Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL

OCTOBER, 1966
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INDUSTRIAL HYGIENE FOUNDATION
MELLON INSTITUTE
4400 FIFTH AVENUE -:- PITTSBURGH, PA. 15213

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INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

MELLON INSTITUTE, 4400 FIFTH AVENUE

PITTSBURGH, PA. 15213

October, 1966

TO THE MEMBERS OF IHF:

THIRD QUARTERLY REPORT

Annual Meeting preparations superimposed on existing prodigious workloads are admittedly "burdensome" and only effective programming of the Foundation's capable and loyal Office Manager, Mrs. Ellen C. Diamond (whose experience in holding Foundation meetings dates from 1935), along with the assistance of the staff, keeps them from becoming overwhelming. This year's problems were compounded somewhat as a result of our holding the Annual Meeting away from Mellon Institute for the first time—and in a newly completed facility, Chatham Center in downtown Pittsburgh. Had it not been for a number of stablizing factors, including those described herein, we would have had greater reason to be concerned as to the success of our 31st Annual Meeting.

The continued value of IHF to its members is attested by their continued membership in the face of the 1966 dues increase, the first in 30 years. As a result of this increase, we have returned the budget to balance at the present level of expenditure and can expect more serious consideration on the part of granting agencies in providing matching funds to help stimulate further growth of the Foundation in the national interest as well as that of the members of the Foundation.

The Board of Trustees under the effective leadership of Mr. E.K. Davison, Chairman, has helped the Foundation weather a critical period and I am sure that the membership shares the gratitude of the Board that the Nominating Committee reports Mr. Davison's willingness to serve again as Chairman in 1967.

The Annual Meeting Program, developed with the helpful assistance of the Foundation's Standing Committees, is the most challenging imaginable, covering present environmental and occupational health problems and predicting those a decade or more in the future in order to explore opportunities for voluntary and collective action of industry within IHF to further genuine health conservation of workers and their dependents as well—in essence, the public—and in so doing to help provide much needed leadership of a national environmental and occupational health program costing many millions of dollars a year in control of costs to industry already totaling many billions a year and steadily increasing.

Although our expenditures are now balanced by income from dues and projects, we will be unable to undertake additional programs in accomplishing the Foundation's mission without additional support. Attracting and holding a much needed staff will require, at the minimum, doubling the present dues

income of about $90,000 per year. I shall hope to obtain matching funds from industry and non-governmental granting agencies in 1967-1970 to allow program development (Central Data Repository, Industrial Hygiene Digest Project, and increased laboratory research on fibrous dusts, fibrous glass, and aluminum as well as the emphysema study already in progress), in expectation that over that period increased dues income will materialize from increased membership. The 31st Annual Meeting and follow-up activities should help attract a much larger sample of industry into membership, and in this respect, members can be of great assistance to the Board of Trustees and the Membership Committee (Chaired by Mr. Douglas Soutar, American Smelting & Refining Company). Attached is a copy of a new Membership Information Brochure which contains a list of members.

We are pleased to announce the addition of four new members during the past quarter: Sinclair-Koppers Company, Hanford Occupational Health Foundation, Laundry and Cleaners Allied Trade Association and Asbestos Textile Institute.

Dr. W. Donald Ross, Professor of Psychiatry and Assistant Professor of Industrial Medicine at the University of Cincinnati College of Medicine and Dr. Jack A. Wolford, Chief, Social Psychiatry, Western Psychiatric Institute and Clinic and Associate Professor of Psychiatry at the University of Pittsburgh School of Medicine were appointed Advisory Fellows of Mellon Institute to assist IHF in its new program of mental health conservation.

In recognition of his outstanding contributions to the field of pulmonary pathology research, Dr. Paul Gross, Director of the Foundation's Research Laboratory, was invited to moderate the opening session of the Gordon Conference on Toxicology, August 22, and on August 23, to read a paper on the subject of "The Mechanisms of Some Structural Alterations of the Lung Caused by Environmental Stresses" at the Bretton Woods Conference, sponsored by the National Academy of Sciences, National Research Council, Committee on Environmental Physiology. He also moderated a session on "Organization of Occupational Medicine" at the XV International Congress on Occupational Health in Vienna on September 20, and participated in an international Round Table Discussion of the House of Scientists in Smolenice (Bratislava, Czechoslovakia) September 25-26.

Professor T. F. Hatch also attended the Vienna Conference, and while in Europe, evaluated industry-wide research projects of interest to IHF.

Publications which appeared in scientific journals during the past three months are:

"On the Theory of Silicosis," Heinrich Brieger and Paul Gross
Arch. Environmental Health 13, 38-43 (July 1966).

"Alveolar Clearance: Its Relation to Lesions of the Respiratory Bronchiole," P. Gross, E.A. Pfitzer, and T.F. Hatch.
Amer. Rev. Resp. Dis. 94:1, 10-19 (July 1966).

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Robert T.P. deTreville, M.D.
Managing Director

INDUSTRIAL HYGIENE FEATURES

Mortality in California veterinarians is discussed in Abst. No. 935.

For the "Skid Row" syndrome see Abst. No. 939.

Has diabetes a unitary etiology? Consult Abst. No. 944.

Diabetes mellitus in patients with gout is investigated in Abst. No. 945.

Abst. No. 952 describes how ringworm is contracted from cattle in western New York.

A review of silicones in head and neck surgery is given in Abst. No. 958.

A study of familial emphysema is given in Abst. No. 959.

Abst. No. 967 presents data on menthol urticaria.

The treatment of thermal burns by silver nitrate is discussed in Abst. No. 970.

Is there a malignant freckle? See Abst. No. 972.

Abst. No. 975 surveys the cerebro-ocular effects of carbon dioxide poisoning.

Abst. No. 983 reports on a case of copper intoxication.

Abst. No. 984 is concerned with nephropathy in chronic lead poisoning.

An epidemic of nosebleeds in apple packers is described in Abst. No. 998.

Details on the biological action of glass dust are presented in Abst. No. 1007.

Abst. No. 1022 discusses traffic accidents as a public health program.

FOUNDATION FACTS

NEW MEMBER: The Foundation is pleased to announce the membership of the Asbestos Textile Institute.

THE FOUNDATION'S 31st ANNUAL MEETING, the first convention to be held at Chatham Center, Pittsburgh, was attended by over 300 persons interested in industrial hygiene management. The facilities at the new convention center ideally suited the Foundation's requirements and the Board of Trustees has suggested that reservations be made there for future IHF Annual Meetings. In a special Meeting of Trustees on October 17 and at the Membership Meeting on October 18, the Foundation's progress was reviewed by Mr. E.K. Davison, Chairman of the Board, Dr. R.T.P. deTreville, Managing Director and the Chairmen of the Foundation's Standing Committees. Plans and needs extending through 1970 were also discussed. Immediately following the Membership Meeting, the Trustees met, in accordance with the Foundation's By-Laws, and elected the following officers for 1967: Mr. E.K. Davison, Chairman; Dr. Anna M. Baetjer and Mr. Andrew Kalmykow, Vice Chairmen; Dr. H.H. Schrenk, Secretary; Mr. Theodore F. Hatch, Treasurer; and Dr. R.T.P. deTreville, Managing Director.

COMPLETE TRANSACTIONS of the Foundation's Annual Meeting will be distributed in January 1967.

STAFF ACTIVITIES: Drs. deTreville and Gross met with representatives of the Foundation's membership to finalize details of long-term research on fibrous dusts.

MEDICAL SERIES BULLETIN No. 11 on Asbestos Research Planning now in preparation, will accompany the November Digest.

ENCLOSURES: The Foundation is pleased to enclose with this Digest a copy of the new membership information brochure which includes a list of Board of Trustees, committee members, and an up-to-date listing of member companies. The Third Quarterly Report is also attached.

THE 32nd ANNUAL MEETING will be held at Chatham Center, Pittsburgh, Pa., October 10-11, 1967. As Management and Technical Conference Programs are already in preparation, members' suggestions should be sent to the Managing Director without delay.

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Industrial Hygiene Foundation
4400 Fifth Avenue
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INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

920 National Health Survey Findings.

The publication of "National Health Survey Findings of Occupational Health Interest," was announced recently by the Public Health Service, U.S. Department of Health, Education, and Welfare. This publication is a statistical compilation of National Health Survey reports on the extent of disabling illness in the working population. Designed for persons seeking to promote occupational health services in accordance with modern concepts, this publication provides data that will enable them to illustrate the full impact of illness and injury on the working population. Single copies of "National Health Survey Findings of Occupational Health Interest," Public Health Service Publication 1418, may be obtained from the Public Health Service, Department of Health, Education, and Welfare, Washington, D.C. 20201.

921 Americans "Nutritionally Below Average."

A substantial number of Americans are "nutritionally below average," according to studies by the National Vitamin Foundation. The foundation says its study turns up evidence for inadequate nutrition in teenagers, elderly people, hospital patients, pregnant women, college students, and elementary school children. According to a study of 2,045 teenagers in Iowa, a "substantial number" of the group have high cholesterol levels in their blood, a condition which may increase chances for heart disease in later life. Other studies throughout the country indicate deficiencies of vitamins C, B_1, B_2, and B_6. The foundation's conclusions disagree with a statement recently issued by the Food and Drug Administration, which, among other things, holds that "vitamins and minerals are supplied in abundant amounts by the foods we eat."

-- Chem. Eng. News 44, 43 (Aug. 15, 1966)

922 Courses in Accident Prevention.

New York University's Center for Safety Education will offer courses this fall designed for accident prevention administrators. The program will cover most aspects of industrial safety, ranging from marine to motor vehicle hazard reduction. A course in "Fire Prevention and Protection Inspection" will deal with the chemistry and physics of fire, covering such topics as flammables, water supplies and other preventive features. Another course, "Marine Accident Prevention," will be offered in cooperation with the New York Shipping Association. "Accident Prevention—Its Background, Objectives, and Relationships," will provide a basic understanding of the historical development of industrial accident prevention and its relationship to modern industry. The control of industrial disease will be discussed in "Industrial Hygiene and Occupational Diseases." Further information can be obtained from Mr. Henry H. Brochhagen, Coordinator, Certificate Program, Center for Safety Education, New York University, Washington Square, New York, N.Y. 10003.

-- J. Am. Soc. Safety Eng. 11, 24 (Sept. 1966)

923 Halothane.

The anesthetic halothane got a clean bill of health after a three-year study by the National Academy of Sciences—National Research Council (J. Am. Med. Assn. 197, 775 (1966)). The primary objective of the study was to compare halothane (1, 1, 1-trifluoro-2, 2-bromochloroethane) with other general anesthetics as to the incidence of fatal liver necrosis in surgical patients within six weeks of anesthesia. Retrospective analysis of more than 856,000 patients in 34 institutions during 1959-1962 shows that fatal massive liver necrosis occurred but 82 times, less than once in 10,000 operations, and could largely be attributed to well-recognized factors such as shock, overwhelming infection, congestive heart failure, or pre-existing liver disease. Halothane is as safe or safer than other anesthetic agents, the study says.

-- Chem. Eng. News 44, 45 (Sept. 12, 1966)

COMING EVENTS

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Nov. 1- 3	20th Tobacco Chemists Research Conference, Winston-Salem, North Carolina.
Nov. 1- 5	American Society of Tropical Medicine & Hygiene, San Juan, P.R.
Nov. 2- 3	American College of Preventive Medicine, San Francisco, California.
Nov. 3- 5	Gerontological Society, New York, N.Y.
Nov. 7- 9	Association of Military Surgeons of the U.S., Washington, D.C.
Nov. 8-10	American Federation of Information Processing Societies, Computer Conference, San Francisco, California
Nov. 10-11	American Association for Automotive Medicine, Alamagordo, New Mexico.
Nov. 11-12	Society of Clinical Surgery, Kansas City, Mo.
Nov. 11-13	Association of Clinical Scientists, Annual Meeting, Washington, D.C.
Nov. 14	Academy of Pharmaceutical Sciences, Eastern Regional Meeting, Philadelphia, Pa.
Nov. 14-16	American Petroleum Institute, 46th Annual Meeting, New York, N.Y.
Nov. 14-17	Institute on Data-Communications and Display of Management Information, Washington, D.C.
Nov. 15-18	12th Annual Conference on Magnetism and Magnetic Materials, Washington, D.C.
Nov. 15-20	American Medical Women's Association, Washington, D.C.
Nov. 22	Manufacturing Chemists' Association, Midyear Meeting, New York, N.Y.
Nov. 26-27	American College of Chest Physicians (Interim meeting) Las Vegas, Nevada.
Nov. 27	National Conference on the Medical Aspects of Sports, Las Vegas, Nevada.
Nov. 27-Dec. 2	Radiological Society of North America, Chicago, Illinois.
Nov. 28	Food Law Institute and the Food and Drug Administration, Washington, D.C.
Nov. 29-Dec. 1	American Academy for Cerebral Palsy, Biloxi-Gulfport, Miss.

LEGAL DEVELOPMENTS

925 Proposed Bill Will Establish Federal Noise Control Office.

A bill (H.R. 14602) to launch "the first comprehensive federal, state and local assault on noise" is being sponsored by Rep. Theodore R. Kupferman (R-N.Y.) The bill would establish a Federal Office of Noise Control under the jurisdiction of the U.S. Surgeon General to administer a Federal grants-in-aid program to assist state and local governments for research relating to the control, prevention and abatement of excessive noises. Among the "noise problems" which would be dealt with would include aircraft, motor vehicles, factories, air conditioners, fans, processing machinery, etc. -- Air Eng. 8, 6 (Sept. 1966)

BOOKS, PAMPHLETS AND NOTICES

926 Mental Health With Limited Resources. Yankee Ingenuity in Low-Cost Programs. H.R. Huessy, Editor. AVAILABLE FROM: Grune & Stratton, Inc., 381 Park Avenue South, New York, N.Y. 10016. 124 pp. (1966). PRICE: Not Given.

