disturbed patients can be better handled by their family physicians than by a specialist. To provide the best care for emotionally disturbed people the communication between family doctors and psychiatrists must be improved. The specialist must acknowledge the importance of the general practitioner's role in psychiatric diagnosis and treatment and give him more help. Medical schools must provide better undergraduate and postgraduate psychiatric training for the students who will become family doctors. Health plans and other prepayment agencies should properly compensate the general practitioner for giving psychiatric treatment. The specialist in psychiatry should consult more readily with the general practitioner and help him carry out some of the therapy. General hospitals should permit family doctors to admit mental patients to psychiatric wards in a general hospital and to carry out psychiatric treatment with the help of the specialist in psychiatry. -- Author's abst.

616 Correlation of Folate Deficiency with Alcoholism and Associated Macrocytosis, Anemia, and Liver Disease. V. Herbert, R. Zalusky and C. Davidson. Ann. Internal Med. 58, 977-988 (June 1963).

Seventy patients with alcoholism and varying degrees of hepatic dysfunction were studied. Of these, only 5 (7%) had normal serum L. casei folate concentrations of 7 or more millimicrograms per ml. Nine (13%) had diagnostically indeterminate concentrations of 5 to 6.9, 25 (36%), 3 to 4.9 (strongly suggestive of folate deficiency), and 31 (44%) had concentrations below 3 millimicrograms per ml. (indicative of folate deficiency). All of 6 patients with serum folate concentrations below 3 millimicrograms per ml. who had urine formiminoglutamate (FGA) determined after a histidine load had abnormally high FGA excretion which decreased after folate therapy. Macro-ovalocytes and an increase in segmentation of the neutrophil nuclei were present in the peripheral blood smears of all patients with serum folate concentrations below 3, and the majority of the patients with serum folate concentrations of 3 to 4.9 millimicrograms per ml. In these subjects, when bone marrow aspirates were obtained, they were either overtly megaloblastic or showed large metamyelocytes and "macronormoblasts", as further morphologic evidence for folate (or vitamin B12) deficiency. Correlation of decreased serum

folate with other variables studied was as follows: significant with recent alcoholism; barely significant with macrocytosis (increased mean corpuscular volume) and anemia (decreased hemoglobin); of borderline significance with cirrhosis and fatty liver or hepatitis; not established with diet (because of small size of "good diet" group), mean corpuscular hemoglobin concentration, or serum vitamin B12 concentration. There are 38 references in the bibliography. -- Authors' summary

617 Wound Healing and the Dressing. J. T. Scales.
Brit. J. Ind. Med. 20, 82-94 (April 1963).

The evolution of surgical dressings is traced from 1600 B.C. to A.D. 1944. The availability of an increasing variety of man-made fibers and films from 1944 onwards has stimulated work on wound dressings, and some of the more important contributions, both clinical and experimental are discussed. The functions of a wound dressing and the properties which the ideal wound dressing should possess are given. The necessity for both histological and clinical evaluation of wound dressings in animals and in man is stressed. Wound dressings are the most commonly used therapeutic agents, but there is no means whereby their performance can be assessed. An attempt should be made either nationally or internationally to establish a standard method of assessing the performance of wound dressings. For this it is necessary to have an internationally agreed standard dressing which could be used as a reference or control dressing in all animal and human work. The only animal with skin morphologically similar to that of man is the domestic pig. Three types of wounds could be used: (1) partial-thickness wounds; (2) full-thickness excisions; and (3) third-degree burns. The development of standard techniques for the assessment of the efficiency of wound dressings would be of considerable benefit to the research worker, the medical profession, the patient, and the surgical dressings industry. -- Author's abst.

618 Normal and Abnormal Expansion of the Lungs of Newborn Infants Obtained at Autopsy. II. Opening Pressure, Maximal Volume, and Stability of Expansion. P. Gruenwald.
Lab. Invest. 12, 563-576 (May 1963).

Lungs obtained at perinatal autopsies were investigated by artificial inflation. The opening pressure is an ill-defined parameter. It is high in very small fetuses; otherwise the mean values for the first experimental expansion range between 21 and 25 cm., and those for a following expansion between 13 and 18 cm. The scatter is considerable and individual values may be much higher. The maximal volume usually determined at a pressure of 60 cm. shows characteristic trends with increasing maturity and increasing duration of survival after birth. Values for lungs with hyaline membranes differ significantly from those of other lungs only with regard to the marked increase which normally occurs with survival of more than one day; this increase is absent in lungs with hyaline membranes. Measurements of stability of expansion indicate the extent to which lungs retain air upon deflation to certain low pressures. Stability is abnormally low in most lungs with hyaline membranes, particularly from infants surviving for less than one day; also in some stillborn infants and a few others. The bearing of low stability of expansion on the pathogenesis of the respiratory distress syndrome is discussed. The distribution of values observed suggests certain features of the course of this syndrome.
-- Author's summary

619 Percutaneous Needle Biopsy of the Lung in Diffuse Pulmonary Diseases.
Felice Manfredi, D. Rosenbaum and R. H. Behnke.
Ann. Internal Med. 58, 773-788 (May 1963).

During the past 18 months, 18 diagnostic percutaneous needle lung biopsies were performed in 16 patients with a variety of diffuse pulmonary disorders. Only in one instance was a serious complication observed, namely, the development of pneumothorax requiring chest intubation. Lung specimens adequate for histologic and bacteriologic studies were obtained in 13 instances. The Franklin-Silverman needle appeared to be the most suitable needle for this procedure. The biopsy technique is described in detail, and illustrative cases are reported. In selected patients with diffuse pulmonary disorders, percutaneous needle lung biopsy should be regarded as a reasonably safe and informative procedure and may be attempted before one considers surgical diagnostic methods. -- Authors' summary

620 Sweat Electrolytes in Chronic Pulmonary Disease. A. Toigo, A. A. Dietz, J. B. Crane and D. Reisner. Ann. Internal Med. 58, 961-968 (June 1963).

Sweat electrolyte concentrations are frequently reported without regard to the physical factors which influence the concentrations. The present study was designed to standardize the conditions of collecting the sweat. Two groups of men were studied, a control group of hospital patients, and a test group of patients with chronic lung disease. The subjects were exposed to a standardized thermal stimulus and sweat was collected from the forehead, chest, abdomen, and palm. Sweat was collected for six 20-minute periods during which the rate of sweating and the chloride and sodium concentrations increased logarithmically. When the sweat volumes from the 2 groups were compared, the rate of sweating was found to be higher on the forehead than on the abdomen or chest; these 3 latter rates were much higher than those for the palm. The chloride concentrations of the sweat collected from the abdomen, forehead, and chest were significantly higher in the test group with chronic pulmonary disease than in the control group.
-- Authors' summary

621 Pulmonary Tuberculosis and Centrilobular Emphysema. The "Upright Theory" of Apical Localization. G. L. Snider. Arch. Internal Med. 111, 762-771 (June 1963).

The literature on apical localization of pulmonary tuberculosis is briefly reviewed. The similar apical-posterior localization of reinfection tuberculosis and centrilobular emphysema is pointed out. Evidence is presented to support the thesis that this apical localization is determined in both diseases by man's upright posture and the resultant hydrostatic effects of gravity on decreasing the circulation of the lung apex. Although many loop-holes remain, the "upright-apical under perfusion" theory seems to be the most tenable at the present time. The bibliography contains 40 references. -- Author's summary

622 Pasteurella Pseudotuberculosis Infection in Man. S. I. Hnatko and A. E. Rodin. Can. Med. Assn. J. 88, 1108-1112 (June 1, 1963).

Pasteurella pseudotuberculosis has been considered a widespread animal pathogen for many years, but only within the last decade has its capacity to cause human disease been recognized. Two forms of human disease have been established—acute septicemia and mesenteric lymphadenitis. Because mesenteric adenitis is frequently indistinguishable from acute appendicitis, blood serum was obtained from 66 consecutive patients who underwent operation for appendicitis and was examined for agglutinins to 7 serotype strains of P. pseudotuberculosis. Agglutinins were obtained in 21.2% of this series. Titres of over 1/100 were found in 3 of 3 cases of mesenteric lymphadenitis, 1 of 11 with no apparent disease, and 1 of 46 with appendicitis. P. pseudotuberculosis was isolated from a lymph node in the latter case. Two to four follow-up samples of sera in each of these 5 cases had increasing and then decreasing titres, indicative of active disease. Titres of 1/15 or less were found in 5 of the cases of appendicitis, in one case of salpingitis, and in 3 with no apparent disease. The occurrence of these 9 cases with low titres may be indicative of previous contact with the organism. Human infection with P. pseudotuberculosis is not unusual in the Edmonton region and is responsible for at least some cases of mesenteric lymphadenitis. -- Authors' abst.

623 Influenza in University of Wisconsin Students. A. S Evans, E. C. Dick and Kathleen Nystuen. Arch. Environmental Health 6, 748-755 (June 1963).

