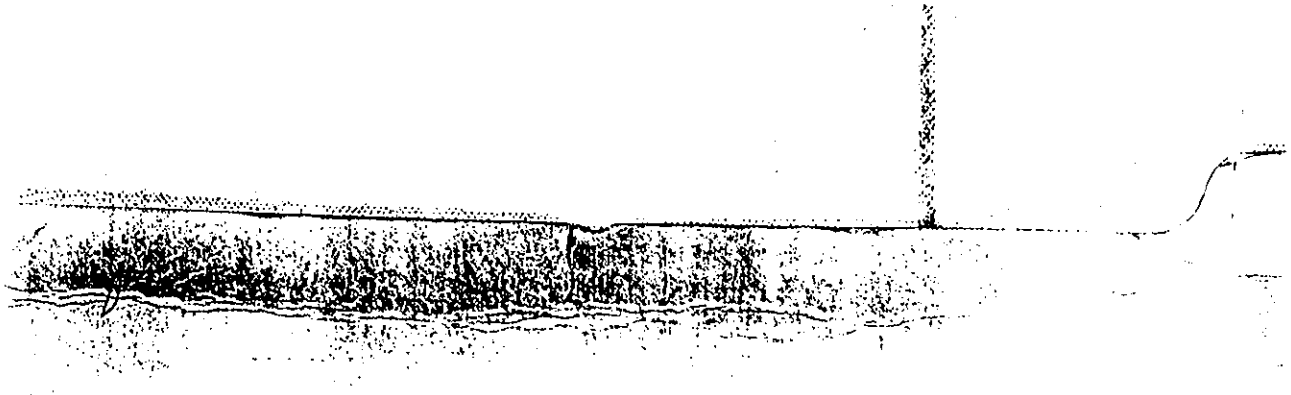
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LABELS - PRECAUTIONARY

HWBB-0019797



Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL

JANUARY, 1966
(Vol. 30, No. 1)

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

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UNIVERSITY ARCHIVES
November 1999

UNIROYAL ALUMNI NOVEMBER 1999

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Industrial Hygiene Foundation assumes no responsibility for statements in articles abstracted in this Digest or for material from other organizations which may be sent to members from time to time. The Digest's condensation of articles as well as literature not originating within the Foundation, are made available to our members solely for their information, by way of keeping them posted on developments.

MWBB-0019799

INDUSTRIAL HYGIENE FEATURES

The early detection of aging is discussed in Abst. No. 19.

Abst. No. 23 reports on the clergy and the mental health professions.

Abst. No. 25 presents the lonely chronic alcoholic.

De Quervain's disease is described in Abst. No. 27.

A study of pulmonary tuberculosis and carcinoma of the lung is presented in Abst. No. 30.

Telemetric electrocardiography is described in Abst. No. 31.

Abst. No. 35 studies smoking in relation to atherosclerosis of coronary arteries.

Abst. No. 40 investigates a starling roost as the source of urban epidemic histoplasmosis.

Abst. No. 50 is concerned with contact dermatitis due to formaldehyde in clothing textiles.

The chronic toxicity of glyceryl trinitrate is reviewed in Abst. No. 57.

Bone marrow changes in silicosis are investigated in Abst. No. 70.

Safe practices for industrial SCUBA diving are presented in Abst. No. 74.

A rapid and sensitive colorimetric reagent for nitrogen dioxide in air is described in Abst. No. 86.

A discussion on the health hazards of tire recapping is given in Abst. No. 87.

See Abst. No. 103 for details on the control of odors in working and industrial environments.

Management and industrial safety achievement is the topic of Abst. No. 104.

FOUNDATION FACTS

NEW MEMBER: The Foundation is pleased to announce election of the National Coal Association to membership.