"This is a welcome and timely book.... Robinson, et al., (Robinson, R., De Marche, D.F., and Wagle, M.K.: Community Resources in Mental Health. New York: Basic Books, 1960) in their Joint Commission study, demonstrated the paucity of mental health resources in large sections of this country, particularly in the rural areas.... Specialized professionalism has made significant contributions over the past 50 years but lately it has sometimes replaced confrontation of the problems of the mentally disordered by preoccupation with the trappings of guild and hierarchy. This book offers one possible alternative in pointing to another approach not only for community leaders and workers but also for us professionals."

-- Cond. from Foreword by Gerald Caplan, M.D., D.P.M.

... "Community psychiatry has suddenly become the key with which to solve all our problems. It is in danger of becoming a program unto itself and various chapters of this book concern themselves with attempts to prevent this and to assure the integration of community psychiatry with other programs, agencies, and community caretakers.... Many of the projects described are built on the assumption that there is a reservoir of strengths and capacities for growth in most individuals, on attempts to use professional resources more efficiently and on increasing the involvement of existing resources within the community...."

-- Cond. from Introduction by Hans R. Huessy, M.D.

"In psychiatry, rehabilitation has come to mean all things to all people ... the time has arrived when we are developing basic themes for our work which will act as unifying and stabilizing factors in its continuation.... During the past 11 years, Vermont's State Hospital and Vocational Rehabilitation Division have developed a very active rehabilitation and education program aimed primarily at chronic schizophrenic patients ... over 500 severely disabled chronic patients were rehabilitated through this effort ... intensive follow-up of the first 269 patients referred shows that 70% (189) are now "out of the hospital" and of these detailed information on employment status is available. Approximately 63% have been continuously employed for an average of 34 months since their release. Their average weekly income is $46. If the 189 patients "out" were still "in", they would be costing the state $8,335 per week as a group. Instead they are earning $5,474 per week and paying taxes, saving the state at least one-fourth million dollars annually....
-- Cond. from Chapter by George W. Brooks, M.D.

927 Your Heart Has Nine Lives. A. Blakeslee and J. Stamler. Special Edition published by Pocket Books, Inc., in association with Corn Products Co. through publisher's Special Projects Office. AVAILABLE FROM: The Benjamin Company, Inc., 485 Madison Avenue, New York, N.Y. 10022. 277 pp. (1966). PRICE: Not Given.

This book discusses the nine chief conspirators in coronary heart disease: high blood pressure; high levels of cholesterol, a particularly dangerous fatty material, in the bloodstream: overweight; excessive eating, especially of certain types of fats and cholesterol; too little exercise and physical activity; diabetes; excessive cigarette smoking; tension and stresses; and heredity. If you are beset by any one of them, your risk of a premature heart attack is boosted two to six times above the risk of the person free of such a burden. With a combination of factors, your risk is far higher. A man's chances of having a heart attack before age 65 are about 1 in 20 to 1 in 50 if he has normal weight, normal blood pressure, average or low levels of blood cholesterol, no diabetes, is not a heavy cigarette smoker, is moderately active, has a normal electrocardiogram, and has no damage to his kidneys or thyroid gland. He is a good risk man. His chances rise to 1 in 2—or 50%—if he is being shadowed by two or three of the syndicate members, such as high blood cholesterol, high blood pressure, or obesity. He is a poor risk man. These odds are not drawn from a hat. They are based upon what actually happened to apparently healthy middle-aged men who lived with one or more of these risk factors. The book explains how simple changes in our way of living may decrease the risks of heart attack. "Your Heart Has Nine Lives" is now available in a paperback edition at most book stores.

928 Selected Areas of Knowledge or Skill Basic to Effective Practice of Occupational Health Nursing, I-25. American Nurses' Association, Occupational Health Nurses Section. AVAILABLE: free in limited quantities from American Nurses' Assn., Inc., 10 Columbus Circle, New York, N.Y. 10019. 22 pp. (mimeographed) (March, 1966).

When occupational health nursing services were introduced in this country at the turn of the century, they were limited almost entirely to visiting sick employees at home and giving first aid to the injuries employees sustained at work. The years since have seen occupational health service expand in scope and application until today it is a broad-based program in manufacturing plants, business offices, airports, banks and other industrial settings in both urban and rural communities. There has been a dramatic change, too, in the health needs and expectations of employees and this also has altered the character of occupational health services as well as the knowledge and skills required by the nurse who works in industry. Contributing to these changes have been numerous social, economic, educational and scientific factors, notably the expansion of workmen's compensation coverage; war production and its concomitant problems of personnel shortages and maintenance of employee health; governmental programs requiring increases in manufacturing and service occupations; and government leadership in the promotion of health services for its own and nongovernmental employees. Essential to the provision of the health care the employee of today expects and needs is an occupational health nurse who has specialized knowledge of the nursing situations unique to industry and the ability to apply this knowledge on the job. Identification of the specialized body of knowledge upon which the practice of occupational health nursing depends is the responsibility of those engaged in this area of practice. Recognizing this, the Executive Committee of the American Nurses' Association Occupational Health Nurses Section, in December 1963, appointed a Special Committee to identify Occupational Health Nursing, and to study and report on the knowledge and skills necessary to its practice with rationale for each area of knowledge and skill. Analysis of the practice of occupational health nursing by the committee revealed that: (1) the knowledge basic to this field shares the basic or generic core of all nursing knowledge; and, (2) there are several distinctive features which differ in kind, and sometimes in degree, from those of other fields of nursing practice; therefore, the occupational health nurse needs a different type or a greater depth, of knowledge and skill in additional areas.

The committee report identifies many of these areas. In the interest of achieving better nursing care for all of the public, the federal government has recently appropriated relatively large sums of money for the education of nurses. Effective utilization of these funds in occupational health nursing can best be achieved through a sound and uniform approach to the education of nurses for this clinical specialty, and this statement of the knowledge and skills necessary to the practice of occupational health nursing is offered as one means of promoting such a unified approach. The report is organized under the following headings: 1. Distinctive Characteristics of Occupational Health Nursing: (a) The Physical Setting; (b) The Clientele; (c) Nurse-employee Contacts; (d) Privileged Communications; (e) The Nurse's Functions; (f) Legal Standards; (g) Diagnostic Decisions; (h) Malpractice Cases Cited; (i) Nurse-Management Relationships; and (j) Need to Associate with Other Nurses. 2. Education for Practice: (a) Knowledge; (b) Skills; and (c) Rationale. NOTE: Practice in a one-nurse unit was used as the framework for this study because it is the most common type of employment position.

REFERENCES

American Nurses' Association. Functions, Standards & Qualifications for Occupational Health Nurses. (Pamphlet) The Association, New York, 1960, pp. 5-12.

Ibid., p. 4.

The American Medical Association. The Legal Scope of Industrial Nursing Practice. (Pamphlet) The Association, Chicago, 1959, p. 3.

Hornung, Gertrude. "The Nursing Diagnosis - an Exercise in Judgment." American Journal of Nursing. January 1956, 56:29-30.

The American Nurses' Association. Educational Preparation for Nurse Practitioners and Assistants to Nurses. (Pamphlet) The Association, New York, 1965, p. 14.

-- Cond. from text

929 Lightning Hazards. National Fire Protection Association. Free sample copy and price information AVAILABLE FROM: National Fire Protection Association, Public Relations Department, 60 Batterymarch Street, Boston, Mass. 02110. 4pp. (1966).

Essential information on ways to safeguard people and property from lightning's hazards is contained in an illustrated folder "What About Lightning Protection?" recently published by the National Fire Protection Association. The four-page folder emphasizes the need to equip buildings with lightning protection systems which bear the Underwriters' Laboratories "Master Label" and which are properly installed and maintained. The place of lightning rods, down conductors and grounds in a lightning protection system is explained graphically and in easy-to-understand terms. Information in the folder is based on NFPA Standard No. 78, entitled "Lightning Protection Code." The new NFPA folder also includes rules for self-protection during electrical storms.

930 Static Electricity. NFPA No. 77. National Fire Protection Association. AVAILABLE FROM: National Fire Protection Association, 60 Batterymarch Street, Boston, Mass. 02110. 68 pp. (1966). PRICE: $1.00.

A revision of the informative publication on control of static electricity has recently been issued by the National Fire Protection Association. The 1966 edition of this technical standard, "Recommended Practice on Static Electricity" (NFPA No. 77), was adopted at this year's annual meeting of the NFPA. It succeeds NFPA No. 77M, "Manual on Static Electricity." NFPA No. 77, the principal work in the field, covers the theories of generation and dissipation of static electricity as well as the application of these theories to the handling and use of flammable liquids, gases, dusts and fibers. Certain static-producing industrial and commercial processes are mentioned along with a discussion of the various types of static detectors and static-dissipating techniques. Several sections on aircraft have been added; other sections of the publication have been updated and clarified. Widely referred to as a guide to good practice, this material has been developed over the years by the NFPA Committee on Static Electricity.

INDUSTRIAL MEDICAL PRACTICE

931 Prospects of Ambulatory Medicine in the Teaching Hospital. J.E.C. Walker. Ann. Internal Med. 64, 1315-1324 (June, 1966).

Present trends indicate that the urban teaching hospital is becoming increasingly the focus of health care in its community. With these trends goes the hospital responsibility of participating in and providing leadership to the planning of an orderly array of care services that will meet the needs of sound and economic continuing patient care. Ambulatory services, which represent an interface between the hospital and its community, occupy a strategic position to provide this leadership. As part of its responsibility to demonstrate patterns of care for the future and to

involve the student in all facets of patient care, the university hospital should try to define a segment of the community to which it can render total care services in a continuum. This segment should be of a size that will not overtax facilities and of a composition that represents an authentic cross section of medical care needs. The larger service responsibility of the university hospital must continue to be met through providing a consultation service but should be extended to include relationships with community facilities that will enable an exchange of educational experiences. Ambulatory services should be organized around the intensity of the care need and around a definition of patient care responsibility. This requires a staging and integration of emergency and clinic services, and dividing clinic services into two parts: one that receives the patient having no community physician and provides total care extending from the hospital through the continuum of extramural services into the community, and the other that receives patients referred from the community or responsible clinic physician and provides consultation and specialty care in depth. The ingredients of good care and good educational programs in ambulatory medicine are essentially similar and should be inseparable. Both require a continuing care responsibility that implies a physician responsible for coordinating care and that requires an extension of ambulatory services to extramural programs for comprehensive care. Educational programs that purport to teach patient care must be designed around these needs and must allow the student to participate in the care responsibility following the patient throughout his course from hospital to community. Disciplined research and critical analysis in programs of medical care and education such as these is essential if future direction is to be based on objective data. The need for the good men and minds in medicine to turn their efforts to these problems, and to design instruments to investigate them, is now critical. There are 21 references.-- Author's summary

932 The Specialist and the Health of the University. W.G. Shepard. Mayo Clinic Proc. 41, 505-514 (Aug. 1966).

Presently the communication between those in the social and natural sciences is primitive. It is improving only as, on the one hand, the tools of the physical scientist become useful to the social scientist and as, on the other hand, the physical scientist or engineer seeks the counsel of the social scientist in improving the man-machine interaction. A similar situation has pertained between the physical and the biological scientist but is recently improving as these two fields meet at the molecular level. Within the physical sciences and technology one can readily find examples of provincialism and difficulty of communication in spite of the facts of a common mathematical language and a common dependence on a basic core of fundamental laws. Electrical engineers and chemical engineers face similar problems in the control of chemical plants and in electronic systems. The problems can be treated by the solution of essentially similar equations but neither has been capable of formulating the problem of the other. It has been only in the last one or two centuries that universities have begun to emerge as participating instruments in the development of society, in all its aspects, and to be recognized by society as effective means to that end. Nowhere has this been more true than in the United States where the concept of the land-grant university was developed. These land-grant institutions, established more than a century ago, were given the specific mission of aiding the development of the economy of a young nation. That they have been a vital force in our economy, no one can dispute. And this vigorous interaction provided a vitality to the institutions themselves and a public interest in their support, which has led to their maturation into institutions which the rest of the world has taken for models. Paradoxically, our national policies in the past 20 years, while apparently supportive of our earlier land-grant traditions, have moved to reduce the external influences so important in the land-grant philosophy. After World War II, when extrinsic pressures were removed, not only was there a tremendous expansion in the resources made available for pure science, but a development of a conviction that engineering education and research should be like that characterizing pure science. In some respects a reform in this direction was necessary if engineers were to be prepared for a technology of an order of magnitude more complex than that which prevailed in the prewar world. But the pendulum swung far over so that engineering education and research increasingly focused on analysis, that is, became oriented toward a specific disciplinary specialty and away from an application orientation or mission orientation. Academic engineering research thus became increasingly incongruent with the practice of engineering. The teaching hospital brings to bear real extrinsic forces on medical education and research. An awareness that knowledge has validity not only for its own sake, but also for service, will ensure the health of our disciplines and thus of the universities as a whole.

933 The C.O. Sappington Memorial Lecture 1966. Patterns and Perspectives. L.J. Warshaw. J. Occ. Med. 8, 353-357 (July, 1966).