The experience of students at the University of Wisconsin with infections by influenza virus has been assessed in the 9-year period from 1953 to 1962. Fourfold or greater serologic rises to infleunza virus occurred in 12.2% of 1,454 students admitted to the infirmary. Of 1,106 students with respiratory symptoms, influenza antibody rises occurred in 15.5%. The most common clinical syndrome associated with proved influenza infections was acute upper respiratory infections; relatively few infections of the lower respiratory tract were due to influenza. The experience of university students with Asian influenzal outbreaks is described.
-- Authors' summary

624 The Effect of Cigarette Smoke on the Respiratory System of the Rabbit. A Final Report. R. H. Holland, E. J. Kozlowski and L. Booker. Cancer 16, 612-615 (May 1963).

The long-term effects of cigarette smoke on the respiratory system of the rabbit were studied in a well-controlled experiment. The "smokers" were found to have more pathological changes in the respiratory epithelium of the nose and tracheobronchial mucosa than their litter mate controls. Emphysema developed earlier, more diffusely, and more frequently in the smoking rabbits than in their controls. It was thought to be the cause of death in four of the smokers. The longevity of the control rabbits was significantly longer than that of the smokers. -- Authors' summary

625 Rubella at a Military Installation. A. Peczenik and J. R. Gauld. Arch. Environmental Health 6, 657-663 (May 1963).

The occurrence of rubella at Fort Ord, California, has been described. The incidence of rubella was found to be generally higher at Fort Ord than at other recruit training installations of the United States Army. The vast majority of cases occurred in recruits undergoing the first 8 weeks of training. The peak incidence was found to occur between the fourth and seventh weeks of basic training. The rates were highest among the Mongolian and other closely related races and were lowest in the Negro race. Relative comparisons indicate that recruits from Hawaii, Utah, and California were found to have higher rates than other states in the Sixth Army Area. The incidence in Hawaiians was estimated to be 3 to 5 times higher than that in other recruits from this area. The average duration of hospitalization was 3.5 days. -- Authors' summary

626 Brucellosis: A Study of 27 Cases from the Royal Melbourne Hospital. D. C. Cowling and T. H. Hurley. Med. J. Australia 1, 69-72 (Jan. 19, 1963).

The Australian literature on brucellosis is briefly reviewed. Twenty-seven cases (21 in males and 6 in females) of Br. abortus infection in patients admitted to the Royal Melbourne Hospital are reported. Seven patients worked in the dairy industry and 5 in the meat industry. The most frequent clinical findings were fever and sweating, headache of frontal type, diarrhea, arthralgia, and enlargement of the liver and spleen. Methods of diagnosis are considered, stress being laid on the value of blood culture. In 4 of 5 cases of patients admitted during 1961, a positive result was obtained on blood culture. Often the strains of Br. abortus isolated were atypical. It is considered that some cases of Br. abortus infection are still unrecognized. -- Public Health Eng. Absts.

627 Infection of Man with Mimeae. R. C. Reynolds and L. E. Cluff. Ann. Internal Med. 58, 759-767 (May 1963).

Mimeae organisms are commonly isolated from culture specimens obtained from human beings. They may cause any type of infection. To recognize their role as pathogens, however, laboratory personnel must be able to identify them, and the clinician must be aware of their ability to infect man. The clinical characteristics of 42 cases of human infection with Mimeae and a simple scheme for their bacteriological identification are described. -- Authors' summary

628 The Use of Injectable Phenyramidol in Musculoskeletal Disorders. M. C. Igloe. Ind. Med. & Surg. 32, 242-247 (June 1963).

Parenteral phenyramidol, a new muscle relaxant and analgesic agent, was administered by the intramuscular route to 72 clinic and private patients presenting acute or chronic musculoskeletal disorders. Sixty-eight of the 72 patients, or 94%, achieved some therapeutic benefit ranging from fair to excellent as a result of a single administration. Twenty of the 72 patients reported some side effects, 16 of which consisted merely of transient lightheadedness which appeared to be of little concern to the patient. This agent appears to be an effective injectable analgesic and muscle relaxant, for a high percentage of patients with acute and chronic musculoskeletal disorders. -- Author's summary

629 An Evaluation of Tracheostomy in Pulmonary Emphysema. J. H. Cullen. Ann. Internal Med. 58, 953-960 (June 1963).

Ventilation and arterial blood gas studies have been done in 14 patients when breathing through the mouth alone and compared with those found when patients breathed through the tracheostomy alone. When patients breathed through the tracheostomy alone, the total ventilation decreased, principally as a result of a reduction in dead space. Changes in oxygen consumption were variable, but there was a tendency for oxygen consumption to be reduced when subjects breathed through the tracheostomy. Only one patient showed an increase. The carbon dioxide tension remained constant, suggesting that its level was fixed by the respiratory control system and was not influenced by the manner of breathing. One hour after tracheostomy there is often a deterioration in the concentrations of blood gases, but at 24 hours the oxygen saturation is often increased, and the carbon dioxide tension is decreased. It is believed that tracheostomy reduces the burden of ventilation in patients with severe pulmonary emphysema, and that its value is not just limited to facilitating the removal of pulmonary secretions. -- Author's summary

SKIN DISEASES AND BURNS

630 Plantar Warts in a School Population. J. F. Schmid. Lancet 82, 195 (1962).

The author found the incidence of plantar warts in 1001 high school students to be 5.9%. Extra-plantar warts in 660 students were found in 6.0%. Attempted control of spread of plantar warts by preventing wart-infected students from using showers, lockers and swimming pools in one school did not lower the occurrence of plantar warts in that school. Trauma seemed to play a role in the localization of warts, as most hand warts were on the right.
-- Can. Med. Assn. J. Absts.

631 Cement Makers' Dermatitis in the Toulouse Region. J. Planques, et al. Arch. maladies profess. 23, 707-710 (Oct.-Nov. 1962). French.

Cement dermatitis accounts for 91% of occupational skin diseases in the area concerned. Predisposing and determining factors, and those found negative, support the idea of a complex etiology: hyperkeratoses and fissures are the result of physical and chemical trauma (alkali, friction, extremes of weather, etc.) and the skin lesions allow entry to the chrome, present in both the raw materials and the equipment, which is the sensitizing agent provoking the allergic eczema. Quick-setting and fresh cements are the most harmful. In one place only 2 cases of recurring eczema were seen in 30 years of supervision of 27 masons permanently employed as cement makers. This was evidence of good preventive measures which included the type of cement used (after storage) and type of working garments. A protective skin paste was found better than gloves and armlets. Liquid soap and showers were available. An ointment containing boric acid and zinc was distributed for use when work was finished, and lard was recommended to be applied at night to fissures. The men were examined every 3 months and those with cracked skin received special attention. The clinical course of 63 cases of dermatitis among masons, cement makers and porters is given along with an account of legislation, definition, compensation and the attitude of the men. Fifty-four were aged 30-64 years. Many prefer to remain at their own work, protecting the skin and putting up with recurrences. Aggravation may mean a higher permanent partial disability pension and this supplement to wages is often considered better than indemnity for ceasing this work for some hypothetical new employment. -- Bull. Hyg.

632 Contact Eczemas in Shoemakers and Shoe Wearers Due to Adhesive Substances. K. E. Malten and R. G. L. Van Aerssen. Berufsdermatosen 10, 264-268 (Oct. 1962). German.

The precise cause of contact eczema in the feet may be difficult to ascertain when there is suspicion that some substance in the footwear is at fault. This difficulty lies in the

fact that many of the materials, such as adhesives, used in the manufacture of boots and shoes, are marketed under trade names and the manufacturers are reluctant to reveal their composition. In this paper there is an account of an extensive range of skin patch tests carried out on 11 patients with eczema of the feet and 5 shoemakers who suffered from eczema of the hand. The final conclusion was that the eczemas were caused by sensitization to certain constituents of adhesives used in the making of shoes. In those persons who showed a skin reaction to phenol formaldehyde resin which is used in adhesives it was found that the sensitizing substance was para-tertiary butylphenol. -- Bull. Hyg.

633 Polyester Resin Hazards. L. B. Bourne and F. J. M. Milner.
Brit. J. Ind. Med. 20, 100-109 (April 1963).

Polyester resins are being increasingly used in industry. These resins require the addition of catalysts and accelerators. The handling of polyester resin system materials may give rise to skin irritations, allergic reactions, and burns. The burns are probably due to styrene and organic peroxides. Atmospheric pollution from styrene and explosion and fire risks from organic peroxides must be prevented. Where dimethylaniline is used scrupulous cleanliness and no-touch technique must be enforced. Handling precautions are suggested.
-- Authors' abst.

634 Interdigital Pilonidal Sinus Due to Pig Bristles. A. C. DaRoza.
Brit. J. Ind. Med. 20, (April 1963).

Many cases have been reported of interdigital pilonidal sinus in the hands of barbers, due to implantation of human hair. Wool can cause similar lesions among handlers of sheep, and horse hair among upholstery workers. The case reported here demonstrates that pig bristles may also be a causative agent. A slaughter-house worker aged 47 attended the dermatological clinic with one month's history of wetness and irritation of the skin between the left middle and ring fingers. The left ring finger had become inflamed 6 months previously, the inflammation subsiding towards the base of the digit and resulting in the gradual formation of a lump dorsally over a period of 3 months. On examination there was an interdigital sinus from which protruded 2 lengths of hard bristle 0.25 in. (0.63 cm.) long. The sinus when probed was found to extend towards a granulomatous plaque which was 0.5 in. (1.27 cm.) in diameter and situated dorsally one in. (254 cm.) from the interdigital web. Under local anesthesia the plaque and sinus were excised en bloc. Within this tissue about a dozen lengths of bristle were found. These were identified by the patient as having come off a pig. The patient worked for 20 years in a slaughter-house.