A LEGAL COMMITTEE MEETING held on January 28, in New York, in the office of Mr. D. W. Stitt, Continental Can Company, was attended by Mr. E. K. Davison, (Chairman, IHF Board of Trustees); Mr. H. W. Speicher, (Co-Chairman, Eng. Com.); and Dr. R. T. P. deTreville. Mr. D. T. Doherty, (Chairman, Workmen's Comp. Commission of Md.) was also present. Among important subjects scheduled by T. C. Waters, (Baltimore) and Andrew Kalmykow, (American Insurance Association) Chairman and Co-Chairman, representatives of the Committee, were State vs. Federal Workmen's Compensation, Emphysema, Noise, and interpretation of Occupation Disease Laws. Annual Meeting plans were made.

FIFTY ENGINEERS attended the 2nd Annual Engineering Discussional held at the Holiday Inn, Pittsburgh, on January 11-13. Eng. Com. Chairman, Lester Cralley, (Alcoa) presided. Outstanding speakers covered unique Heating and Ventilation Designs, Oil Mist and Non-Ionizing Radiation. Special problems raised for discussion included health effects of Magnetic Forces, Occupational Disease Laws and their interpretation, and The Water Quality Act of 1965. All participants agreed that the meeting was a success. A Subcommittee, for planning future Discussionals, will be chaired by Mr. Samuel H. Thomas, (Owens-Corning Fiberglas).

A CHEMICAL-TOXICOLOGICAL DISCUSSIONAL tentatively announced in correspondence dated January 5 (transmitting the American Conference of Governmental Industrial Hygienists' (ACGIH) Threshold Limit Committee's 1966 Notice of Intent) will be held February 1-2. Chem-Tox Com. Co-Chairman, Dr. John A. Zapp, (duPont) will preside. Dr. H. E. Stokinger, Chairman of the ACGIH Threshold Limit Com., will discuss documentation of the proposed Limits.

STAFF ACTIVITIES:

DR. deTREVILLE participated in a panel on Industrial Hygiene 1975, held by the Pittsburgh Section of the American Industrial Hygiene Association on January 25. Program Chairman was Mr. John A. Janous, (J & L Steel). Other speakers included Prof. T. F. Hatch and Dr. David Minard, both of the University of Pittsburgh, Graduate School of Public Health.

DR. PAUL GROSS will be a discussant at the John A. Hartford Foundation Conference on Air Pollution and the Lung, at New York University and Bellevue Hospital March 17-18 chaired by Dr. A. Cournand.

1966 ANNUAL MEETING of Industrial Hygiene Foundation will be among the first scheduled for Pittsburgh's new Chatham Center. This modern conference center in downtown Pittsburgh has 450 rooms and the auditorium will accommodate 1,500 people. Mark the dates on your calendar now! OCTOBER 18-19, 1966.

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UNITED STATES TOBACCO

Novemdep 1992

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January, 1966
Volume XXX
No. 1

Industrial Hygiene Foundation
4400 Fifth Avenue
Pittsburgh, Pa. 15213

MMB-001980

INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

1 Air Pollution Medical Research Conference—3rd AMA Congress on Environmental Health Problems.

The American Medical Association's Council on Environmental and Public Health, Division of Socio-Economic Activities and Department of Environmental Health will jointly sponsor two important meetings in the near future. (See programs listed on pages 1 a. and 1 b.).

—An Air Pollution Medical Research Conference in Los Angeles on March 2, 3, and 4, 1966 to explore the complex interaction between biologic systems and environmental conditions. Advanced registration fee of $12.00 should be mailed to the AMA Dept. of Environmental Health, 535 N. Dearborn St., Chicago, prior to February 15, 1966. Room reservations should be made early at the Ambassador Hotel, 3400 Wilshire Blvd., Los Angeles. Singles $15.00; Doubles $19.00.

—The 3rd AMA Congress on Environmental Health Problems in Chicago, April 4-5, 1966 to study the Impact of Environment on Accidental Injuries and Fatalities. A fee of $10.00, payable at time of registration, includes admission, two luncheons, a reception, and a copy of proceedings. Room reservations should be made early at The Drake Hotel, Lake Shore Drive and Michigan Avenue, Chicago. Singles start at $10.00; twin rooms at $15.50.