This is a critical time for occupational medicine. Great changes are taking place in industry and in the working populations to whose health we are dedicated. There is increasing awareness of the effects of our industrial civilization on the environment and a growing determination to

regulate and to modify them. Simultaneously, there is in progress a gradual but, I believe, an inexorable reorganization of what is perceived as the health needs of this nation and of the mechanisms whereby those needs will be satisfied. Our goal, I contend, is nothing less than the total health maintenance of the workers under our surveillance. Since the health of the worker cannot really be separated from the health of his family nor from that of the community in which he lives, this responsibility is indeed a broad one. Obviously, it is one that we could not possibly assume alone; rather, it is one that we must share with all other segments of the health professions, with community organizations, social agencies, and even government bureaus. The periodic examination is presently oriented almost exclusively to the detection of existing disease. Do we yet have really convincing evidence that even when this is successful it results in a measurable reduction in mortality and morbidity? Recent studies of isoimmunity phenomena suggest that it may be possible to trace the development of susceptibility to specific organ injury. Other studies involving repeating batteries of blood tests in healthy subjects indicate that each person presents a rather constant profile (different from that displayed by another normal individual), deviation from which may signal an onset of disease. The possibility that persons may have inherited susceptibilities of a rather specific nature, such as a particular proneness to permanent hearing loss following noise exposure or to the toxic effects of certain drugs and chemicals, is being investigated by geneticists. It seems quite probable that with additional research, we will soon be able to uncover other indices of potential disease so that corrective measures may be introduced even before the disease process is initiated. The industrial medical department is particularly suitable for such basic studies and also for the research needed to confirm both the validity of any disease predictors and the efficacy of appropriate preventive measures.

934 Pulmonary Atelectasis in Subjects Breathing Oxygen at Sea Level or at Simulated Altitude. T. Turaids, et al. J. Appl. Physiol. 21, 828-836 (May, 1966).

Seven subjects were exposed to atmospheres of 100% oxygen at 5 pounds per square inch (psi), 72 hours; 7.5 psi, 72 hours; or 14.7 psi (sea level), 24 hours. The symptoms of chest pain, decrease of vital capacity, and the platelike densities which occurred in two subjects indicated they had developed atelectasis sufficiently severe to require stopping the runs. The decrease of vital capacity in two other subjects and, perhaps, a third indicated that these subjects also probably developed atelectasis. These pulmonary effects occurred whether the subjects were at sea level or at a third of an atmosphere (5 psi). Vital capacity changes in one subject were far less after adding 30% nitrogen or 5% nitrogen to the gas mixture, ruling out the possibility that the atelectasis which occurred has been caused entirely by external compression of the lung, or by chemical action of oxygen on the alveolar cells, or on the surface-active material in the alveoli.
-- J. Am. Med. Assn. References & Reviews

935 Mortality in California Veterinarians. Elfriede Fasal, E.W. Jackson, and M.R. Klauber. J. Chronic Diseases 19, 293-306 (March, 1966).

The main findings were: (1) Total mortality was significantly decreased in the veterinarians. (2) Deaths from all cancer occurred in the study group at a rate comparable to that in the standard population. Among cancers of specific sites, only malignant melanoma of the skin, with three observed deaths, showed a statistically significant increase in mortality. (3) Mortality from nonsyphilitic aortic aneurysm was significantly increased in the study population. It is suggested that late sequelae of brucellosis, an "occupational" disease of veterinarians, were responsible for this increase. There are 41 references. -- Public Health Eng. Absts.

936 Health of Enrollees in Neighborhood Youth Corps. V. Eisner, C.B. Goodlett, and M.B. Driver. Pediatrics 38, 40-43 (July, 1966).

The medical examination records of the first 165 enrollees in one urban neighborhood youth corps were reviewed. The majority of the enrollees was in need of medical or dental services or both. Problems in the identification and treatment of medical conditions in this group are discussed. The importance of advanced planning of health care for this group is emphasized, and suggestions are made for such a health plan. -- J. Am. Med. Assn. References & Reviews

937 Community Psychiatry in the Canadian Air Division, Europe. A.S. MacVicar. Can. Med. Assn. J. 95, 307-312 (Aug. 13, 1966).

In the Canadian Air Division, a community psychiatric project used three methods to establish closer integration of the community's "caretakers" and was partially successful in establishing meaningful teamwork in each of its wings. The three methods were: First, "Human Problem Conferences" were held in which discussion was informal and very different from the usual form of military conference. Second, the psychiatrist increased his contact with all those identified

as caretakers and made himself available for personal consultation. Third, the psychiatrist offered continuing formal education in the form of seminars for medical officers but later relied on informal individual contacts with referring medical officers as the best means of increasing the medical officers' involvement in human problems. Of the three, the first seemed to be the most important but would have been ineffective without the other two methods. As a result of this increased communication, preventive measures were given added emphasis and, in general, human problems were better handled, as evidenced by the reduction in the incidence and duration of psychiatric illness. There are six references. -- Author's summary

938 Electrocardiogram in Alcoholism and Accompanying Physical Disease. R.G. Priest, J.K. Binns, and A.H. Kitchin. Brit. Med. J. 1, 1453-1454 (June 11, 1966).

The extent of electrocardiographic changes and concomitant physical disease in alcoholics presenting as psychiatric problems were studied. In a series of 37 psychiatric inpatients with alcoholism, 20 had abnormal ECGs. The usual changes found were those specific for alcoholic cardiomyopathy (dimple and cloven T-waves); many reverted to normal during the hospital admission. An abnormal ECG was the most frequent physical abnormality found in these patients. The abnormal electrocardiograms were significantly associated with body weight occurring seldom in underweight patients (tau= -0.44, P= 0.02), and never in the authors' obese patients (tau= -0.46, P= 0.02). They showed a tendency to occur in the presence of abnormal cardiovascular signs. The liver was enlarged or tender in 15 of the 37 patients (but only in one were the flocculation tests unequivocally abnormal). An evaluation of the physical health of the patients in this series showed relevant symptoms, physical signs, or abnormalities of special investigations in 32 of the 37 patients. -- J. Am. Med. Assn. References & Reviews

939 "Skid Row" Syndrome: A Medical Profile of the Chronic Drunkenness Offender. J.S. Olin. Can. Med. Assn. J. 95, 205-214 (July 30, 1966).

From skid row, 227 chronic "drunks," inmates of the Toronto Jail, were studied to determine the physical features and illnesses of this group. Complete physical examinations, liver function tests, routine hematology, urinalysis, chest radiographs were carried out and previous hospital records were obtained for each man. The data were analyzed by IBM computer and reported in terms of body systems. Items that occurred in sufficient frequency were separated out and listed to compile a "skid row" syndrome. The men averaged 45 years of age, had been drinking heavily for 20 years and had four drunken convictions a year. Tuberculosis was found in 8.8%. Epilepsy was confirmed in 8%. Cirrhosis of the liver was definite in 3% of the group; 75% were under the Canadian average weight, and 25% had significant body deformities. It was estimated that, if necessary therapy was carried out, 90% of the men would be able to perform useful labor. There are 36 references. -- Author's abst.

940 The Accident Process. III. Disability: Acceptable and Unacceptable. A.H. Hirschfeld and R.C. Behan. J. Am. Med. Assn. 197, 85-89 (July 11, 1966).

Peptic ulcers and other suggestions of depression appear in histories of accident victims, indicating that disability exists before the mishap. After the accident has occurred, this disability is linked with an apparent physical defect, and it becomes acceptable to both patient and society. Breaking this linkage is an important factor in successful therapy. Of equal interest is the fact that prior depression has measurable physical components. Increases occur in adrenal and gastric secretions. Ketosteroid, metadrenalin, normetadrenal, thyroid, and estrogen titers change, some in blood, others in urine. Such physical variables of preaccident depression could be measured for prediction and possibly for preventive therapy. -- Authors' abst.

941 Surfer's Knots. Associated Bone Changes and Medical Problems. D.W. Gelfand. J. Am. Med. Assn. 197, 149-150 (July 11, 1966).

Surf riding is largely confined to the beaches of California and Hawaii, but is now gaining in popularity on the east coast as well. The physical hazards of this very exhilarating sport are those expected from the use of a heavy fiber glass surfboard in a pounding surf. These hazards include a large assortment of cuts and bruises, and an occasional fatality produced by a rapidly moving board striking the head. In addition, regular devotees of the sport acquire surfers' knots, soft-tissue swellings on the dorsum of the foot and just below the knee. Changes in the small bones of the feet are frequently found in association with surfers' knots. These bone changes consist of chipping and spurring of the dorsal surfaces of the tarsals and metatarsals. It was found that the surfers' knots are frequently symptomatic and occasionally require treatment. The problems encountered included pain and deformity of the foot, and erosion, hemorrhage, and infection of the surfers' knots.

942 Ultrastructural Alterations in Rat Lungs. H. E. Reidbord and W. E. Spitz. Arch. Pathol. 82, 80-84 (July, 1966).

The effect of acute hypoxia on the pulmonary capillaries has not been clearly defined. Although it has been stated that hypoxia will cause damage to the pulmonary endothelium and transudation of protein into the alveolar spaces, morphological support of this is lacking. In order to define more clearly the effect of severe oxygen deprivation on the lung, acute hypoxia was produced in the rat by asphyxiation in an airtight container. Immediately after death, samples of the lung were removed, suitably prepared, and examined with the electron microscope. The findings were similar to those previously described after less severe but more prolonged hypoxia. Changes observed in the capillaries were minimal. The structural integrity of the endothelium was preserved, and cell junctions appeared intact. Severe, acute hypoxia did not produce any significant alteration in the pulmonary fine structure. No direct evidence was found to indicate that capillary permeability had been altered; this possibility could not be excluded, however.

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

943 An Examination of Commercial Kits for the Determination of Glutamic Oxaloacetic Transaminase (GOT) and Glutamic Pyruvic Transaminase (GPT) in Serum. M. Hollands and J. E. Logan. Can. Med. Assn. J. 95, 303-306 (Aug. 13, 1966).

Four kits for the detection of serum transaminase based on the spectrophotometric method and 15 kits based on the colorimetric procedure were evaluated. Two kits contained faulty reagents in both the SGOT and SGPT packages. Four of the 15 kits gave results which differed significantly from those of the reference method. The precision of the various kit procedures was adequate in each case for the determinations of SGOT and SGPT. The need to evaluate the adequacy of each kit in a routine operation before relying upon the results obtained with it is stressed.

-- Authors' abst.

944 Has Diabetes a Unitary Etiology? H. Lestradet. Presse med. 74, 99 (1966). French.

The conclusions in this review of recent advances in diabetic research are that the separation of diabetes into fat and thin diabetes, which was quite common in the 19th and early 20th century and was never really entirely abandoned by French diabetes specialists, assumes once again some importance in the light of newer knowledge. Hyperglycemia, whether permanent or transitory is not always associated with a real or potential deficit of pancreatic secretion. It may be pancreatic in origin as in the juvenile type of diabetes, or cellular and vascular as in the adult type of diabetes, in diabetes of the obese and of the aged. Considering the various types of diabetes where the pancreas is of no importance and where blood insulin levels are more frequently elevated than diminished, it is certain that the clinical picture, prognosis, genetic background, prevention and therapy of these different types have often nothing in common with one another. The continued tradition of a unitary concept of the etiology of diabetes (that is to say, pancreatic) has led to a divergence of opinion between diabetes specialists treating adults and those treating children. This divergence will not be resolved until both realize that they are dealing with different diseases. -- Can. Med. Assn. J. Absts.

945 Diabetes Mellitus in Patients With Gout. F. W. Whitehouse and W. J. Cleary, Jr. J. Am. Med. Assn. 197, 73-76 (July 11, 1966).

About 10% of patients with gout will have diabetes mellitus. Of the authors' 89 patients with both diseases, 74 (83%) have insulin-independent diabetes and in two out of three gout developed first. Obesity is a frequent concomitant (65 patients, 73%), and perhaps represents the common etiologic basis for both metabolic abnormalities in this type of patient. The excessive use of food and drink probably heightens the chances of one or both disorders developing. Physicians should be aware of this concomitance and attempt the early detection of diabetes in appropriate cases of gout. Insulin-dependent diabetes was uncommon in the patients of the authors (15 patients, 17%). One need not expect the frequent development of gout in patients with diabetes. Only one in 100 of the authors' patients with diabetes has gout. -- Authors' abst.

946 Sacroiliac Lipomata: An Often Unrecognized Cause of Low Back Pain. M. L. Singewald. Bull. Johns Hopkins Hosp. 118, 492-498 (June, 1966).

In a series of 53 cases attention is called to some simple clinical observations that may help solve a complicated diagnostic problem. Lipomata in the sacroiliac region have been described as another cause of low back pain, easily diagnosed by injection at the base of the lipoma with a local anesthetic which also produces immediate relief of pain and immediate mobility of the back. Treatment can be by repeated injection of the fatty nodule or, if this does not suffice, the nodule can be removed surgically. The results of surgical removal are uniformly good.

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

947 Low Back Pain in Men Receiving Workmen's Compensation. A.W.M. White. Can. Med. Assn. J. 95, 50-56 (July 9, 1966).

In Ontario, only about 10% of compensation patients with low back pain are disabled more than six weeks and hence tend to have chronic complaints. Six hundred and twenty-three such patients were studied to determine the distribution of diagnoses and to test the effectiveness of various programs of conservative therapy. Two hundred and thirteen were assigned in rotation to one of four treatments. The results were inconclusive. In 70% of these, the pain was due to intervertebral disc degeneration with added trauma. Two hundred and sixteen patients were assigned randomly to a treatment involving mild exercise, or one with vigorous exercise. Neither was found to be superior. In 76% of these, the pain was due to disc degeneration with added trauma. Using 194 patients, the results of treatment in the Compensation Board Rehabilitation Centre were compared with those obtained by treatment at home. Satisfactory improvement was achieved in 15 of 95 treated at home, and in 42 of 99 at the Centre. The failure of treatment in six of each ten cases indicates that present-day methods of management of such patients are unsatisfactory.
-- Author's abst.