635 Fatal Anaphylactic Reactions to Wasp Stings. A Review, with Immunologic Studies of a Fatal Case. W. F. McCormick. Am. J. Clin. Pathol. 39, 485-491 (May 1963).

The recent and most pertinent literature on severe and fatal reactions to Hymenoptera stings is reviewed, including the immunologic characteristics of their venoms. The present case concerns a 45-year-old Negro who was stung twice by paper wasps, Polistes fuscatus, while working in his yard. He immediately broke out in a profuse sweat, and lost consciousness. He was dead within 15 minutes of having been stung. Details of the autopsy findings and the special immunologic studies are reported. This is thought to be the first fatal case in which specific anti-wasp venom antibodies were demonstrated.

636 Dysbacteria of the Skin as an Etiological Factor in Occupational Pyodermatitis.
P. Popchristov, A. Todorov and P. Michailov.
Berufsdermatosen 10, 241-252 (Oct. 1962). German.

This paper contains an account of an extensive series of qualitative and quantitative bacteriological examinations of the skin of the hands of coal miners and other workers, the purpose of which was to gain information on the mechanism whereby the skin is protected against infection. As a result of the findings in the experiments the authors of this paper have reached the opinion that in coal miners but not in other workers the bacterial flora of the skin is in a

state of dysbacteria (Dysbakterie) because the antibiotic action normally produced by white staphylococci is partially destroyed in a large percentage of instances. This effect is considered to be, in conjunction with other factors, a phenomenon responsible for the well-known prevalence of pyodermia in coal miners. -- Cond. from Bull. Hyg.

637 Observations on Skin Cancer Among Refinery Workers. Limited to Men Exposed to High-Boiling Fractions. L. Wade. Arch. Environmental Health 6, 730-735 (June 1963).

Skin cancers occurred with about equal frequency and at about the same age among matched pairs of workers with and without potential exposure to high-boiling aromatic petroleum fractions. These findings may be due to the effectiveness of the protective program maintained or to the lack of carcinogenic effect upon human skin. Prolonged observation of the group reported or comparison of the findings in this group with those in other groups without protective measures is necessary to establish a definitive answer. -- Author's conclusions

CHEMICAL HAZARDS

638 Studies on the Toxicity of Petroleum Waxes. P. Shubik, et al. Toxicol. & Appl. Pharmacol. 4, Supplement 1 (Nov. 1962).

An investigation on the carcinogenicity of petroleum waxes (paraffin and microcrystalline), started in 1958 and sponsored by the American Petroleum Institute, is reported in detail. Covered are the analysis of polynuclear aromatic hydrocarbons present in waxes; elution studies of these hydrocarbons from waxes by milk, mouse, and rabbit skin-painting studies; subcutaneous implantation studies in mice; and lifetime feeding tests in rats at levels of 10% in the diet. Thirty-six samples were analyzed for polynuclear aromatic hydrocarbons and from these, 5 were selected for biological study. The great majority of waxes examined chemically contained no polynuclear aromatic hydrocarbons that could be identified at a level of 1 pphm. Six were identified in 8 waxes: benz(a)anthracene, benzo(e)pyrene, chrysene, fluoranthene, pyrene, and triphenylene at a maximum concentration of 0.64 ppm; 2 of these waxes were unrefined and included for experimental purposes, and 2 were included in the biological studies. In discussing the carcinogenicity of the 6 hydrocarbons identified it is concluded that none are unequivocally carcinogenic and, if any indeed are, the activity must be of a low order. Both the skin-painting and feeding studies yielded negative results. Benzene controls in the painting studies were also negative. In the subcutaneous implantation tests a number of fibrosarcomas developed in all groups around some of the wax disc implants. These results plus additional work on other materials to be published separately suggest that the sarcomas cannot be attributed to any specific chemical compound in the waxes but rather are related to physical properties of the implants. The elution studies suggested that the fat component of milk is at least partially responsible for the elution into milk of polynuclear aromatic hydrocarbons added to waxes. The authors conclude that no carcinogenic or other toxic hazard exists for petroleum waxes used in food packaging or other food applications. -- Cond. from J. Occ. Med. Absts.

639 Carcinogenic Effects of Adsorbates of Raw and Finished Water Supplies. W. C. Hueper and W. W. Payne. Am. J. Clin. Pathol. 39, 475-481 (May 1963).

Chloroform eluates made from adsorbates of raw and finished water of a river heavily polluted with industrial chemical pollutants, when subcutaneously injected into mice, elicited the development of spindle-cell sarcomas at the site of injection. Chloroform eluates, as well as alcohol eluates of such adsorbates on activated carbon prepared from raw and finished water, when subcutaneously injected or cutaneously applied, were probably the cause of leukemic reactions in some mice. The presence of a bladder papilloma in one mouse injected with a chloro-

form eluate of raw water points to the probable contamination of the water with chemical carcinogens acting on the bladder that were released from rubber-manufacturing plants. The rapidly growing contamination of sources of supplies of drinking water with carcinogenic agents demonstrates the urgent need for comprehensive chemical, experimental, and epidemiologic investigations on water pollutants for ascertaining whether or not such exposures of the general population may represent significant environmental cancer hazards. -- Authors' summary

640 Chronic Effects of Miotic Drugs. Studies of Anticholinesterase Activity and Functional Adaptation to Antiglaucoma Drugs. M. Kadin. Arch. Environmental Health 6, 736-741 (June 1963).

These studies indicate that echothiophate iodide is capable of producing marked inhibition of brain cholinesterase on chronic administration as eye drops, in rabbits. Demecarium bromide was found to produce relatively little inhibition of brain cholinesterase. Isofluorophate produced little systemic inhibition of enzyme activity, probably because of hydrolysis or defluoridation of the compound. Marked inhibition of enzyme activity was found with demecarium, echothiophate, and Paraoxon, and the majority of this effect occurred within the first 7 days of treatment, so that little increment of inhibition occurred in subsequent treatment up to 21 days. No symptoms of muscarinic or nicotinic toxicity were noted, but 2 rabbits died during the experiment while under treatment with echothiophate. -- Author's summary

641 Specific Parodontal Changes in Workers Exposed to Carbon Monoxide, Dust or High Temperature. K. H. Guhrke. Intern. Arch. Gewerbepathol. Gewerbehyg. 19, 559-570 (1962). Ger.

The purpose of this investigation was to discover whether morbid changes found in the mouths of workers in steel works and rolling mills were to be regarded as specific in the sense of being caused or made worse by the conditions of work and as indicating the possible presence of general impairment of health. The investigations and the findings are described in detail with some account of the nature of the work done by different groups of men. In these groups were 667 men of whom 156 were exposed to carbon monoxide, 152 to dust from sand, 180 to high temperatures, and 179 were not exposed to any such exposures and acted as controls. Conditions of exposure in the first 3 groups were: (1) the carbon monoxide content of the air at work was on average 0.01 volumes per cent, (2) dust from the sand had a particle size of between 0.002 and 0.7 mm. and (3) the temperature varied greatly but was often over 35°C (95°F). A table sets out (1) the number of dental defects found on examination, (2) the degree of gingivitis present, and (3) the illness suffered. The main conclusion was that in all three groups there are dental and parodontal changes which are to be regarded as caused by conditions at work and their presence may be of practical value to the examining physician as indications of the nature and severity of illness. -- Cond. from Bull. Hyg.

642 Hypercholesteremia After Administration of Bromide. I. Rosenblum, et al. Arch. Pathol. 75, 591-594 (June 1963).

The oral administration of bromide to rats and dogs produced hypercholestermia. This effect was observed in rats only when their diet was supplemented with cholesterol, either 2% or 5%. However, in dogs the hypercholesteremic effect of bromide was observed on a diet without cholestrol supplementation. The mechanisms of this hypercholesteremic effect of bromide are not presently known, but it appears to involve the processes for intestinal absorption of cholesterol. -- Authors' summary

643 The Selective Injurious Response of Testicular and Epididymal Blood Vessels to Cadmium and Its Prevention by Zinc. S. A. Gunn, Thelma C. Gould and W. A. D. Anderson. Am. J. Pathol. 42, 685-702 (June 1963).

In rats the testis and proximal end of the caput epididymis are specifically damaged by cadmium, by virtue of injury to their vascular supply, the internal spermatic artery and pampiniform plexus complex. This injury does not appear when animals are given protective amounts of zinc. Cadmium causes no injury to the distal end of the caput, the corpus and cauda

epididymis and the vasdeferens; the vascular system nourishing this area, the vasal vessels, also remains uninjured. Blood vessels in other body areas are undamaged. These studies furnish experimental evidence for the premise that endothelium may have a "morphologic organ specificity" with different reactions to various forms of injury. -- Authors' summary

644 The Determination of Thallium in Urine. M. Ariel and D. Bach. Analyst 88, 30-35 (Jan. 1963).

A method has been developed in which brilliant green is used for the spectrophotometric determination of thallium in urine. The thallium-brilliant green complex, formed in the presence of the organic substrate, is extracted into toluene. The optimum conditions for the determination are described, and the sources of various interferences examined. The method has been used to check thallium excretion in the urine of patients. -- Public Health Eng. Absts.

645 Lead Exposure Among Decorative and House Painters. G. S. Siegel. Arch. Environmental Health 6, 720-723 (June 1963).

Single blood lead concentration determinations were done among 107 male decorative and house painters employed by the Federal General Services Administration in the Washington, D.C. area. No elevated blood lead levels were found, the mean for the group being 0.023 mg. of lead per 100 gm. of whole blood and the range from 0.013 to 0.040 mg. This mean level approximated that of a control group of 5 males and the recently reported mean blood concentration value of an urban male population. The federal painters' practices are thought to be representative, and their risk of lead poisoning associated with current materials and methods of application used in the decorative and house painting trades appears to be negligible. Within the painter group, no significant relationship between blood lead values were associated with age, methods of application, or number of years engaged in the painting trades. -- Author's summary

646 The Relative Value of Urinary Lead Determination for the Diagnosis of Lead Poisoning. J. DeBruin. Ned. Tijdschr. Geneesk. 106, 2545-2546 (Dec. 15, 1962). Dutch.

The determination of lead excretion in the 24 hours urine cannot be considered a deciding factor in the diagnosis of industrial lead poisoning. In 36 cases of lead poisoning seen by the author, no correlation was found between spontaneous excretion of lead and excretion after Ca-EDTA. The latter gives a clearer picture of the amount of lead ions circulating in the blood. -- Bull. Hyg.

647 Effect of Penicillamine in Promoting Lead Excretion. J. Wyllie, H. Petermann and Elisabeth Petermann. Can. Med. Assn. J. 88, 1155-1159 (June 8, 1963).

A spectrochemical study of the urine and blood of 14 subjects exposed to lead in their work for several years, but without obvious signs of intoxication, was carried out to determine the porphyrin and lead content before and after a provocative dose of 0.9 g. penicillamine, administered on a single day. The average total urinary porphyrin excretion before administration of penicillamine was 0.506 mg. per liter (normal value = 0.274), and after penicillamine administration 0.386 mg. per liter (normal value = 0.274). The average lead excretion before administration of penicillamine was less than 0.013 mg. per liter (normal value = 0.031) and after administration of penicillamine 0.367 mg. per liter (normal value = 0.047). The average erythrocyte porphyrin content was 76.8 microgram per cent before and 76.95 microgram per cent after administration of penicillamine—values approximately thrice normal. Blood lead content before administration of penicillamine averaged 7.61 microgram per cent and after penicillamine 5.68 microgram per cent. Lead excretion in exposed persons before penicillamine administration was less than in apparently normal persons, while porphyrin levels were higher. The effect of penicillamine is shown by a definite increase in lead excretion (average = 0.406 mg. lead per gram penicillamine administered) and a decrease in porphyrin excretion in the 14 subjects. -- Authors' abst.

648 Absorption and Toxicity of Ethionamide. H. J. Weinstein, W. Y. Hallett and A. S. Sarauw. Am. Rev. Resp. Dis. 86, 576 (1962).

Eleven patients were treated with the experimental drug, ethionamide. In every case they had far-advanced, chronically active pulmonary tuberculosis. In only one patient was any beneficial effect observed, but this could not be attributed with certainty to ethionamide. Serum determinations suggested that the absorption was poor. Toxicity was another limiting factor in precluding satisfactory exploration of potential benefits. In addition to severe gastrointestinal irritation, the marked anorexia and depression that were observed made the agent unsatisfactory. The latter symptoms suggest central nervous system effects. No peripheral neuropathy was observed in this series, but this finding has been reported. At present, the authors believe that there is no convincing evidence that this drug should be used, except for possible continuation of experimental studies. Although this agent does inhibit the growth of drug-susceptible strains in vitro, the concentrations necessary are much higher than can be achieved in vivo, especially in view of its toxicity. Further, the activity which can be demonstrated is of a class markedly inferior to that of streptomycin and isoniazid.
-- Can. Med. Assn. J. Absts.

649 Liver Tumors Produced in Rats by Feeding Safrole. Eleanor L. Long, et al. Arch. Pathol. 75, 595-604 (June 1963).

Five groups of Osborne-Mendel rats, 50 per group and evenly divided by sex, received 5,000, 1,000, 500, 100, or 0 parts per million, respectively, of safrole (4-allyl-1, 2 methylenedioxybenzene) in their diet for 2 years. The organ most severely affected was the liver, injury being moderate to severe at 5,000 ppm, slight to moderate at 1,000, slight at 500, and very slight at 100. Changes in the liver consisted of benign and malignant tumors (hepatic cell adenoma, hepatocholangioma, hepatic cell carcinoma, and hepatocholangiocarcinoma), enlargement of hepatic cells (either diffuse or nodular), variation in cell size, fatty metamorphosis, architectural irregularity, bile duct proliferation, focal cystic necrosis, focal peripheral margination of cytoplasm, and minimal coagulation necrosis. At 5,000 ppm hepatic tumorigenesis was very significantly increased ($P. < 0.001$), with 14 animals having malignant and 5 having benign tumors versus 2 and 1, respectively, in the controls. At 1,000 ppm there were 8 hepatic tumors, all benign. It is concluded that safrole is a lowgrade hepatic carcinogen for the rat, apparently acting on a basis of previous non-neoplastic damage. Other effects of safrole, at 5,000 ppm only, were a marked increase in mortality, retardation of growth, mild anemia and leukocytosis, and slight atrophy of the bone marrow. -- Authors' summary

650 A Doctor's Prescription for Safety. M. R. Zavon. Pest Control 31, 16-18 (Jan. 1963).

The business of pest control requires the use of chemicals which are potentially hazardous to the operator and to the public. Unless the operator is prepared to use these chemicals in a safe manner he will soon lose public confidence. Personnel working as pest control operators should be examined by a physician periodically to help prevent accidents due to physical and emotional problems. The personnel should be well informed regarding the materials with which they are working and should know what these materials can do to man as well as to insects, rodents, or other pests. Safety precautions should be instituted to protect the worker. These include frequent showering and changes of clothing, provision for hand washing before eating, and medical consultation when indicated. To protect the public, use of sodium fluoride and thallium should be restricted, and other pesticides should be used with attention to the need for avoiding unnecessary exposure of people in the area. -- Public Health Eng. Absts.

651 Spotlight on Safer Insect Control. Anon. Chem. Week 92, 55-58 (Feb. 9, 1963). (Chemical Week, McGraw-Hill Publishing Co., 330 W. 42nd Street, New York 36, N.Y. *).

Insecticide researchers are following up their success in devising potent pest killers with a concentrated effort to eliminate hazards to other forms of life. Two approaches look particularly promising: (1) combining toxicant (only tiny amounts are needed) with food bait; and (2) using a sex attractant to draw insects into contact with a chemosterilant, which destroys their ability to reproduce. -- Public Health Eng. Absts.

* Address not in current List of Periodicals.

652 Experimental Investigations on the Toxicity of Certain Chemical Substances used in the Manufacture of Transparent Plastic (Plexiglass). Silvia Gabor, et al. Igiena (Bucharest) 11, 27-30 (Jan.-Feb. 1962).

The authors have carried out an experimental investigation of the toxicity of acetone cyanhydrin and ethyl acrylate, which are used in the manufacture of Plexiglass. When mice were exposed for 2 hours to air containing the vapor of acetone cyanhydrin in varying concentrations the 50% mortality point was found to lie between 2 and 2.5 mg. per liter, and the concentration producing narcosis in 50% of the animals lay between 1 and 1.5 mg. per liter. The compound was thus extremely toxic. In earlier work a limiting concentration of 0.05 mg. per liter had been proposed for ethylacrylate. In the present work it was found that the cytochrome oxidase activity of the brains of mice exposed to this concentration for 1 hour was considerably below the normal level; no reduction in activity was noted with a concentration of 0.025 mg. per liter. -- Bull. Hyg.

INDUSTRIAL DUSTS

653 Collection Efficiency of Jet Impactors at Reduced Pressures. S. C. Stern, H. W. Zeller and A. I. Schekman. Ind. Eng. Chem., Fundamentals 1, 273-277 (Nov. 1962).

The collection efficiencies of circular and rectangular jet impactors have been determined at reduced pressures using monodispersed, solid, homogeneous aerosols. Variables include particle size, jet-to-slide spacing, jet size, jet velocity, and pressure. The data are compared with theoretical and experimental results by other investigators. Areas of agreement and disagreements are discussed. The experiments verify the significant role of the Cunningham correction for slip at reduced pressures. -- APCA Absts.

654 A New Method of Preparing Carbon-Coated Copper Electron Microscope Grids. S. Posner and E. Miner. Am. Ind. Hyg. Assn. J. 24, 188-191 (Mar.-Apr. 1963).

A new method for the preparation of carbon-coated copper grids for standard electron microscope applications is described. It is relatively simpler, faster, more efficient and less expensive than traditional procedures, and is particularly suited for quantity output. Mica sheets are used for the preliminary substrates. A specially designed (grid holder and lifter which can recover 35 grids in one movement is used. Dimensional sketches of the grid holder and lifter are given. -- Authors' abst.