948 Cancer and Appendectomy. J.G.R. Howie and W.R. Timperley. Cancer 19, 1138-1142 (Aug. 1966).

A recent report based on necroscopy material suggested an association between appendectomy and subsequent development of colonic and other cancers. An attempt was made to repeat this observation using live patients; 588 cases of breast cancer, 500 of cervical cancer and 568 of colonic cancer received a circular letter asking about previous appendectomy, tonsillectomy and cholecystectomy. A similar letter was sent to 916 healthy patients. A high percentage of replies was obtained and it was clear that patients with cancer did not have a higher incidence of previous appendectomy than did the control patients. Criticism is made of the experimental design of the original study which might explain the results obtained. The authors conclude that there is no evidence to suggest that appendectomy may predispose to subsequent development of malignant disease.
-- Authors' abst.

949 Myocardial Infarction and Tobacco Smoking. O. Gsell. Munch. med. Wochschr. 108, 1210-1220 (June 3, 1966).

Correlations between myocardial infarction and tobacco smoking are pointed out on the basis of 141 cases (including two patients 24 and 25 years of age), seven gross statistical prospective, and 17 retrospective investigations in Europe and the United States. In agreement the findings showed an unequivocal correlation between smoking and myocardial infarction as well as mortality due to coronary diseases, which existed up to the 60-to 70-year age groups and was very distinct in younger age groups under 50. Myocardial infarction in young adults occurred mostly in heavy smokers, especially in men. Intensive cigarette smoking is not the only, but possibly the main factor in the occurrence of myocardial infarction during the early and middle years.
-- J. Am. Med. Assn. References & Reviews

950 Polonium-210 Activity in the Lungs of Cigarette Smokers. B. Rajewsky and W. Stahlhofen. Nature 209, 1312-1313 (March 26, 1966).

The authors, to further information on the natural radiation burden applied to the human body, investigated the Po-210 content in different parts of the lungs of cigarette smokers and non-smokers. The Po-210 activities found in different parts of the lung tissue are summarized for both groups, and the alpha dose rate in the bronchial epithelium is given. The authors indicate that carcinogenesis caused by inhalation of Po-210 with tobacco smoke is rather unlikely. Eight references are given.
-- Public Health Eng. Absts.

951 Mycotoxicoses: Toxic Fungi in Tobaccos. J. Forgacs and W.T. Carll. Science 152, 1634-1635 (June 17, 1966).

Cigarette, cigar, and pipe tobaccos contain Alternaria spores and dematiaceous mycelia, with cigarette tobaccos being more heavily laden. A smoke aerosol generated from hay on which the fungus had been cultured caused, among other pathologic changes, pulmonary emphysema in mice.
-- Authors' abst.

952 Ringworm Contracted From Cattle in Western New York State. F.R. Hall. Arch. Dermatol. 94, 35-37 (July, 1966).

Trichophyton verrucosum type of cattle ringworm was found in 121 patients over the past 17 years. Injury was a frequent precipitating factor. Possible immunity followed infection since only one recurrence was observed. Antibiotics failed even when lesions were pustular. Cultures were more successful with an agar containing cycloheximide and chloramphenicol than with regular Sabouraud's dextrose agar. There was questionable improvement from topical antifungal agents. Griseofulvin benefited the patient, especially if the medication was started early in the course of illness. -- J. Am. Med. Assn. References & Reviews

953 Wormy Eyes: A Veterinary Public Health Problem. A. Freeman. J. Am. Vet. Med. Assn. 148, 694-696 (March 15, 1966).

Visceral larva migrans occurs most often in children under four years old who ingest Toxocara canis ova, most often by sucking on toys or fingers contaminated with T. canis eggs, or by eating contaminated soil. Invasion of the eyes by this parasite has proved especially serious. T. canis is transmitted to man by dogs and cats. There are nine references.
-- Public Health Eng. Absts.

954 Human Rabies After Antiserum and Vaccine Postexposure Treatment. Case Report and Review. J.A. Anderson, F.T. Daly, Jr., and J.C. Kidd. Ann. Internal Med. 64, 1297-1302 (June, 1966).

An eight-year-old boy was bitten on the face by a rabid dog and treated within 19 hours with 2,000 International units of antirabies serum injected into the wound and buttocks, plus 14 doses of duck embryo antirabies vaccine with boosters at 10 to 20 days after the series. In spite of what was thought to be adequate therapy, the child died of rabies 90 days after exposure. The literature concerning serovaccine treatment was reviewed, and 18 known failures have been recorded; details are given here on 11 of these failures. The most likely explanations of treatment failure are that serum might not have been given soon enough to work locally and that serum antibody and vaccine antigen interference occurred. Since the incubation period of the virus is prolonged after serum had been administrated, it is probable that not enough vaccine was given. Serovaccine therapy in the past produced excellent results in large series of serious animal bites. It represents the best postexposure treatment for rabies available. However, there have been failures in this therapy, as this case report demonstrates. Perhaps by giving the serum as soon as possible after the bites (within a few hours) and giving a prolonged series of vaccine (that is, 21 days instead of 14 for serious bites of the face) plus boosters that are spaced out for a longer time interval after the basic series, one might improve these results.

955 Pulmonary Calcification in the Tumor-Like Form of Pulmonary Aspergillosis: Pulmonary Aspergilloma. J.C. Pimentel. Am. Rev. Resp. Dis. 94, 208-216 (Aug. 1966).

It would seem that there are reasons for admitting that the tumor-like form of pulmonary aspergillosis ("pulmonary aspergilloma") can be responsible for some of the calcifications that may appear in the lungs. This process has already been described in other fungal diseases especially in histoplasmosis. Nine cases are reported that illustrate the principle morphologic varieties of this process of calcification. An attempt is made to interpret the aspects described and to place them within the possible evolutional phases of pulmonary aspergillosis. There are 19 references. -- Author's summary

956 Bronchopulmonary Geotrichosis With Severe Asthma. J.D. Ross, K.D.G. Reid, and C.F. Speirs. Brit. Med. J. 1, 1400-1402 (June 4, 1966).

The fungus Geotrichum candidum occurs as a saprophyte in earth and decaying organic matter. When isolated from human sources it has generally been regarded as a commensal. In some cases the fungus has been considered the responsible pathogenic organism in a variety of conditions, the commonest being bronchopulmonary disease. The case reported here is of an adult woman with bronchial infection associated with severe asthma. Diagnosis in addition to the clinical picture was supported by: (1) isolation of fungus from sputum on 73 occasions as well as from the lining of the trachea and bronchi, (2) failure to demonstrate other pathogens, (3) thirty fold rise during course of the illness in patient's serum of agglutinating antibodies, (4) demonstration of cutaneous hypersensitivity to fungus extract. The patient required corticosteroid therapy; attempts to desensitize with a course of injections of increasing concentrations of the fungus extract gave only limited benefit. The fungus was sensitive to colistin; given intramuscularly and by inhalation, it diminished growth of fungus. -- J. Am. Med. Assn. References & Reviews

957 The 1964 Epidemic of Typhoid Fever in Atlanta. Clinical and Epidemiologic Observations. R.N. Collins, W.M. Marine, and A.J. Nahmias. J. Am. Med. Assn. 197, 179-184 (July 18, 19[illegible]).

Although the incidence of typhoid fever in the United States is steadily decreasing, urban outbreaks may still occur and present formidable problems in public health and clinical management. The clinical manifestations of typhoid, particularly in children, are protean and misdiagnosis is common. A recent outbreak of typhoid fever occurred in Atlanta. The cases were limited to three households in a single neighborhood. Fourteen children were stricken, with one death and one classical typhoid relapse. The diagnosis was readily confirmed by culture of blood and feces in each case. The presence of a missed case in an adult preparing food in one of the households was thought to have been the principal cause of the outbreak. -- Authors' abst.

958 Silicones in Head and Neck Surgery. E.G. Mullison. Arch. Otolaryngol. 84, 91-95 (July, 1966).

Medical uses of silicone fluids and rubbers are increasing because of their valuable properties. They evoke the most minimal reaction when implanted, offering resistance to chemical change, ease of shaping, autoclavability, and availability. Certain rubber stocks, the RTV's are initially fluid and will vulcanize into any desired shape within minutes at room temperature. Various uses of the silicones are discussed. Only the medical grades should be used for implant purposes. -- J. Am. Med. Assn. References & Reviews

959 Familial Emphysema. B.V. Hole and K. Wasserman. Ann. Internal Med. 63, 1009 (1965).

This paper presents a study of a familial diathesis for pulmonary disease with a family tree covering approximately 150 years. Six of eight siblings had clinical and laboratory findings indicating diffuse obstructive pulmonary emphysema. This finding was the more unusual because four of these were female. On the basis of the laboratory tests, the possibility of an atypical form of cystic fibrosis or of an autoimmune mechanism was not considered to be probable. It appeared that the disease followed the familial distribution of a dominant autosomal character with variability of phenotypic expression. The strong relation between smoking and pulmonary disease in this family suggested that the repeated trauma caused by the inhalation of tobacco smoke may be a factor that precipitates the expression of the genetic aberration. -- Can. Med. Assn. J. Absts.

960 Some Effects of Slow Respiration Rate in Chronic Emphysema and Bronchitis. F. Eldridge, et al. J. Appl. Physiol. 21, 877-882 (May, 1966).

The effects of slowing respiratory rate, using an auditory signal which simulates breath sounds as a stimulus, were studied in ten patients with severe chronic obstructive emphysema and bronchitis. The slowing of respiration led only to a minor increase in alveolar ventilation. The striking change was the decrease in minute volume and minute dead space ventilation while alveolar ventilation was maintained, indicating a distinct increase in effective ventilation per unit of total ventilation during respiratory slowing. In spite of the slower and deeper breathing, there was no significant improvement in the effective distribution of ventilation. While these patients could maintain their alveolar ventilation with a decreased ventilation during slow breathing, they appeared to prefer the more rapid respiratory rate.-- J. Am. Med. Assn. References & Reviews

961 Pulmonary Emphysema and Bronchitis: Correlation of Structure and Function. D.E. Jenkins, et al. Ann. Mtg. Absts. Intern. Acad. Pathol. Cleveland, March 5, 1966 Lab. Invest. 15, 1106-1107 (June, 1966).

Approximately 80 autopsy lungs have been studied by formalin steam inflation fixation after the method of Weibel and Vidone. Seven sections from the main, lobar and segmental bronchi of each lung were obtained, as well as sections from the mid-and peripheral areas of each lobe. The over-all extent of emphysema was quantitated by the Dunnill point counting method. The Reid Index appeared to be the same in each of the seven bronchial sections studied. The mean Reid Index for the 11 lungs without emphysema was 0.38, while for those lungs with emphysema it was 0.47 and this was significant at less than the 1% level. There was no significant difference in the Reid Index for the lungs with mild, moderate, or severe emphysema. There was no correlation between the extent of mucosal goblet cells in the bronchi of emphysematous lungs as compared with lungs without emphysema. When present, the goblet cells were seen most frequently in the bronchi but rarely within the terminal nonrespiratory and respiratory bronchioles. However, when an inflammatory reaction within the lamina propria was present, it involved both the bronchi and bronchioles with equal frequency. Correlations between emphysema and pulmonary function studies were best seen in the single breath carbon monoxide diffusion test. The residual volume to total lung capacity ratio did not correlate with the extent of emphysema, but correlated well with the forced expired volume in one second.

962 A Pathologic Study of Young Human Lungs for Emphysema. J. Kleinerman, et al. Ann. Mtg. Absts. Intern. Acad. Pathol. Cleveland, March 5, 1966. Lab. Invest. 15, 1140 (June, 1966).

The authors have undertaken a study of human lungs between the ages of one year and 45 years. The purpose is to observe if emphysema and bronchitis exist in this group, to study if lesions which might be interpreted as early as can be observed, and to see if stages of progression can be observed in material from younger persons. Lungs from infants, children, and young adults up to 43 years of age have been collected from three participating institutions. To date 40 lungs have been collected. These have been fixed in inflation by a formalin-vapor method. Sections have been prepared and studied grossly for site, size, and character of lesions. Measurements of air spaces were accomplished in 25 lungs. Histologic sections have been prepared and studied. Pleural pigmentation has been observed in 13 lungs ranging in age from 2 1/2 to 43 years. Pigmentation was not present in all lungs but appeared to increase with age. Pleural scars were observed in only a single case. Connective tissue septation was never complete and followed the distribution described by Ried and Rubino. Emphysema of an atypical form was observed in the lung of a 2 1/2 year-old child, who died of leukemia, and small lesions of the focal centrilobular "distensive" type were observed in only the 43-year-old lung. It appears that emphysema does not occur with the same frequency in the young as it does in the adult or aging population.

963 The Determination of the Degree of Emphysema on Autopsy Material. I. Prinsloo. Lab. Invest. 15, 947-961 (June, 1966).