655 Experimental Studies in Byssinosis. A. Bouhuys. Arch. Environmental Health 6, 742-747 (June 1963).

The author concludes that there is good evidence that byssinosis in cotton and other vegetable fiber workers is caused at least in part by inhalation of dust containing agents which cause release of histamine in tissue without previous sensitization.

656 Pulmonary Disease and Hair-Spray Polymers: A Disputed Relationship. M. J. Brunner, et al. J. Am. Med. Assn. 184, 851-857 (June 15, 1963).

Massive exposure of experimental animals to a vinylalkylether/maleic ester copolymer hair spray by inhalation did not produce granulomatous disease as described in alleged human cases. Intratracheal instillation of hair-spray solids also failed to reproduce the syndrome. In alleged cases of hair-spray thesaurosis, the connecting link was the presence of intracytoplasmic granules stained by the periodic acid-Schiff method and said to be particles of hair-spray resin. However, similar granules were found in a number of diverse pulmonary

disorders in patients who had not been exposed to hair sprays, and the general staining characteristics of several hair-spray polymers did not correspond with those of the granules found in claimed instances of thesaurosis. -- Authors' abst.

657 Dust and Fibrosis in the Lungs of Coal Workers from the Wigan Area of Lancashire. R. Spink and G. Nagelschmidt. Brit. J. Ind. Med. 20, 116-123 (Apr. 1963).

During the years 1953 to 1957 more than 1,000 lungs of coal workers in the Wigan area were examined and compared with lungs from workers in South Wales. The Wigan lungs in general appeared to be less dusty and progressive massive fibrosis less frequent than in the South Wales lungs. Also, the more advanced cases of progressive massive fibrosis appeared to be of a silicotic type. Of these lungs, 100 were selected for study of the relation of the type and severity of pneumoconiosis to right ventricular hypertrophy, using Gough-Wentworth sections. The remaining tissues from 47 of these lungs were used for an analysis of the content and composition of the dust and its relation to the grade of fibrosis. The average coal and quartz percentages of the dust from the lungs in the Wigan area were similar to previous findings in lungs from the Cumberland coal field but differed from those in South Wales where the lung dust has a higher coal and a lower quartz percentage. Two possible explanations for this finding are discussed. -- Authors' abst.

658 The Handling of Particles by the Human Lungs. C. N. Davies. Brit. Med. Bull. 19, 49-52 (Jan. 1963). (British Medical Bulletin, Medical Department, British Council, 65 Davies St., London W1, England*).

When air which is inhaled has particles in suspension, some are deposited in various sections of the respiratory tract and some are breathed out again. Reactions originated by the deposited particles depend on their solubility, but some dust diseases are caused by substances which are almost insoluble. The latter are dangerous only if they reach the alveolar parts of the lung. Dust which deposits on the bronchial epithelium is cleared rapidly from the respiratory tract by ciliary action and can produce systemic effects only by solution through the bronchial epithelium or while traversing the digestive tract after being ejected from the trachea. Of the dust which deposits in the alveoli, a substantial but much delayed clearance takes place; quite slowly soluble particles may produce a vigorous lung reaction, while insoluble ones, if permanently retained, are a potential cause of the pneumoconioses, or long-term dust diseases. The distinction between deposition and retention is relevant to the distinction between the immediate toxic action of a soluble material and the long-term development of pneumoconiosis. The handling of deposited particles is, therefore, of great importance in connection with the slowly developing dust diseases. The subject of the handling of deposited particles by the lungs is discussed in detail. -- Cond. from APCA Absts.

659 Observations on the Diagnosis of Pneumoconiosis, with Special Reference of Radiography. The Bridge Memorial Lecture 1962. A. I. G. McLaughlin. Trans. Assn. Ind. Med. Officers 12, 74-89 (Oct. 1962).

The x-ray film is not an absolute guide to the pathological changes present in the lungs. The x-ray picture can be varied with even minor alterations of good technique and with different phases of respiration. The occupational history and clinical examination are just as important as the x-ray film; in some cases they are more important. These conclusions are supported by illustrative case histories. The autopsy on a patient exposed to aluminum dust for 14 years with no definite changes in the x-ray film revealed extensive interstitial fibrosis with a good deal of aluminum dust. In a second patient exposed to graphite dust containing 10% of free silica for 19 years, x-ray films taken with a broad focus tube did not show pneumoconiosis. With a fine focus tube a pinhead nodulation showed up all over the lungs; Kerley's lines were seen at the right base. A macroradiograph confirmed this. On the other hand, many non-industrial conditions may present an x-ray pattern like that of silicosis. Among them are: miliary tuberculosis, pulmonary hemosiderosis, alveolar carcinoma, and honeycomb lung. Differential diagnosis is greatly helped when a careful industrial history is taken, so that dust inhalation can be excluded or its intensity discovered. The clinical examination with all available diagnostic aids should be

* Address not in current List of Periodicals.

exhaustive. Sputum examinations may reveal organisms, macrophages containing dust or asbestos bodies. Lung function tests would demonstrate any alveolar-capillary block present. A case is quoted where a course of anti-tuberculous chemotherapy for 6 months cleared nodules from the lung, thus showing that the patient did not suffer from pneumoconiosis. Workers exposed to radio-opaque dusts such as iron, tin, barium and emery, often show alarming x-ray pictures in the absence of symptoms or disability. -- Cond. from Bull. Hyg.

660 Effect of Radiographic Technique on Readings of Categories of Simple Pneumoconiosis. M. E. Wise and P. D. Oldham. Brit. J. Ind. Med. 20, 145-153 (Apr. 1963).

Two chest radiographs of each of 687 coal face workers, obtained during two surveys 2 1/2 years apart at 8 pits in South Wales have been assessed according to their technical quality as "acceptable", "black", "grey", or "white". The effect of variations in quality on the reading of the category of simple pneumoconiosis (independently carried out) is reported; the effect on change of category between the 2 surveys is considerable. From the distributions of categories in each class of technical quality within a pit on each survey, it appears that the extreme categories 0 and 3 are read proportionately more often on acceptable films than on imperfect films. This phenomenon is described quantitatively by fitting a continuous distribution of abnormality to each of the sub-groups, and transforming the x-ray continuum scale into a scale that approximately normalizes the distributions. Measured in this way, the black films are found to have more than twice as much effect on the reading as the grey and white films. A method for approximately correcting for this effect is given. The findings are interpreted in terms of random observer error in assessing abnormality on a continuous scale, and a recently published model for observer error is criticized. -- Authors' abst.

661 Estimating Progression of Coal Workers' Simple Pneumoconiosis from Readings of Radiological Categories. M. E. Wise and P. D. Oldham. Brit. J. Ind. Med. 20, 124-144 (Apr. 1963).

The 1950 International Labour Organisation (I. L. O.) classification of radiological abnormality in simple pneumoconiosis describes 4 discrete categories, but the actual amount of abnormality in an individual does not change by discrete steps. Radiological progression is the increase of a continuous variable, and methods of measuring it must deal with 3 problems: (1) the coarse classification into discrete categories; (2) possible variation in the rate of an individual's progression from point to point on the continuum of abnormality; (3) the possible non-uniformity of the continuum in relation to some relevant change in the lungs. The methods proposed for measuring progression were developed from an analysis of 2 surveys, 2 1/2 years apart, of 689 coal face workers in 8 pits. Some results from a third survey 5 1/2 years after the second are also used. Merits of different methods of film reading are considered. Smooth curves were fitted to the distributions of abnormality found at each survey of each pit, and the progression of the first smooth curve into the second was estimated by a new method of "percentile pairing". The amount of progression within category 1 was found to be about double that in category 2 in all the pits. A new scale of abnormality was derived that makes this change more nearly uniform all along the continuum, and a single index was thus obtained for comparing one pit with another. Progression was also measured on the dust retention scale of Rivers, Wise, King, and Nagelschmidt (1960), and again was greater throughout category 1 than throughout category 2, so that in terms of dust retention progression is not uniform at different points in the continuum of radiological abnormality. -- Cond. from authors' abst.

662 Two Cases of Silicosis with Rapid Development Appearing Long After Exposure. R. Longueville. Arch. maladies profess. 23, 836-838 (Dec. 1962). French.

Details are given of the development of silicosis, with a rapid course which occurred in two miners, four and five years respectively after occupational exposure had ceased. -- Bull. Hyg.

663 Asbestos as Modern Urban Hazard. J. G. Thomson, R. O. C. Kaschula and R. R. MacDonald. S. African Med. J. 37, 77 (Jan. 19, 1963).

In smears from lung bases from 500 consecutive autopsies in subjects of 15 years or over, asbestos bodies were found in 30% of the males and 20% of the females. In most cases these bodies were scanty and not associated with pulmonary changes and are considered to be the result of contamination of the urban atmosphere. In 6% of the males the bodies were numerous and were presumably of occupational origin. In 3 of the 132 positive cases there was associated pulmonary fibrosis and disability. In only one of these a history of exposure to asbestos was obtainable. An increase in the amount of urban air contamination seems to be inevitable in view of the increasing consumption and diversity of uses of asbestos, and of its indestructibility. The tendency for asbestos fibers to concentrate in the bases of the lower lobes of the lungs produces a cumulative effect, and an increase in the frequency of basal asbestosis is probable. This basal asbestosis does not result in pulmonary disease or disability, but appears to be of etiological significance in mesothelioma of pleura or peritoneum.

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

PHYSICAL ASPECTS OF THE ENVIRONMENT

664 A Preliminary Study of Some Health Hazards in the Plasma Jet Process. D. E. Hickish and P. J. R. Challen. Brit. J. Ind. Med. 20, 95-99 (Apr. 1963).

A brief technical description is given of the plasma jet process, and reference is made to its likely practical applications in industry. An opportunity has been taken during experiments with a prototype plasma jet to assess some of the health hazards which might arise from these industrial applications and to indicate the type of precautions which should be observed in practice. Measurement and analysis of the noise emitted during the operation of a jet showed that the sound intensities ranged from 79.5 to 90.5 db. (re 0.0002 dynes/sq. cm.) per octave band between 300 and 10,000 cycles/second. Three male volunteers exposed to the noise for a period of one hour were subsequently found to have a mean temporary threshold shift of 19 db. at 4,000 cycles/second. Air sampling and analysis for ozone and nitrogen dioxide in the near vicinity of the jet gave a negative result for the former substance but demonstrated that the latter contaminant was present in concentrations ranging from 0.1 to 9.6 ppm.

-- Authors' abst.

665 Protection Against Toxic Substances in Space Travel. H. H. Bovee and J. E. Schubert. Am. Ind. Hyg. Assn. J. 24, 168-171 (Mar.-Apr. 1963).

Of the many sources of toxic contaminants in the space cabin atmosphere, thermal decomposition products from elastomers, plastics and other compounds are the most hazardous. A study of the decomposition characteristics and toxicity of several of these materials indicates that the smoke and fumes given off contribute significantly to the toxicity predicted on the basis of gaseous decomposition products only. Removal of normal air contaminants is within the present state-of-the-art capability but protection against thermal decomposition products caused by fire may not be economically feasible except by depressurization and atmosphere replacement.

-- Authors' abst.

666 The Environment of the Moon. P. A. Campbell. Arch. Environmental Health 6, 724-729 (June 1963).

The natural environment of the moon poses formidable problems from the standpoint of human habitation. Its almost complete lack of atmosphere and magnetic shield nakedly expose its surface to the electromagnetic radiations of space. High energy particles of various

sizes and velocities strike without attenuation. Temperatures and rapidity of temperature changes are extreme. Its gravity factor is about one-sixth of that of our earth. These and many other factors impose a unique and hostile situation to man. The environment and the problems of man's interaction with the environment are discussed.
-- J. Am. Med. Assn. References and Reviews

667 Thermal Comfort in the Hot Humid Tropics of Australia. C. H. Wyndham. Brit. J. Ind. Med. 20, 110-117 (Apr. 1963).

Day and night comfort votes were recorded from Caucasian residents at Weipa, a mission station in the hot humid tropics of North Queensland, Australia. The limit of day comfort for more than 50% of the men was 81.5°F (27.5°C) "normal" corrected effective temperature; the night limit was 78.0°F (25.5°C). Day comfort limits correlated well with air conditions at which sweat was apparent; night limits correlated with the amount of bed covering. Evidence of a change over 14 days in day comfort limit was found. Limitations in the effective temperature scale for expressing the "oppressive nature" of night air conditions are pointed out. Criticism is voiced of the use of dry bulb temperature instead of the effective temperature scale in conditions of high wet bulb temperatures with high relative humidity, such as in the hot humid tropics. -- Author's abst.

668 Neurosensory Hearing Loss Due to Acoustic Trauma. Hearing Aid Evaluation. R. R. Rupp. Ind. Med. & Surg. 32, 231-234 (June 1963).

For all patients with questionable hearing loss, careful otological and audiological studies are imperative. Seven cases of hearing loss due to acoustic trauma were reported. Of this group, three patients were not referred for hearing aid evaluation studies because their hearing losses were minimally disabling in a communication sense. Three patients had hearing aid evaluation studies and the results of these studies are reported in this paper. One patient presented a picture of mixed type hearing loss, and a medical program was outlined for him. Each patient is unique. There are no easy rules to follow. There are, however, strong bases on which both otological and audiological recommendations can be made.
-- Cond. from author's summary

669 Neurosensory Hearing Loss Due to Acoustic Trauma. Clinical Evaluation. J. L. Dill. Ind. Med. & Surg. 32, 227-230 (June 1963).

Seven patients with a loss of hearing have been reviewed. Six had a loss of hearing due most probably to acoustic trauma. These six case records revealed the association of the hearing loss with acoustic trauma, and the degree of hearing loss was in direct proportion to the degree and duration of the noise exposure. In two of these six patients, the diagnosis presented certain difficulties. Case V disclosed a high tone loss, probably due to acoustic trauma, and, in addition, a loss for all the low tones. This low tone loss was not due to acoustic trauma, but was apparently of central origin. Case VI revealed a marked loss of hearing for all tones, evidently due to acoustic trauma. This patient failed to utilize all his hearing ability. Repeated tests showed a hearing loss which no doubt could be helped with a hearing aid. Case VII was a patient whose diagnosis could be mistaken readily for a loss due to acoustic trauma. His examination showed predominantly a conductive deafness of otosclerotic origin. This patient most probably can develop an improvement of hearing with surgery. -- Author's summary

670 The Operation and Organization of Routine Examination of Industrial Workers Exposed to Noise. H. Zenk. Z. ges. Hyg. u. ihre Grenzgebiete 8, 788-799 (Oct. 1962). German.

Observations on noise deafness in industry were first published 130 years ago in England. This paper contains a description with several tables of data on the results of audiometric examinations of workers in a variety of occupations. The main purpose of this paper is to emphasize the importance of the adverse effect that the stress of noise of increasing industrialization may have not only on the workers but also on the general population. In the German

Democratic Republic and some other countries there are legal requirements for the notification of deafness suspected of being caused by noise. The law should, however, be extended. Audiometric centers should be set up in industrial clinics in different districts and the information there obtained should be sent to a central institution for analysis and evaluation. Furthermore there should be a central organization for the investigation of the efficiency of different methods for measuring noise and for the organization of noise abatement. -- Bull. Hyg.

RADIOACTIVITY AND X-RADIATION

671 Radiation Therapy in the Treatment of Carcinoma of the Lung. R. C. Burr, E. N. MacKay and A. H. Sellers. Can. Med. Assn. J. 88, 1181-1184 (June 15, 1963).

In Ontario in the past 25 years, the death rate from cancer of the lung has shown a substantial increase, ninefold for males and twofold for females. The male:female ratio varied from an average of 8.5:1 to as high as 11.7:1 at the ages 65 to 69. From 1938 to 1958, one-quarter of the total cases (2457) were treated in Ontario Cancer Clinics. Survival rates were: for one year, 20%; three years, 6.5%; and for five years, 3.8%. Fifty-four per cent of surgically treated patients and 63% treated by resection and radiotherapy were alive one year after treatment. Of 821 cases treated with orthovoltage the one-year survival rate was 14%, and of 862 cases treated with cobalt therapy 23%. It was concluded that this improvement in results may be attributed to the difference in treatment. -- Authors' abst.

672 Semi-Quantitative Relationship of Radiation and Neoplasia in Man. V. E. Archer and C. L. Simpson. Health Physics 9, 45 (Jan. 1963).

It is hypothesized that a direct linear relationship exists between radiation-induced neoplasms and the ionizing events per cell (as measured by rad) multiplied by the number of cells irradiated (as measured by grams). By subtracting the "spontaneous" rate of a neoplasm from the "observed" rate in an irradiated human group, a "corrected" rate can be calculated and expressed in terms of the average dose in gram-rad required to produce one neoplasm. Such groups as the Hiroshima bomb survivors, British spondylitis patients, American spondylitis patients, patients treated with uterine radium, American radiologists, and patients given radiotherapy to the thymus yield remarkably consistant figures. Children appear to be more sensitive than adults. It requires a dose of about 4 million gram-rad to the reticuloendothelial tissue of a child to produce one leukemia, and about 180 million gram-rad in the adult.
-- J. Occ. Med. Absts.

673 Pre-Operational Environmental Survey for the Enrico Fermi Atomic Power Plant: 1958-1962. C. A. Pelletier and G. H. Whipple. Am. Ind. Hyg. Assn. J. 24, 172-179 (Mar.-Apr. 1963).

A pre-operational environmental survey for the Enrico Fermi Atomic Power Plant was begun in April 1958, and has continued to the present time. Data are presented for the spectrometer analysis of air samples showing the fraction of the total activity that can be identified with the gamma-ray spectrometer. The observed variations in radioactivity with time and sampling location are discussed and the gross beta radioactivity concentrations in airborne dust at 2 Southeastern Michigan locations are shown. Observed relationships between the average radioactivity concentrations and the variations from the average are discussed. All the media sampled during the survey are evaluated in terms of certain stated criteria. Conclusions are drawn regarding general survey methodology, sample media and the usefulness of the pre-operational survey. -- Authors' abst.