A method has been devised for determining the respiratory wall-to-respiratory space ratio. The purpose of this investigation was to determine the degree of emphysema objectively. It has been shown that respiratory wall-to-respiratory space ratio changes with age and that in South African miners with silicosis there exists a relationship between the degree of silicosis and the respiratory wall-to-respiratory space ratio, indicating that silicosis and emphysema are interrelated. There are 16 references. -- Author's summary

964 Regional Distribution of Pulmonary Arterial Blood Flow in Emphysema. V. Lopez-Majano, D.E. Tow, and H.N. Wagner, Jr. J. Am. Med. Assn. 197, 81-84 (July 11, 1966).

Lung scanning after intravenous administration of macro-aggregated I-131 serum albumin has been used to study the regional pulmonary circulation in 62 patients with pulmonary emphysema. The major finding was that 95% of the patients had well-defined areas of decreased pulmonary arterial blood flow. In the majority of the cases, the chest roentgenogram alone was inadequate for demonstrating these localized changes. The scanning method was helpful in differentiating obstructive emphysema from less serious lung disease such as asthma and bronchitis. It was also useful in the determination of the desirability of surgery and in follow-up evaluation. -- Authors' abst.

965 Gross Fixation Methods Used in the Study of Pulmonary Emphysema. R.E. Silverton. Thorax 20, 289-297 (July, 1965).

Techniques used for the fixation of lungs in the expanded position are described and discussed. The advantages and disadvantages of each are reviewed. The method of distending lungs with formal-acetate is the most convenient and most widely used procedure. In order to allow comparison of the results of different workers in the field, an attempt should be made to introduce a standard technique of inflation of the lung. Bronchial insufflation with liquid formalin using a pressure not greater than 30 cm. of water, with ligation of the vessels and bronchus, is suggested. -- Am. Rev. Resp. Dis. Absts.

966 Interalveolar Air Drift. S.B. Reich and J. Abouav. Radiology 85, 80-86 (July, 1965).

Interalveolar aeration, or air drift, through the pores of Kohn is a well established physiologic phenomenon, the clinical significance of which is now being recognized. Experimental demonstrations in dogs of the nature of interalveolar air drift are presented. These interalveolar collateral channels are an integral part of the mechanism of cough. Their relationship to plate atelectasis, emphysema, unilateral hyperlucent lung, and migrating pulmonary nodules is discussed. -- Am. Rev. Resp. Dis. Absts.

SKIN DISEASES AND BURNS

967 Menthol Urticaria. E.M. McGowan. Arch. Dermatol. 94, 62-63 (July, 1966).

A case of urticaria attributed to menthol is reported in a young girl exposed to mentholated cigarettes, cough drops, aerosol room spray, and topical mentholated medicaments. The etiology was suggested by the history of exposure and was established by the results of oral challenge to 10 mg. menthol in 50% ethanol. A mild urticarial reaction and a fall in the total circulating basophil leukocytes following the menthol challenge were considered diagnostic of hypersensitivity. Skin tests to menthol were not diagnostic. A direct in vitro basophil degranulation test to menthol, 1:5,000, showed a significant degranulation of basophil leukocytes. The urticaria resolved completely when all mentholated and minted preparations were discontinued. Two subsequent urticarial episodes followed the use of a mint-flavored toothpaste and the ingestion of a minted iced tea preparation. -- J. Am. Med. Assn. References & Reviews

968 Schistosome Dermatitis in Association With Rice Growing in the Northern Territory of Australia. A.J. Bearup and W.A. Langsford. Med. J. Australia 1, 521-525 (March 26, 1966).

A report is made of schistosome dermatitis affecting ricefield workers in Australia. Reasons are given for ascribing this condition to the presence of C. parocellata, schistosome cercaria developing in the aquatic snail L. phillipsi, and experimental work on the snail host is described. The cercariae are probably derived from aquatic birds and are thought to occur throughout Australia in suitable swamps and slow-flowing streams. Methods of protecting workers from this dermatitis are outlined. There are 15 references. -- Public Health Eng. Absts.

969 Subcutaneous Nocardiosis. R.H. Thorlakson and C.H. Rusnak. Can. Med. Assn. J. 95, 224-227 (July 30, 1966).

Nocardiosis is a fungous disease which is world-wide in its distribution and may affect humans as well as animals. The disease was first described in 1888 by Nocard, who had studied glanders, a fungous disorder of cattle, in Guadeloupe. The human counterpart was first described by Eppinger in 1890. Since then physicians have gradually become aware of this uncommon fungus which may affect humans. The genus Nocardia is a member of the order Actinomycetales. Nocardia asteroides is the predominant species affecting humans. Only very rarely is Nocardia brasiliensis reported as the cause of the disease in man. In humans the fungus may cause a chronic infection which affects chiefly the lungs and subcutaneous tissues. It may be difficult to distinguish the disease caused by the fungus Nocardia from diseases caused by the more common mycobacteria of tuberculous or actinomycosis, all of which give rise to chronic granulomas. Nocardiosis is most likely to be confused with actinomycosis, which it closely resembles clinically, radiologically and bacteriologically. Both are chronic suppurative mycotic infections. In the present case a 63-year-old woman had subcutaneous nocardiosis with a nodular lesion that appeared at the site of an injury to the forearm, sustained 38 years before. The original wound was said to have been contaminated by grass and soil and had taken six months to heal. The patient had suffered from rheumatoid arthritis since 1950 and had been treated with corticosteroids since 1954. No other primary sites of infection were identified and no further injury to the arms had been sustained. It is suggested that the area might have been contaminated with the fungus Nocardia at the time of injury 38 years before. If so, the length of the latent period is unusual. The possibility that steroid therapy reactivated a dormant infection is also suggested.

970 Silver Nitrate Treatment of Thermal Burns: A Critique of Four Mortalities Under This Program. M. Lentz, R. Seaton, and B.G. Macmillan. J. Trauma 6, 399-406 (May, 1966).

Theoretical considerations in the therapy of burn wounds with silver nitrate soaks are discussed in the light of four patients, all of whom died. In three of the cases, the treatment produced a clean surface. Limited experience does not imply a condemnation of this therapeutic approach: rather, it suggests that caution and experience with the treatment are necessary to avoid complications. -- J. Am. Med. Assn. References & Reviews

971 Use of a Topical Sulfonamide in Control of Burn Wound Sepsis. J.A. Moncrief, et al. J. Trauma 6, 407-419 (May, 1966).

The successful control of invasive burn wound sepsis by the use of a topical sulfonamide in a water-soluble base has resulted in control of infection in the burn wound and the prevention of active invasive burn wound sepsis. The overall mortality has been reduced to 50% of the previous value, with the most significant reduction in mortality occurring in the burns of 50% or less. The determination that the waxy-white, insensitive, soft burn is indeed a very deep dermal burn may be the crux of the matter. Without

effective topical therapy, these wounds would be converted to full-thickness loss and become the site of invasive bacterial infection. With the suppression of bacterial proliferation, the epithelial elements remain, provide a means of rapid coverage of the burn wound, and the adjacent connective tissue elements form an effective barrier to the invasive burn wound infection. The main problem in the use of topical therapy is the acidosis which may occur upon its use. The inhibition of the carbonic anhydrase buffering mechanism by the sulfamylon and the heavy acid load which is absorbed results in the pulmonary buffering mechanism being the only effective means of maintaining a normally functional pH. A rapid respiratory rate is characteristic of all patients undergoing such therapy, but it is the change in the character of the respiration which heralds the onset of an uncompensated acidosis, resulting from impairment of the pulmonary ventilating mechanism, usually the result of bronchopneumonia or congestion.
-- J. Am. Med. Assn. References & Reviews

972 Is There a Malignant Freckle? R.N. Ollstein, et al. Cancer 19, 767-775 (June, 1966).

The malignant freckle diagnosis is best suited to the clinical pattern of an indolent facial pigmented lesion of the elderly. The histopathology of such tumors is variable and not diagnostic. The use of the histopathologic diagnosis of malignant freckle is not advised, especially in extrafacial lesions, where its unjustifiable implied good prognosis is misleading. These conclusions are based on a review of 23 cases of malignant freckle diagnosed pathologically. Of the 18 extrafacial lesions studied 17 proved on second examination to be invasive malignant melanoma. The five facial lesions demonstrated variable pathology. -- J. Am. Med. Assn. References & Reviews

CHEMICAL HAZARDS

973 Spectral-Luminescent Determination of 3, 4-Benzpyrene in Highly Refined Industrial Paraffins. L.M. Shabad and A. Ya. Khesina. Ind. Lab. (USSR) (English Trans. of Zavodskaya Laboratoriya) 31, 1682-1683 (Nov. 1965).

The authors studied 60 domestic and two imported specimens of paraffins intended for use in the food industry, e.g., paraffined cups for melted butter, sour cream, wrappers for confectionery, bread, rolls, and buns. All of the paraffins studied contained the carcinogenic substance 3, 4-benzpyrene. -- Public Health Eng. Absts.

974 Skin Temperature Recording with Phosphors. Toxicity Studies on Animals. P.H. Derse and L. L. Alt. Can. Med. Assn. J. 95, 357-360 (Aug. 20, 1966).

In a previous communication in this journal (R.N. Lawson and L.L. Alt, Can. Med. Assn. J. 92, 255 (1965)), a method was described for converting invisible thermal patterns of the human skin into a detailed visible picture. At that time, the question of possible toxicity of the thermographic phosphor was raised. Toxicity studies conducted on laboratory animals indicate that the probability of toxic side reactions resulting from the use of zinc-cadmium sulfide phosphor spray is very low. -- Authors' abst.

975 Cerebro-Ocular Effects of Carbon Dioxide Poisoning. A. Freedman and D. Sevel. Arch. Ophthalmol. 76, 59-65 (July, 1966).

Carbon dioxide from subterranean sources may collect in wells when the barometric pressure falls abruptly. In sufficient concentration it may cause a characteristically sudden loss of consciousness and death. The neurological and ocular changes in two men who survived asphyxiation in a well are described. The main persistent features were headache, photophobia, and limitation of accommodation and eye movements—especially convergence. There were also abnormalities of dark adaptation and of visual fields. The clinical features indicated diffuse, focal cerebral damage. Although anoxia could not be entirely excluded in the etiology, carbon dioxide may have a specific histo-toxic action on nerve tissue.
-- J. Am. Med. Assn. References & Reviews

976 Studies on the Measurement of Fluoride in Air and Plant Tissues by the Willard-Winter and Semiautomated Methods. J.S. Jacobson, et al. J. Air Poll. Control Assn. 16, 367-371 (July, 1966).

Determinations of fluorine (F) in plant tissues by the Willard-Winter and semiautomated methods have been studied for the presence of determinate and indeterminate errors by multiple linear regression analysis. The results have provided a better understanding of the magnitude of differences between tissue samples required for statistical significance and have suggested that the errors involved are much greater both in number and magnitude than usually assumed. The

results have also established that the semiautomated method is a satisfactory alternative to the Willard-Winter method for determining the F content of plant tissues. Investigations of the sources of error in F determinations by the semiautomated method were carried out, and the results indicated a number of ways of reducing errors. Determinations of the F content of air by three methods were compared and studied to estimate the magnitude and locate the sources of error. Here, too, the results indicated that present estimates of the reliability of determinations of the F content of air may be overrated, and they have suggested that improvement in the means of collection of hydrofluoric acid is the best way of improving reproducibility. There are 11 references. -- Authors' abst.

977 Acute Selenium Poisoning. R.F. Carter. Med. J. Australia 1, 525-528 (March 26, 1966).

A case report is presented of acute selenium poisoning that was caused by ingesting selenious acid contained in a proprietary preparation of gun-blueing compound. There are 20 references. -- Public Health Eng. Absts.

978 Photochemistry of Ozone in a Moist Atmosphere. B.G. Hunt. J. Geophys. Res. 71, 1385-1398 (March 1, 1966).

A detailed investigation has been made into the photochemistry of ozone in an atmosphere containing hydrogen. The results illustrate the variations of the gas concentrations at night and indicate that the altitude range 70 to 80 km. appears to be very active photochemically at this time. The rate of formation of hydroxyl is analyzed to obtain an estimate of the diurnal variation of the hydroxyl airglow emission, as well as the vertical distribution of this emission. The theoretical results are shown to agree satisfactorily with observation, and it is concluded that the hydrogen-ozone reaction can adequately account for most of the observed features of the hydroxyl emission. There are 49 references. -- Public Health Eng. Absts.

979 Effects of Sulfur Dioxide on Surface Properties of the Lung. L.M. Kahana and M. Aronovitch. Am. Rev. Resp. Dis. 94, 201-207 (Aug. 1966).

The effects of sulfur dioxide on the surface properties of the lungs were studied in rats using volume pressure determinations during fluid and air filling of excised lungs to separate tissue and surface forces. In a single exposure study involving ten rats that were exposed to a mean concentration of 688.8 ppm of sulfur dioxide for three hours, a reduction in surface forces was clearly demonstrated. No significant changes were observed during saline filling as compared with control values, but a marked decrease in mean transpulmonary pressures was evident during air filling. Similar results appear to have been obtained in a multiple exposure study in which five rats were submitted repeatedly to a mean concentration of 358.9 ppm of sulfur dioxide over a three-week interval. Changes in surface properties were, however, obscured by a number of accessory factors such as a difference in lung size between the control and exposed groups and other effects of sulfur dioxide, including airway obstruction and, possibly, pulmonary edema. The findings suggested a reduction in surface tension; it was speculated that this might have been caused by increased secretion at the alveolar surface producing an increased concentration of surfactant in the alveolar lining film. It was further suggested that a similar mechanism, that is, a reduction in surface forces associated with an increase in lung compliance resulting from an inhaled pollutant, might be an important factor in the development of emphysema. --Authors' summary

980 The Toxic Effects of High Oxygen Concentration on Dog Lung: Pathogenetic Considerations. R.S. Totten, et al. Ann. Mtg. Absts. Intern. Acad. Pathol. Cleveland, March 5, 1966. Lab. Invest. 15, 1104-1105 (June, 1966).

Although there are numerous papers concerning the toxic effects of prolonged breathing of 100% oxygen on the lungs, the pathogenesis of the lesions remains obscure. These experiments were designed to trace the development of such changes under varying conditions of controlled ventilation. In two groups of dogs (11 animals) differential bronchial intubation provided one lung with 100% oxygen and one lung with air. Biopsy specimens were obtained at intervals and autopsy specimens at 24 and 48 hours. An additional two groups of dogs (17) were exposed to air and oxygen in pairs and sacrificed when respiratory distress became severe. This ranged from 36 to 78 hours with a mean of 54 hours. In one group the lungs were periodically over-inflated every 10 minutes to 30 cm. of water pressure. All animals were anesthetized and ventilation was controlled with a synchronized double piston ventilator. Detailed gross and histologic observations including electron microscopy failed to reveal significant differences between the lungs exposed to air or oxygen, with one exception. A striking degree of interstitial edema, particularly perivascular, was noted in both, but was consistantly more severe in those lungs which received 100% oxygen. Evidence will be presented to suggest that the pathogenesis of these lesions involves a qualitative (oxygen) factor and a quantitative (pressure) factor. Indirect evidence has been accumulated to indicate that these lesions contribute significantly to the development of the well recognized toxic effects of prolonged breathing of 100% oxygen on the lungs.

981 In Vivo Method for Detecting Antimony Deposits in the Lung by Differentiated Absorption of X-Radiation. R.I. McCallum and M.J. Day. Lancet 2, 882-883 (Oct. 30, 1965).

The pneumoconiosis of antimony process workers is probably a benign condition because all of the metal is not retained in the lungs, a small amount being constantly excreted in the urine. Fumes of antimony oxide are given off during the refining process. Thus far, fibrosis has not been demonstrated in the lung as a result of this inhalation. Some employees exposed to antimony and zirconium, two of whom had been exposed to antimony only, were studied. The radioactive isotope iodine 125 was used. The K electrons (K alpha and K beta) were measured by scintillation counter between the source and the subject and distal to the subject. Readings were made on a regular pattern over both lungs. Both of the men who had been exposed to antimony only had definite evidence of antimony deposits in the lung. The three men who had been exposed to a mixture of dusts had no such evidence, nor had the three men whose only exposure was to coal dust. This method of differential absorption of roentgen radiation may be used to detect any metal of high atomic number deposited in the body. -- Am. Rev. Resp. Dis. Absts.

982 Roentgenologic Patterns in Long-Standing Beryllium Disease. A. Weber, J. Stoeckle, and H. Hardy. Am. J. Roentgenol. Radium Therapy Nuclear Med. 93, 879-890 (April, 1965).

The development of unusual roentgenologic patterns in patients with long-standing beryllium disease is described. These patterns are illustrated by eight patients who were observed for up to 18 years. The pulmonary changes consisted of granular, ill defined nodular and linear densities occurring singly and in combined forms. Lymph node enlargement, slight to moderate in degree, accompanied these lung densities in six of the eight patients reported. A mixed pattern of granular and nodular densities was most commonly seen. In one patient, the persistence of granular densities alone, unchanged over a period of 18 years, is a most unusual pattern and rarely observed. That calcification of different densities may take place in beryllium disease is not generally appreciated. This finding has been observed in several cases. The extent and degree of nodular calcification vary. Pathologic studies reveal that such calcification of nodules may be present although not seen on roentgenograms. Small and scattered linear densities often develop in the course of years. In advanced cases, linear densities may be very marked and associated with contraction of segments and lobes, conglomeration of nodular densities, and emphysema with bullae formation. Such roentgenologic changes most frequently involve the upper lobes. In contrast, similar fibrotic changes confined to the lower lobes are very rarely seen. The formation of large bullae in the lower lobes is likewise very infrequent. When hemoptysis occurs, the question of whether such cysts are tuberculous cavities becomes a clinical issue. In three well studied cases an acid-fast infection was ruled out completely. Concomitant with the fibrotic and emphysematous lung changes, there may be a diminution in the number of granular and nodular densities to a point where a roentgenologic diagnosis of beryllium disease is not considered. -- Am. Rev. Resp. Dis. Absts.

983 Copper Intoxication. Report of a Case with Observations on Ceruloplasmin. N.A. Holtzman, D.A. Elliott, and R.H. Heller. New Engl. J. Med. 275, 347-352 (Aug. 18, 1966).

A case of copper intoxication that followed repeated debridements of burned skin with copper sulfate crystal is reported. The manifestations of intoxication included jaundice, hemolytic anemia and oliguria. There was a leukocytosis and transient elevation of serum glutamic oxalacetic transaminase and cephalin flocculation. Serum and urine copper concentrations were elevated. After the administration of pencillamine the cupriuria increased whereas the total serum copper declined. There was a striking increase in the concentration of serum ceruloplasmin, which fell less slowly than total serum copper after penicillamine therapy. It is suggested that the elevated ceruloplasmin resulted directly from the increased body copper. The significance of this to copper transport in normal persons and in patients with Wilson's disease is discussed. There are 43 references. -- Authors' summary

984 Nephropathy in Chronic Lead Poisoning. J.M. Morgan, M.W. Hartley, and R.E. Miller. Arch. Internal Med. 118, 17-29 (July, 1966).

Thirteen patients have been studied because of known chronic lead exposure or because of renal failure without apparent cause. A common picture has emerged consisting of anemia, normal or decreased renal size and function without definite urinary findings or infection, strong evidence of excessive past lead absorption, and a very protracted course, frequently complicated by hypertension and joint disease. In the majority of cases, renal biopsy showed focal or diffuse interstitial fibrosis with an impressive paucity of inflammatory infiltrate, tubular degeneration with intranuclear inclusions, and an unusual fibrosis of the adventitia and media of the small arteries. There is strong supportive evidence from the literature that such a syndrome might be due to chronic plumbism. There are 36 references. -- Authors' summary

985 Toxic Psychosis Caused by Inhalation of Petrol Fumes. M. F. Bethell. Brit. Med. J. 2, 276-277 (July 31, 1965).

A case report is given of a young boy who suffered acutely disturbing hallucinatory symptoms after voluntarily sniffing petrol vapors. A total of 15 other cases of such voluntary breathing of petrol fumes, and similar hallucinatory experiences are noted in the literature.-- APCA Abs

986 Pneumatocele Formation Complicating Hydrocarbon Pneumonitis. O. Baghdassarian and S. Weiner. Am. J. Roentgenol. Radium Therapy Nuclear Med. 95, 104-110 (Sept. 1965).

Ingestion of petroleum distillates accounts for 21 to 25% of all fatal poisonings in children under the age of five years. Between 1951 and 1958, 763 deaths in the United States were attributed to hydrocarbon ingestion; 90% of these were in children under five years of age. Complications resulting from ingestion of petroleum distillates include central nervous system depression, degenerative and hemorrhagic changes in various viscera, and pneumonitis. Pneumonia and pulmonary edema are the greatest threats to life. Three patients who developed pneumatoceles following hydrocarbon pneumonia are reported. All threee progressed to complete recovery without evidence of superimposed infection or additional complication.-- Am. Rev. Resp. Dis. Absts.

987 The Formation of Persistent Toxic Chlorohydrins in Foodstuffs by Fumigation With Ethylene Oxide and With Propylene Oxide. F. Wesley, B. Rourke, and O. Darbishire. J. Food Sci. 30, 1037-1042 (Nov.-Dec. 1965).

Concentrations of ethylene chlorohydrin up to about 1,000 ppm were found in whole spices and ground spice mixtures after commercial fumigation with ethylene oxide. These chlorohydrins are persistent under food processing conditions. There are 16 references.
-- Public Health Eng. Absts.

988 Involutional Benzene Myelopathy With Appearance at Advanced Stage of Mediastinal Reticular Sarcoma. L. Paterni and V. Sarnari. Securitas 50, 55-59 (Oct. 1965). Italian.

This article illustrates a case of mediastinal glandular histiosarcoma with a tendency to generalization appearing during the course of myelopathy of average seriousness in a woman exposed to benzene working in a rotogravure press. -- Public Health Eng. Absts.

989 Osmotic Fragility Studies in Three Patients With Aplastic Anemia Due to Chronic Benzene Poisoning. M. Aksoy, et. al. Blut 13, 87-90 (May, 1966).

In three patients with aplastic anemia due to chronic benzene poisoning, osmotic fragility was tested before and after incubation, at 37°C. (98.6°F.) for 24 hours. Slight to moderate increases after incubation were observed in two patients, whereas in all cases the osmotic fragility was within normal range before incubation. -- J. Am. Med. Assn. References & Reviews

990 Ultrastructural Alterations in Deuterium Intoxication. H. O. H. Zunker and D. G. McKay. Arch. Pathol 82, 18-26 (July, 1966).

Deuterium intoxication was studied in three groups of animals that ingested 75% deuterium oxide-drinking water. In one group, four pregnant rats were given deuterium, beginning the tenth day of gestation. Histological study revealed areas of pyknotic nuclei in the renal tubules and basement membrane thickening of salivary gland acini. Another group given deuterium starting the 15th day of gestation was sacrificed five days later. An electron microscopic study showed an increase of large vacuoles and electron-dense cytoplasmic bodies in the cells of the proximal convoluted tubule. Enlargement of the endothelial and epithelial glomerular cells resulted in partial obliteration of capillary lumina. Degradation of the endoplasmic structures was observed in the cells of the salivary gland acini. In the third group, two mice received deuterium for nine to ten days. Alterations were more pronounced, with varying degrees of degeneration present in the cells of the proximal convoluted tubules. Deuterium may have an effect on water transfer.
-- J. Am. Med. Assn. References & Reviews

INDUSTRIAL DUSTS

991 A Comparison of Impinger and Membrane Filter Techniques for Evaluating Air Samples in Asbestos Plants. H. E. Ayer, J. R. Lynch, and J. H. Fanney. Ann. N. Y. Acad. Sci. 132, 274-287 (Dec. 31, 1965).

The impinger method was developed for the evaluation of atmospheres in silicosis producing occupations. The impinger is an efficient collector of quartz and particles of a similar density,

3/4 micron in diameter and larger. To compare the ratio between impinger particle counts and membrane fiber counts, five main operations were selected: fiber preparations, carding, spinning, twisting, and weaving. Two hundred and 30 pairs of samples taken by two widely used sampling and counting methods were compared. These methods were counting of total dust in impinger samples, and counting fibers only on a membrane filter. -- APCA Absts.

992 Developments in Dust Sampling and Counting Techniques in the Asbestos Industry. S. Holmes. Ann. N.Y. Acad. Sci. 132, 288-297 (Dec. 31, 1965).

Asbestos dust has been recognized as an industrial hazard in Great Britain and an extensive survey of the textile side of the industry resulted in the formulation in 1931 of the Asbestos Industry Regulations. To assess the effect of the measures taken, it was necessary to employ some means for the sampling and analysis of airborne dusts, and a review was made of the available techniques. Thermal precipitators, the membrane filter technique, mounting the samples, and counting technique are discussed. -- APCA Absts.

993 Introduction to Symposium on Farmer's Lung. P.A. Bunn. N.Y. State J. Med. 65, 3013 (Dec. 15, 1965).

This symposium on farmer's lung was held at the new State University Hospital, Syracuse, N.Y., Feb. 9, 1965. In his introduction the author states that the syndrome goes by several synonyms and is among the so-called pneumoconioses related to exposure to the vegetable dusts. These include mill-fever (organic dusts), byssinosis (cotton), bagassosis (moldy sugarcane), grain asthma (grain), tamarind asthma (tamarind seed), and weaver's cough (moldy cotton yarn). It is a fascinating disease and probably represents a very fundamental defect in the alveoli, giving rise to a classical alveolar capillary block. Unlike the original observations made about the pathogenesis, it may not necessarily be a specific infection but rather a condition with immunologic overtones producing a serious functional defect. -- APCA Absts.

994 Farmer's Lung as Observed in Chest Survey Clinics. J.M. Constantine. N.Y. State J. Med. 65, 3015-3020 (Dec. 15, 1965).

Four of the cases of farmer's lung seen in the clinics have been presented to illustrate: (1) an acute stage of farmer's lung, (2) super-imposed disease, (3) the natural history of progressive disease with continued exposure to the causative environment, (4) a late complicating incident which may or may not be related to farmer's lung. These are presented to help indicate the occurrence of farmer's lung in southeastern New York State as observed in the outpatient and field clinics and are not based on minutely examined and described inpatients. -- APCA Absts.

995 Identification Study of Farmer's Lung. J.R. Wilson. N.Y. State J. Med. 65, 3013-3015 (Dec. 15, 1965).

The incidence of farmer's lung was investigated in 16 medical clinics situated in farming areas of the U.S. and Canada. Circulating antibodies which reacted to the antigen of farmer's lung were found in 13.1% of a group of farmers exhibiting non-specific respiratory symptoms. The results of this study suggest that the disease has a widespread incidence and should be considered in agricultural workers who have otherwise unexplained respiratory symptoms. -- APCA Absts.

996 Farmer's Lung Disease in Eastern Pennsylvania. C. Laubach. N.Y. State J. Med. 65, 3020-3025 (Dec. 15, 1965).

A clinical evaluation of eight patients with some evidence of farmer's lung disease was summarized. Of 56 blood specimens analyzed by the method discussed by Emanual, et al., and Wenzel, et al., 10.7% were sero-positive. There seemed to be some associated electrophoretic pattern. The case histories of two patients are discussed in detail. -- APCA Absts.