674 The Simultaneous Determination of Atmospheric Radon by Filter Paper and Charcoal Adsorptive Techniques. B. Shleien. Am. Ind. Hyg. Assn. J. 24, 180-187 (Mar.-Apr. 1963).

A method is described for the simultaneous collection of radon and its daughters from environmental air samples by a 2-stage sampling device. The radon daughter products are separated from the air stream by means of a membrane filter and radon itself is then adsorbed on activated charcoal in the samplers' second stage. Subsequent to collection, radon daughter activity is measured by alpha scintillation techniques, and gaseous radon concentration is determined by gamma spectrometry of the charcoal adsorption bed. Samples were taken under varying external environmental conditions, as well as indoors. Results are presented comparing atmospheric radon concentrations determined by direct and filter paper techniques. -- Author's abst.

675 Use of a Portable Whole-Body Counter to Measure Internal Contamination in a Fallout-Exposed Population. S. H. Cohn, et al. Health Physics 9, 15 (Jan. 1963).

A whole-body spectrometer is of considerable use in evaluating in large populations the body burdens of gamma-emitting material. In 1961, a 21-ton "portable" iron room facility was set up on a civilian cargo ship in the Marshall Islands. A population of Marshallese people, some of whom had been accidentally exposed to fallout in 1954, were ferried out to the ship and counted. "Spectral stripping" carried out on a computer, gave body burdens of individual isotopes. There were no large age or sex differences, but the Marshallese levels of Cs-137, Co-60, and Zn-65 were many times those of the medical team. K-40 levels were higher only to the extent of the increased muscularity of the Marshallese. -- J. Occ. Med. Absts.

676 Remote Viewing for Radiation Environments. W. F. Scharenberg, Jr. and O. A. Ullrich. Battelle Tech. Rev. 12, 9-16 (June 1963).

Special optical equipment has been evolved to enable viewing of operations and study of materials in hot-cell laboratories. The authors describe the characteristics of various remote viewing systems and explain how systems can be adapted to various uses and how the effects of radiation on the apparatus can be mitigated. -- Authors' abst.

677 Cincinnati's Radioactive Fallout Monitoring Program. C. W. Gruber and C. E. Schumann. J. Air Poll. Control Assn. 13, 195-204 (May 1963).

In a number of communities throughout the country, the Air Pollution Control Officer has innerited the radiological protection assignment. This appears to be a logical mission for an air pollution control agency since one of its peacetime missions is the assessment of contamination of the atmosphere. Radiological fallout is atmospheric contamination in its truest sense. As public concern over fallout either from weapons testing or from an emergency situation grows, demand for more and more information concerning radiological fallout and its effect upon the community will arise. In the future more and more Air Pollution Control agencies thus will be asked to take on the radiation monitoring and civil defense Radiological Defense (RADEF) assignment. -- Authors' summary

678 Public Health Service National Fallout Surveillance Program. J. C. Villforth. J. Air Poll. Control Assn. 13, 222-227 (May 1963).

It can be seen from this study that the Public Health Service, through its system of federal-state surveillance networks, is capable of immediate nationwide assessment of the levels of radioactive contamination in the environment. A review of the actions taken in response to the Soviet tests last fall has shown how the Radiation Surveillance Network operates as an "alert" to the need for increased monitoring by other surveillance systems. A comparison of the levels of the principal radionuclides in milk with the ranges established by the Federal Radiation Council has indicated that control measures are not warranted at present. However, expanded federal and state surveillance capabilities are needed (1) to determine when and in what areas control measures should be initiated; and (2) to carry out continuous monitoring in order to quarantee the effectiveness of such measures once they have been instituted. This increased surveillance effort at the federal and state levels, will help assure an improved program to deal with hazards from nuclear weapons testing. -- Author's summary

ENVIRONMENTAL MEASUREMENTS

679 The Estimation of Phosphine in Air. J. G. Hughes and A. T. Jones. Am. Ind. Hyg. Assn. J. 24, 164-167 (Mar.-Apr. 1963).

A simple field method has been developed for the estimation of phosphine in the atmosphere of grain silos and other fumigation areas. The procedure uses silver nitrate impregnated papers as a means of visual detection. Quantitative estimation as low as 0.05 ppm is by color comparison with standard stains. Confirmatory analysis is by determination of reduced silver as the sulfide. -- Authors' abst.

680 Analysis of Peroxyacyl Nitrates by Gas Chromatography with Electron Capture Detection. E. F. Darley, K. A. Kettner and E. R. Stephens. Anal. Chem. 35, 589-591 (Apr. 1963).

The peroxyacyl nitrates are important constituents of photochemical air pollution causing both plant damage and eye irritation. Plant damage attributable to peroxyacyl nitrates has been observed in California and in 19 other states, which indicates the widespread occurrence of this specific photochemical product of air pollution. Electron capture detectors are less sensitive to hydrocarbons and simple oxygenates but very sensitive to nitrates. The results demonstrate that the important peroxyacyl nitrates can be measured in polluted atmospheres at less than 1 pphm with an electron capture detector using very small untreated samples. -- APCA Absts.

681 Air Sample Labeling. A. C. Weyerts. Health Physics 9, 236 (Feb. 1963).

The manual marking of filter discs, indicating the location of air samples, is time consuming and frequently damages the disc. The labeling of sample location, using visible deposits of the sample, is a superior method of identification. Commercially available letters or numerals cemented to air sample filter holders provide an effortless, nondamaging and positive identification method of labeling the filter discs. This dirt image identification is useful when the samplers have fixed locations, and when the amounts of residue and color of filters permit visible deposits. -- APCA Absts.

PREVENTIVE ENGINEERING

682 Report on Diesel Smoke. Informative Report No. 2. Vehicular Exhaust Committee (APCA). D. A. Jensen, Chairman. J. Air Poll. Control Assn. 13, 290-291 (June 1963).

The purpose of this report is to present a summary of factors that influence the production of exhaust smoke of diesel engines. Also provided is information relating to known methods for reducing or eliminating diesel smoke. It is, in effect, a report on the current state of the art in the area of diesel smoke and is intended to be used as a supplement to the results of laboratory research being carried on to determine the chemical composition of diesel engine exhaust. Included in this report are discussions of diesel fuel properties, engine adjustment and maintenance procedures, engine operation, and driver procedures, and features of engine devices. All of these items have an important bearing on the smoke properties of diesel engines installed in motor vehicles. -- Author's introduction

683 High Temperature Filter Media Performance with Shock Wave Cleaning. C. E. Billings and L. Silverman. Intern. J. Air and Water Poll. 6, 455-460 (Nov.-Dec. 1962).

Control of high temperature effluent dust and fume can be accomplished by deep fiber bed filtration. Fine stainless steel wool filters were found to remove 95-99% of oxygen-lanced open hearth furnace iron oxide fume, when operated at 100 ft./min. Removal of accumulated particles for air flow resistance control is achieved by a weak shock wave directed through the filter opposite to normal air flow. The use of a 2-in. deep fiber filter matrix yields a 2-10 times lower rate of resistance increase during filtration that can be obtained in fabric filtration practice at 1-2 ft./min. -- APCA Absts.

684 Fiber Glass Fabric Filters for High Temperature Dust and Fume Control. I. J. Gusman and R. C. Horton. J. Air Poll. Control Assn. 13, 266-267 (June 1963).

Although fiber glass fabrics have made much of their utility in filter bags in the last decade, improvements must be made in the fabrics, and fabrication in order to realize the maximum potential of the fine inorganic glass fiber. New yarns with improved flex life; new high temperature lubricants; imaginative use of the available weaves; more accent on the accumulation of the engineering data; more co-operation between the fabric manufacturer, the bag fabricator, and the user; and more consideration of the proper combination of the glass yarn, weave, and finish will result in the most effective use of the fiber glass in the massively important field of air pollution control. -- Authors' conclusions

685 Eliminating Mechanical Shaking of Dust Filter Bags. R. K. Kunkle. J. Air Poll. Control Assn. 13, 274-277 (June 1963).

The two methods used in cleaning the bags give the same performance in the amount of dust collected, the pressure drop across the collector, and in the same inlet static pressure. The effect on bag life when using the collapsing method can only be determined by prolonged operation. In an extended test of this method which lasted over one year in one compartment, approximately 10% of the bags were replaced because holes developed in the bags near the tube sheet. This was somewhat higher than normal. The average weight of a mechanically shaken filter bag just after cleaning was 3 pounds, while the average weight of a filter bag cleaned by the new method was 4.5 pounds. It is reasonable to assume that this additional weight had much to do with the bag failure as it tended to stretch the cloth and allowed it to fold into the tube sheet nipple. This exposed the area to additional wear when the bags were re-inflated upon returning to the filtering cycle. During the 127-day test, there was more dust adhering to the outside of the bags. This caused some complaints from the operating personnel who have to enter the compartments to clean the tube sheet or change bags. Suppliers of the filter bags have been told of this problem and are giving it study. -- Author's conclusions

COMMUNITY AIR HYGIENE

686 An Assessment of Community Air Quality. R. L. Stockman and P. W. Hildebrandt. J. Air Poll. Control Assn. 13, 268-271 (June 1963).