997 Experimental Pine Pollen Granulomatous Pneumonia in the Rat. D.O. Adams. Am. J. Pathol. 48, 153-162 (July, 1966).

Speculation concerning a possible etiological relationship between pine pollen and sarcoidosis has stimulated interest in the experimental effects of pine pollen. Whole and ground grains of oak and pine pollen were injected into the lungs of rats. Animals receiving oak pollen developed only foreign body granulomas: animals receiving pine pollen developed epithelioid and foreign body granulomas. Epithelioid granulomas were more pronounced in areas were digestion of the resistant pine pollen was more advanced than in animals receiving ground pine pollen. The simple presence of pollen grains may evoke foreign body granulomas, and digestion of pine

grains may liberate a substance which evokes epithelioid granulomas. An etiological relationship between pine pollen and sarcoidosis remains unestablished as disseminated granulomas were not produced. -- J. Am. Med. Assn. References & Reviews

998. Epidemic Nosebleeds in Apple Packers. G.E. Quinby. J. Am. Med. Assn. 197, 165-168 (July 18, 1966).

A new disease of apple packers appeared in 1964 in Washington. Blood in nasal discharges ranged from mild staining to dripping hemorrhage. The disease followed chemical changes in the fabrication of two brands of blue-dyed apple-packing trays made from salvaged newspaper. A third tray made of plastic and a fourth of virgin wood pulp produced no such signs of nasal irritation. Attack rates of hemoglobin in nasal discharges in the control general population was about 25% during the same six-week period. All packers dripped blood from the nose in some plants. Nosebleeds decreased where newsprint trays were stopped. Bleeding began in packers switched late in the season from nonirritating to newsprint trays. -- Author s abst.

999 Right Ventricular Hypertrophy in Bituminous Coal Miners in West Virginia. W.A. Laqueur and H.A. Wells, Jr. Ann. Mtg. Absts. Intern. Acad. Pathol. Cleveland, March 5, 1966. Lab. Invest. 15, 1127 (June, 1966).

As part of a comprehensive study of the pathology of coal workers' pneumoconiosis in Appalachian coal miners, hearts from 200 consecutive autopsies performed by the authors were dissected after a method based on the unrolling technique of Batson. (The method is briefly described in the complete paper.) Of the hearts, 150 were from bituminous coal miners, 25 were from nonminers, and 25 were from females. The ratio of right ventricular to left ventricular mass was determined in each case. Analysis of data shows that the nonminers and females dying without heart disease had total heart weights that were consistent with the normals recorded in the literature, allowing for differences in technique. The total heart weights from coal miners varied significantly from the normal, as did the ratio of right to left ventricular weight. Definite right ventricular hypertrophy (right to left ratios less than 1.20) was present in 38% of miners and in 4% of the control group. Twenty-six per cent of the miners died with clinically diagnosed right heart failure (right to left ratios averaged 1.1), compared to 4% of nonminers and females. The right to left ventricular ratios were compared with the severity of coal workers pneumoconiosis as judged by x-rays and autopsy examination, and a positive correlation was demonstrated. The influence of left ventricular hypertrophy upon right to left ventricular ratio is discussed. Complete work records allowed plotting of estimated exposure against lung disease and lung disease versus right ventricular hypertrophy. An attempt is made to compare the results of similar studies in England and Wales.

1000 Pneumoconiosis Study of Pennsylvania Anthracite Miners. W.W. McBride, et al. J. Occ. Med. 8, 365-376 (July, 1966).

Chest roentgenograms, three-second vital-capacity determinations, and occupational and personal histories were obtained from 1,858 anthracite miners in Pennsylvania. Of the 1,858 working and retired miners studied, 739 (41%) showed roentgen evidence of pneumoconiosis. Of the working men in the present study, 30% showed evidence of the disease. This figure is higher than the 11% and 25% found in working bituminous coal miners of central and western Pennsylvania. The only previous study of Pennsylvania anthracite miners, reported in 1934, showed a pneumoconiosis prevalence of 23%. Because of conditions in the industry, the group studied was much older than the general working population and since there is a direct relationship between years of exposure and roentgenographic evidence of dust deposition in the lungs, the authors' findings should not necessarily be interpreted as demonstrating that work in anthracite coal mining has become more hazardous since 1934. -- Authors' summary

1001 Acid-Base Equilibrium in Pulmonary Silicosis. F. Dotta and A. Bianchi. Securitas 50, 61-65 (Oct. 1965). Italian.

The authors describe the modifications of the acid-base equilibrium in 50 cases of pulmonary silicosis. They emphasize the existence of a condition of hypocapnia and respiratory alkalosis in silicosis cases with a functional pattern of restrictive-type ventilatory insufficiency. A condition of hypercapnia and respiratory acidosis is frequently encountered in cases of silicosis with a functional pattern of obstructive-type ventilatory insufficiency. Five references are given. -- Public Health Eng. Absts.

1002 Tests for Effect of Asbestos on Benzo(a) Pyrene. Carcinogenesis in the Respiratory Tract. L. Miller, W.E. Smith, and S.W. Berliner. Ann. N.Y. Acad. Sci. 132, 489-500 (Dec. 1965).

Time of appearance and yields of papillomas and carcinomas in the respiratory tract of hamsters after intratracheal injections of benzo(a) pyrene are reported. Addition of chrysotile variety of asbestos in the injections gave results consistent with an hypothesis that this material promoted benzo(a) pyrene carcinogenesis in the respiratory tract. Addition of the amosite variety of asbestos to injections of benzo(a) pyrene did not increase the yield of tumors found in the respiratory tract. Two experiments were carried out. All lesions recognized as tumors in gross specimens by examination at 7X with a dissecting microscope proved to be papillomas or carcinomas when studied in histological sections. Tabulation of tumors in the present report is restricted to those that were detected by examination of gross specimens and then confirmed in histological sections. -- APCA Absts.

1003 The Occurrence of Pleural Calcification Among Asbestos Insulation Workers. I.J. Selikoff. Ann. N.Y. Acad. Sci. 132, 351-367 (Dec. 1965).

Roentgenographic study of 1,117 asbestos insulation workers showed pleural calcification to be a common finding, and 150 instances of such calcification were present. Data are presented which demonstrates that pleural calcification among workers exposed to asbestos in this trade rarely occurs in less than 20 years from onset to exposure. Pleural calcification was found in five of 725 asbestos insulation workers with less than 20 years from beginning work with asbestos. The pleural calcification is primarily found in the parietal pleura, more heavily, in the lower portions of the chest. Data concerning correlations with pleural fibrosis and asbestotic parenchemal fibrosis are given. Pleural calcification not infrequently is present in the absence of radiologically visible parenchymal fibrosis. The finding of calcification as described generally indicates asbestos exposure more than 20 years. -- APCA Absts.

1004 The Sequelae of Exposure to Asbestos Dust. J.C. Wagner. Ann. N.Y. Acad. Sci. 132, 691-695 (Dec. 31, 1965).

The sequelae of exposure to asbestos dust, include its inhalation, deposition, and the results of subsequent retention. The actual type of asbestos dust to which an individual is exposed depends upon the environment in which he works or lives and his occupation. It is necessary to know the mineralogical variety of asbestos and its contaminants, whether they come from the mines, mills, method of transport, or additives used in industry. The preliminary results of several experiments in which tumors have been obtained in experimental animals have been presented. In these studies a variety of dusts were inoculated into animals of several species. The yield of tumors is high but the dose of intrapleural dust is very large compared with the amount present in man. Experiments show that standard dusts from the different types of asbestos are required to establish a base line. This applies to dusts from all animal experiments, chemical analyses, and other investigations. -- APCA Absts.

1005 Clinical, Radiological, and Physiological Findings in Asbestosis. M. Kleinfeld, J. Messite, and J. Shapiro. Arch. Internal Med. 117, 813-819 (June, 1966).

Clinical, electrocardiographic, and physiological observations were made of 21 asbestos workers who had an average exposure to asbestos dust of 29.2 years and who had radiological findings compatible with asbestosis. Ten of the 21 workers had chronic cough, and seven evidenced exertional dyspnea. Basilar crepitations were found in eight, and six had clubbing. Electrocardiographic findings were abnormal in six but in none of these were the abnormalities consistent with the criteria of cor pulmonale. In eight individuals, the pulmonary infiltration was minimal, in nine it was moderate, and in four it was classified as severe. Varying degree of obliteration of the costophrenic sinuses was observed in 16 or cardiac borders in ten. Pleural calcification was observed in five. Two individuals showed emphysema which was localized. The abnormal lung function findings were consistent with a restrictive breathing and diffusion capacity impairment. This was characterized by low values in vital capacity (14 persons), in total lung capacity in (eight), and in diffusion capacity (13). The workers with dyspnea and lung crepitations had a significantly lower mean vital capacity and total lung capacity than those without these clinical findings. In addition, the group with pulmonary crepitations had a lower mean diffusion capacity for carbon monoxide ($^{D}L_{co}$). There was a poor correlation between clubbing and vital capacity, total lung capacity, and diffusion capacity. There was a weak correlation between these lung function parameters and the degree of pulmonary infiltration. When 16 of the 21 asbestos workers were compared with a group of 20 asbestos workers of similar age and duration of asbestos exposure, but having negative radiological findings, there were no significant differences in the clinical findings between the two groups. There was, however, a significantly lower vital capacity, total lung capacity, and diffusion capacity in the group with positive radiological signs as compared with the group with negative roentgenograms. There are ten references. -- Authors' summary

1006 Asbestos, An Intrinsic Factor in the Pathogenesis of Bronchogenic Carcinoma and Mesothelioma. W.M. O'Donnell, R.H. Mann, and J.L. Grosh. Cancer 19, 1143-1148 (Aug. 1966).

In 55 asbestos textile workers who had pathologically proven asbestosis, 28 malignant neoplasms were found—23 bronchogenic carcinomas and five mesotheliomas of peritoneum or pleura. Of the 28 patients with neoplasms, 26 had been exposed to asbestos dust before 1936; the medium total occupational exposure was 20 years. The interval from initial exposure until the recognition of the neoplasms varied from 20 to 40 years. Thirteen of the individuals no longer were employed in the industry when evidence of the neoplasms appeared. The primary anatomical site of the carcinomas was in the lower lobes of the lungs in 22 patients and in one instance was multicentric in origin. In the morphologic classifications of the neoplasms, ten were of the squamous cell variety; seven were anaplastic; five were adenocarcinoma and one was bronchiolar. The frequent association of pulmonary asbestosis with bronchogenic carcinoma (42%) and mesothelioma (8%), as seen in this study, lends further support to the opinion that asbestos is a carcinogen in susceptible individuals after critical exposure in the textile phase of the industry.-- Authors' abst.

1007 Biological Action of Glass Dust. K. Szymdzykiewicz. Med. Pracy (Lodz) 16, (4) 263-277 (1965).

In experimental conditions the biological action of two kinds of dust has been examined. These were polygonal glass dust, its geometric mean of particle size distribution being 2.5 microns, and fibrous dust, its geometric mean being 10.5 microns. Several experiments were carried out. In the first, both kinds of dust were administered to rats of Wistar race in doses of 0.5 mg., 2.5 mg., and 5.0 mg. in the form of suspension in 0.02 ml. of 0.9% sodium chloride between mesentery laminae of the small intestine. The animals were called (sacrificed) after three months; the nodules formed in places of dust injection were weighed and examined histopathologically. The increase of nodule weight in relation to the mass of injected dust was considered to be the measure of dust aggressiveness. It was stated that the mean increase of nodules weight after polygonal glass administration amounted to 3.7% and after fibrous glass administration to 270.0%. In the nodules the development of collagenous fibers was observed. In further experiments both dusts (in the amount of 50 mg./animal) were given by means of intratracheal injection to rats of Wistar race and to guinea pigs. The lungs and mediastinum lymphatic glands of the rats were examined after ten months and those of guinea pigs after 22 months. The hydroxyproline in the lungs was determined with Neuman Logan's method, and the histopathological and histochemical examinations were made. In all animals, statisically significant collagen increases ($p < 0.01$) were found in comparison with animals of the control group; however, no difference was seen in the collagen level in the lungs of animals which were given polygonal and fibrous dusts. Results of histopathological examinations have shown in all animals atelectasis foci and emphysema, fine-celled infiltrations around dust deposits and the increase of acid and neutral mucopolysaccharides. In animals which lived over ten months the slight development of silver absorptive and collagenous fibers was observed. Emphysema foci and atelectasis were greater in animals which were given fibrous glass dust. In animals which received polygonal dust, the inflammatory changes were prevalent. In the mediastinum lymphatic glands, were observed catarrhal alterations in sinuses, dust deposits, and abortive gigant (sic) cells. Fibrous glass dust provokes more severe injury of the lungs than polygonal dust. There exists a great probability of the development of fibrous changes of pneumoconiosis-like type when the exposure to great concentration of glass dust is prolonged.
-- APCA Absts.