The Spokane community air pollution survey is not complete in all respects. There is much work left to be done to know the whole story of air contamination in the community. It did, however, accomplish the purpose for which it was designed; to provide sufficient factual data to serve as a basis for reasonable judgment on which the community can act. A community air quality survey can never be complete except to the extent that the survey limits are defined. It is important to define these limits before starting a survey and to recognize the need for continuing surveillance and evaluation as part of an on-going control program. The study served to demonstrate that a community air pollution survey can be undertaken by an agency with limited resources and, through utilization of local personnel, be brought to a successful conclusion. -- Authors' conclusions

687 Initial Experiences with the Comprehensive Air Pollution Survey in Nassau County, New York. R. D. Cusumano, J. T. Wendt and G. L. Wasser. J. Air Poll. Control Assn. 13, 281-289, 291 (June 1963).

The Nassau County Department of Health, with its own personnel, and in co-operation with the New York State Air Pollution Control Board, has undertaken a comprehensive survey to determine and assess air pollution conditions within its jurisdiction. It is planned to complete the study and prepare a final report by mid 1962. At that time, a control regulation will be presented for adoption as Article VII of the Nassau County Public Health Ordinance. This article will provide for a functional control unit in the Health Department. There is still much work to be done in the field and on the administrative level in order to develop an efficient air pollution control organization. -- Authors' summary

688 Plant Damage by Pollution Derived from Automobiles. E. F. Darley, et al. Arch. Environmental Health 6, 761-770 (June 1963).

Emissions from motor vehicles are now known to be the principal source of the raw materials contributing to photochemical air pollution in California. Some of the products of the reaction, ozone, peroxyacyl nitrates, and the unidentified products of ozone-olefin reactions, are very damaging to the leaves of a variety of crop plants. The injury that was once confined to Los Angeles County now occurs in many states and causes economic loss estimated in excess of $25 million annually. Ethylene, one of the compounds found in the exhaust, is also very injurious to several crops. The ability of a given toxicant to incite injury is dependent on the age of the leaf and the conditions of illumination under which the plant is grown prior to, during, and after fumigation. In addition, the growth of plants, even in the absence of visible injury, is materially affected. Evidence is presented to indicate that the chemical and physical systems within the plant are disrupted by the phytotoxicants. There are 45 references to the subject in the bibliography. -- Authors' summary

689 Air Pollution Potential Forecasts—A Year's Experience. M. E. Miller and L. E. Niemeyer. J. Air Poll. Control Assn. 13, 205-210 (May 1963).

After reviewing the results attained during the first complete year of operation, the authors believe that the over-all forecast program has been successful. Of the 12 cases of air pollution potential that occurred during the year of their study, 10 were forecast. The authors also believe that sufficient interest has been shown in this program to warrant its continuance. Improvements are needed, but these will come with continued research on the effects of meteorological elements on air quality as more precise and continuous air quality data become available. Research is under way to also provide this service to the western United States. -- Authors' remarks

690 Removal of Toxic Gases in Smog with Metal Filters. H. T. Freebairn. J. Air Poll. Control Assn. 13, 218-219 (May 1963).

The agents in Los Angeles smog which damage petunias and annual blue grass were in varying degrees removed or detoxified when passed through finely divided aluminum, magnesium, zinc, steel, or cadmium. Aluminum filters and activated carbon filters were equal in their ability to prevent both visible leaf damage and invisible damage (reduced plant vigor and growth rate). A detoxification of the damaging agents appeared to be taking place both with aluminum and activated carbon. -- Author's summary

691 Air Pollution from Power Plants and Its Control. T. T. Frankenberg. Combustion 34, 28-33 (Feb. 1963).

Methods are being sought for the removal of sulfur from coal before burning, and for the removal of oxides of sulfur and nitrogen from the flue gases. Changes in methods of combustion, control of volatile hydrocarbons, and increased care in stack design are given as solutions to this problem. Some of the variables to be considered in stack design are mentioned. The economics involved are briefly discussed. -- Public Health Eng. Absts.

692 Community Approach to Air Pollution Control: The Role of the Control Official. S. S. Griswold. J. Air Poll. Control Assn. 13, 220-221 (May 1963).

The air pollution control official is a person who plays a multifaceted role. He is concerned with the definition of both air quality and source emission standards. He is a program administrator, and an enforcement officer. He functions as a fact-gatherer and an impartial advisor to his legislative body and to his community. He acts as a program advocate and as a community leader in defining and resolving air pollution problems. In total, his job is one of filling many conflicting roles, and the maintenance of his objective and professional posture therefore becomes most difficult. This is a tough job and an unpleasant one, but the air pollution control official must assume the leadership in safeguarding our communities from the blight of air pollution as we would immunize ourselves against a dangerous disease.

-- Author's conclusions

693 Medicolegal Aspects of Air Pollution Research. I. Ladimer. Arch. Environmental Health 6, 772-778 (June 1963).

Public health law and administration must serve as companions to the sciences of medicine and biology. Unfortunately, too often, the law has been limited to composing legislative enactments and to use in arguing cases in adversary proceedings. Although it has these functions, it is necessary to develop within the legal profession, and in administrative and executive groups, the responsibility for facilitating and promoting scientific work. While the law and our social and cultural institutions sustain and protect our values, they can also be encouraged to advance them. This support of science by law should be encouraged especially in fields such as air pollution control, where the law must be based upon scientific foundations.

-- Cond. from author's conclusions

694 Program for the Survey of Lead in Three Urban Communities. D. R. Diggs, et al. J. Air Poll. Control Assn. 13, 228-232 (May 1963).

A co-operative one-year program to survey lead in urban communities (Cincinnati, Los Angeles, and Philadelphia) was initiated in June 1961. This resulted from recommendations of the Advisory Committee on Tetraethyl Lead to the Surgeon General of the Public Health Service. In part, these recommendations were that a program of parallel engineering and medical studies be conducted to provide more definitive data on the levels and trends of atmospheric lead in selected urban areas and on the lead levels in the blood and urine of selected population groups. The basic objectives of this program are to: (1) Indicate whether the general population or segments of population are exposed to a detectable hazard from atmospheric lead. (2) Establish a baseline for future studies to determine whether changes occur in atmospheric lead content and in blood and urine lead levels. (3) Ascertain if detectable differences exist in blood and urine lead levels in groups of individuals exposed to different amounts of lead in a community atmosphere. This paper describes the details of this program, and will serve as a background for subsequent publications in which the aerometric and medical data will be reported and interpreted.

-- Authors' introduction

ACCIDENTS AND PREVENTION

695 Safety Considerations for Truck Shipments of Radioactive Materials. F. F. Leimkuhler. Traffic Safety 62, 22-26 (June 1963).

The increasing use of nuclear energy requires large amounts of radioactive materials to be shipped by conventional modes of transportation. A variety of precautions are available to keep the cargo safe and to protect human beings against exposure and contamination. Such safeguards can be expensive, however. This paper studies their economic justification and optimal

use, with specific reference to shipments by tractor-semitrailer of highly radioactive reactor fuels and isotope solutions. It is concerned primarily with determining the best (i.e. safest, cheapest, fastest) methods of trucking such materials. The author has reviewed in detail the accident experience of large U.S. motor carriers and data from many other sources in order to establish measures of accident risk. Variations in both accident frequency and accident severity are related to the operating characteristics of the trucks involved and the conditions which prevail on various types of highways. This information is used to estimate the potential total cost of truck accidents with radioactive cargoes, and to compare the value of risk-reduction with its cost in such areas as route selection, speed control, and the scheduling of shipments. Of particular interest to the highway researcher is the study of tractor-semitrailer accidents in terms of such force components as mass speed and direction-of-impact. The distributions of these factors in accidents are estimated and related to truck damage, which was found to be a reliable measure of the severity of highway accidents and a good indicator of total accident loss. This analysis forms the physical basis for applying economic factors which together determine optimal control possibilities. -- Author's abst.

696 Fatal Aircraft Accidents and Disease of Aircrew. P. J. Stevens. Aerospace Med. 34, 450-455 (May 1963).

A number of conclusions arise from the analysis of the present series of cases and from the author's experience with pilot error or possible pilot error accidents, examples of which have been quoted. There is no evidence that pre-existing disease in aircrew constitutes a major problem and the abnormal conditions found are in no greater proportion than would be expected in a routine survey of non-aircrew traumatic deaths of a similar age group. With the possible exception of coronary artery disease and fatty liver, no other conditions occur sufficiently frequently to merit consideration as being occupational in origin. Some conditions, uncommon though they may be in aircrew, are either potentially suddenly incapacitating, or may materially affect the efficiency of a man's performance of his tasks; these conditions can and do cause accidents. In many instances the discovery of significant disease or disability will be made from the pilot's medical and personal history. -- Author's conclusions

MISCELLANEOUS

697 Air Compression in Waste Treatment. W. G. Brown. Public Works 94, 96-99, 196 (Feb. 1963).

An analysis is made of the varying uses and characteristics of compressed air in the more common processes of waste treatment. The area treated includes that supplied by low pressure compressors or "blowers," as well as by more modern high pressure applications. Types of compressors are discussed and their accessories are listed. The effect of compressed air on each of the many treatment processes is analyzed and parameters given. -- Public Health Eng. Absts.

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