EDITOR'S NOTE: Assuming that the abstract accurately translates the author's findings, the following comments are pertinent: (1) Quantitation of morphologic changes such as those of inflammation in sections of lung is subjective and uncertain. When possible, chemical determination of hydroxyproline as a measure of connective tissue proliferation is a much more reliable indicator of degree of chronic inflammation. The author's findings indicate insignificant difference in hydroxyproline content of lungs exposed to filamentous glass versus those exposed to polygonal glass. The author's predictions of fibrous changes from glass dust exposure are not supported by his own findings or by work in our own laboratory. (2) As no mention is made of the Ciba Symposium[1] definition of emphysema, it is likely that the emphysema described may be an artefact. (3) Inflammatory changes observed in animal lungs at autopsy may be due to epizootic infection. As they are often found in control as well as exposed animals, the greatest caution and judgment is required to avoid erroneous interpretation. (4) Pulmonary pathological effects should not be predicted from connective tissue changes in the mesentery (or elsewhere), because of basic differences in tissues and also conditions of exposure (i.e. respirability of particles). --PG

[1] Ciba Guest Symposium Report: Symposium, Sept. 1958. Thorax 14:286, 1959.

RADIOACTIVITY AND X-RADIATION

1008 Hepatoma Induced by Thorium Dioxide (Thorotrast). J.S. MacKay and R.C. Ross. Can. Med. Assn. J. 94, 1298-1303 (June 18, 1966).

A case of hepatoma induced by thorium dioxide (Thorotrast) is reported. The literature concerning neoplasia associated with this agent is reviewed, with emphasis on the long latent period before the development of these tumors and the equally long latent period which preceded the recognition of their iatrogenic nature. In particular, this report is intended to illustrate the diagnosis of such tumors on radiological and histological findings, provided that one is aware of their existence and familiar with the distribution and appearance of thorium dioxide deposits in the tissues. Such a diagnosis can be made without a history of thorium dioxide administration, which often may not be available. -- Authors' abst.

1009 Histology of Human Ocular Laser Coagulation. H.C. Zweng, M. Flocks, and R. Peabody. Arch. Ophthalmol. 76, 11-15 (July, 1966).

Histological evidence is presented, showing that within 92 hours after laser photocoagulation of the human retina a firm chorioretinal adhesion is produced, sufficient to hold the retinal neuroepithelium, the retinal pigment epithelium, and the choroid together in a union firm enough to resist the retinal separation which very commonly occurs in the preparation of eyes for histological examination. Even at 44 hours, a definite adhesion formed between the pigment epithelium and the neuroepithelium which was strong enough to resist artifactitiously separation involved in processing the eye. It should be noted that clinical retinal separation occurs between the pigment epithelium and the neuroepithelium. Reaction seen histologically with energy levels usually used in isolating retinal tears is limited to the layers of the retina from the external nuclear layer externally through the pigment epithelium and the superficial choroid. No changes were noted in the areas of the retina internal to the external nuclear layers, and no changes were observed in the vitreous in the area of photocoagulation. -- J. Am. Med. Assn. References & Reviews

1010 Ocular Effects of Radiation and Photocoagulation. G.M. Howard. Arch. Ophthalmol. 76, 7-10 (July, 1966).

The majority of eyes treated with 8,000 roentgens or more developed clinical complications, such as sheathing and occlusion of the retinal vessels, speckled retinal pigmentation, formation of new vessels, vitreous hemorrhage, atrophy and neovascularization of the iris, and synechial closure of the angle with secondary glaucoma, three to six months later. Pathological changes such as synechial closure of the angle, thickening of the retinal vessels, and retinal atrophy were more frequent than in the control eyes. Massive invasion of the choroid by retinoblastoma was present in each of five eyes in which the tumor recurred in spite of several attempts at control with light coagulation. In addition to the growth of a tumor in the choroid, aggressive invasion of the inner sclera was present in the photocoagulated eyes. In one specimen, the tumor had extended through the sclera to the orbit in the absence of invasion of the optic nerve. This sequence of progression did not occur in the control eyes. Photocoagulation when used repeatedly and heavily may break down some of the natural barriers to tumor extension.
-- J. Am. Med. Assn. References & Reviews

1011 The Radiation Control Program. H. Blatz, et al. Public Health Repts. 81, 57-63 (Jan. 1966).

The legal authority for the radiation control program of the New York City Department of Health is the health code. Since 1958 it has required registration of radiation installations and compliance with requirements of the National Committee on Radiation Protection and Measurements. Since 1962 the code and an agreement between New York State and the Atomic Energy Commission have provided for the regulation of radioisotopes. -- Public Health Eng. Absts.

1012 Radionuclides in Foods From the Central Pacific, 1962. R.F. Palumbo, A.H. Seymour, and A.D. Welander. Nature 209, 1190-1192 (March 19, 1966).

Analyses of foods from the terrestrial and intertidal areas of Christmas Island and other islands, some as far as 3,200 km. from a nuclear test site; tuna fish from the high seas within 960 km. of the test site; and tuna fish caught by Japanese fishermen in an area that extended from 40°N. to 25°S. and from 140°W. to 124°E. demonstrated that radioactive fallout was barely detectable. There are eight references. -- Public Health Eng. Absts.

ENVIRONMENTAL MEASUREMENTS

1013 Enhanced Desorption of Atmospheric Samples From Activated Carbon. A. Turk, et al. J. Air Poll. Control Assn. 16, 383-385 (July, 1966).

It has been previously shown that the desorption of either a chemisorbed or a physically adsorbed gas can be enhanced by the subsequent introduction of a foreign gas. Under the conditions in which desorption recovery of butane from activated carbon was 50 to 65%, subsequent adsorption of carbon tetrachloride enhanced the recovery of butane to 100%. Recovery of diflurodichloromethane (CCl_2F_2), originally 79%, was enhanced to 99% by the same method. The method of enhanced desorption was applied to the recovery of samples from activated carbons exposed to atmospheres in Chicago, New Orleans, Philadelphia, Washington, D.C., and Cincinnati. Three different types of carbons, characterized by different distributions of pore diameters, were used simultaneously in the Cincinnati sampling. In general, the enhanced desorption technique was advantageous in providing analytical information on adsorbed samples recovered from carbon media. The enhancement effect is especially marked with hydrocarbon material. The effects of these structural attributes of the carbon media are evaluated by detailed consideration of infrared absorptions. -- Authors' abst.

1014 Hygienic Standard of Ammonium Content in the Atmosphere. M.M. Saifutdinov. Gigiena i Sanit. 31, 7-11 (May, 1966).

Atmospheric pollution with ammonium gas was evaluated in areas around metal works and plants producing coke and nitrogenous mineral fertilizers. On the basis of findings of the threshold of smell, light sensitivity of eyes adapted to darkness, and electroencephalographic tests, the maximum one-time permissible concentration (MPC) of ammonium in the air is set at 0.2 mg./cu.m. The daily average permissible concentration recommended is the same as the one-time MPC. -- J. Am. Med. Assn. References & Reviews

1015 Monitoring Methane in Atmosphere With a Flame Ionization Detector. G.C. Ortman. Anal. Chem. 38, 644-646 (April, 1966).

An instrument system for selective monitoring of trace hydrocarbons is described. It is comprised of sample pump, treated column of adsorbent material, hydrogen flame ionization detector, electrometer amplifier, and recorder. In operation, a continuous flow of sample air is pumped through the column to the detector. The column removes unwanted hydrocarbons while the one of interest passed unaltered. A prototype field instrument for monitoring atmospheric methane is detailed, and typical results characterizing its operation are reported. Response is linear and independent of the direction of change of the measured variable. Principles, design factors, application, and performance of the system are discussed and experimental data presented. -- Public Health Eng. Absts.

1016 Toxicity of Small Concentrations of Hydrolyzed Alcohol in the Atmosphere. R. Ubaidullaev. Gigiena i Sanit. 31, 3-7 (May, 1966).

To estimate the maximum permissible concentration (MPC) of hydrolyzed ethyl alcohol in the air, determinations were made of the threshold value of the smell of ethanol, its reflex action on the light sensitivity of the eyes and the electric activity of the cerebral cortex. A 24-hour test of the chronaxy of muscle antagonists, whole blood cholinesterase, coproporphyrine excretion in the urine, and total protein composition in the blood were studied in albino rats. As a result the daily permissible average MPC of hydrolyzed ethyl alcohol in the air has been set at 5 mg./cu.m. -- J. Am. Med. Assn. References & Reviews

1017 The Usefulness of the Nephelometric Method for Benzene and Oil Determination in Air. W. Stanilewicz and E. Mirowska. Med. Pracy (Lodz) 16, (3) 223-229 (1965).

The usefulness of nephelometric methods for the determination of benzene and oil vapor concentrations in the air has been studied. The investigations include the detection of the method, range of scale standards, effect of added water on the turbidity intensity, and the durability of oil and benzene solutions in glacial acetic acid. It was stated that Zapolsky's and Vorochobina's method, as well as the Pieregud's method, are not useful for the determination of benzene vapor concentrations in the air, because they result in decidedly lower values. -- APCA Absts.

COMMUNITY AIR HYGIENE

1018 The Development of Air Contaminant Emission Tables for Nonprocess Emissions.
H.H. Hovey, A. Risman, and J.F. Cunnan. J. Air Poll. Control Assn. 16, 362-366 (July, 1966).

In New York State, the calculation of air contaminant emissions from a variety of sources is an essential part of comprehensive air pollution studies. The tables used to calculate emissions were obtained from an extensive literature search and modified to apply to New York State conditions. For example, sulfur dioxide emission factors for coal were selected to reflect the average sulfur content of coal sold in New York State. Since the literature contains a wide array of emission factors, it was necessary to evaluate the factors and select those which would be most appropriate for the techniques used in conducting the comprehensive studies in New York State. This paper does not present the emission tables themselves but does outline the development of such tables for use in nonprocess calculations, i.e., combustion for heat and power of bituminous and anthracite coal, distillate and residual oil, natural and bottled gas; combustion of gasoline and diesel in internal combustion engines; burning of refuse in dumps and incinerators; and evaporation of gasoline from marketing operations. There are 37 tables. -- Authors' abst.

1019 Outbreak of Acute Eye Irritation Associated With Air Pollution. R.A. Partridge, et al.
Public Health Repts. 81, 153-158 (Feb. 1966).

An outbreak of acute, severe eye irritation in Buffalo, N.Y., occurred on September 18, 1963. It was hypothesized that on the morning of the episode a Hewson fumigation brought a concentrated layer of irritating pollutants abruptly to ground level, causing the eye irritation. A stagnating anticyclone associated with five consecutive nocturnal inversions dominated meteorologic conditions in Buffalo for six days before the episode. Twenty-nine equally strong inversions and 15 instances of five or more consecutive nocturnal inversions had occurred, however, during the previous two years without evidence of illness associated with air pollution. There are 15 references. -- Public Health Eng. Absts.

1020 Fume Incineration With Combustion Air at Elevated Temperature. F.D. Meyers and J. Waitkus.
J. Air Poll. Control Assn. 16, 378-382 (July, 1966).

This paper is a description of an unique system for the decomposition of objectionable fumes, applied for air pollution control to a fiber glass curing oven. The investigations preceding the development of the system are covered, followed by a description of the principal components of the system combining recuperative and regenerative heat exchange to produce a combustion air temperature appreciably above ambient. -- Authors' abst.

1021 Air Pollution From Wastewater Treatment. J.O. Ledbetter.
Water & Sewage Works 113, 43-45 (Feb. 1966).

Significant numbers of bacteria, including some pathogens, are emitted from activated sludge and trickling filter units. The author describes current and potential methods for improving this situation. There are 17 references. -- Public Health Eng. Absts.

ACCIDENTS AND PREVENTION

1022 Traffic Accidents As a Public Health Program. R. Kohn.
Can. J. Public Health 56, 441-444 (Oct. 1965).

From what is known of the causes of traffic accidents it can probably be concluded that many can be prevented at comparatively little cost and without abandoning the benefits of the motor car. Motor vehicles as a potential source of accidents and also as a factor in air pollution will, for some time to come, not be entirely free from health hazards. But once the element of human error and irresponsibility is reduced to its minimum, the residual risk will be one common to all technical devices which on the whole, make life better and more comfortable. Any remaining risks must be weighed against these advantages but they must be accepted only as long as science does not succeed in eliminating or reducing them. Industrial processes, aeroplanes, x-ray procedures, all have been made safer already. There is no reason to assume that this cannot be done for the automobile. The greater part of this paper is devoted to answering in a positive manner the question which is raised that if traffic accidents can be prevented, is the prevention of these deaths and injuries a public health problem? -- APCA Absts.

1023 Health Hazards Associated With Work in Confined Spaces. M. Kleinfeld and B. Feiner. J. Occ. Med. 8, 358-364 (July, 1966).

In 21 accidents during work in confined spaces, a total of 46 workers was affected. Negligence was the primary cause of death or injury. In each situation virtually no safety precautions were followed and no trained personnel were available to administer first aid immediately after the accidents occurred. Furthermore, in nearly all instances the accidents occurred in connection with the performance of maintenance and other special activities rather than in the course of routine operations. Safeguards for work in confined spaces were outlined under three broad categories: (1) testing and preparation of the confined space before entry; (2) use of precautionary measures during occupancy; and (3) assurance of the availability of prompt rescue and adequate first aid should an accident occur. In general, these safeguards can be enforced readily in large plants where they may be incorporated into existing safety programs, if they are not already part of them. However, application of these safeguards in small factories is not easy. Such establishments, in which most of the reported accidents occurred, do not usually have adequate safety programs or supervisory personnel with clearly defined safety responsibilities. As a result, the necessary safeguards are not available to provide protection during confined space operations. The conspicuous absence of safeguards in small establishments is due primarily to ignorance of the potential hazards inherent in work in confined spaces. The cases discussed demonstrated the need for a vigorous educational effort, particularly in small plants, to minimize deaths and injuries due to work in confined spaces.

-- Authors' summary

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