2 Research Effects of Carbon Monoxide on Drivers.

Exploratory research on the effects of carbon monoxide on driving performance will be conducted by engineers at Ohio State University under a recently awarded grant from the National Safety Council. Administered through the university's Research Foundation, the grant will support a study to be conducted by Dr. Thomas H. Rockwell, professor of industrial engineering. The carbon monoxide experiments will involve on-the-road tests during which drivers will breathe air with reduced amounts of oxygen through respirators. Air to be used will be similar to that found at 13,000 feet altitude. The drivers will operate a specially-instrumented automobile and their actions and reactions will be recorded automatically. Breathing air with a limited oxygen content will cause a driver to react much the same as he would breathing air polluted with carbon monoxide. As a safety precaution, each test driver will be accompanied by a second experimenter ready to take control of the vehicle in event of an emergency. Dr. Rockwell said the tests are expected to show that sub-lethal concentrations of carbon monoxide caused by smoking or poor exhaust systems may subtly deteriorate a driver's ability to sense information around him and impair his control of the automobile. He said these factors can lead to an accident-producing situation. -- Safety Maint. 130, 38 (Dec. 1965)

3 Auto Accident Findings Reported.

A pathologist and an anatomist who have been on call 24 hours a day with law enforcement officers for on-the-scene investigations of 161 fatal automobile accidents in Washtenaw County, Michigan, reported findings to the American Society of Clinical Pathologists and College of American Pathologists in Chicago. About 40% of the 161 victims could have survived if simple lap seat belts had been worn in either the front or back seats; 45% died within the vehicle due to crushing action, Paul Gikas, M. D., and D. F. Huelke, Ph. D., University of Michigan School of Medicine, said. -- J. Am. Med. Assn. 194, 32 (Nov. 8, 1965)

4 Eye Effects Stop DMSO Clinical Work.

Production of pharmaceutical grade DMSO (dimethyl sulfoxide) ground to a halt recently at Crown Zellerbach's Camas, Washington, plant in the wake of the government-industry agreement to discontinue clinical testing of the product. The suspension of testing—agreed to voluntarily by drug companies sponsoring the work—was prompted by reports of adverse effects on the eyes of laboratory animals, according to the Food and Drug Administration. The action casts a cloud

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UNITED ALLOYS NOVEMBER 1999

AIR POLLUTION MEDICAL RESEARCH CONFERENCE

Ambassador Hotel, Los Angeles, March 2, 3, & 4, 1966

PROGRAM

Program Chairman
William S. Spicer, Jr., M.D.

WEDNESDAY, MARCH 2, 1966
EMBASSY BALLROOM

8:30-8:35 a.m. Greetings from the American Medical Association
Charles C. Edwards, M.D.

8:35-8:40 a.m. Greetings from the California Medical Association and the Los Angeles County Medical Association
Francis M. Pottenger, Jr., M.D.

8:40-8:45 a.m. Purpose and Expectations of AMA Sponsorship
James H. Sterner, M.D.

8:45-8:55 a.m. Introduction to the Conference
William S. Spicer, Jr., M.D.

8:55 a.m. **PANEL I:**
BASIC APPROACHES TO THE STUDY OF THE EFFECTS OF INHALED IRRITANTS ON THE LUNG
Chairman: Robert Frank, M.D.

9:00-9:15 a.m. The Physiological Basis of Common Pulmonary Function Tests
Peter T. Macklem, M.D.

9:15-9:30 a.m. Physiologic Responses to Inhaled Irritants
Jay A. Nadel, M.D.

9:30-9:45 a.m. Current Field and Laboratory Studies on the Effects of Urban Air Pollution
Patrick J. Lawther, M.D.

9:45-9:55 a.m. BREAK

9:55-10:10 a.m. Deposition and Clearance of Radioactive Particles in the Human Lung
Roy E. Albert, M.D.

10:10-10:25 a.m. The Geographic Pathology of Chronic Pulmonary Disease
William M. Thurlbeck, M.D.

10:25-10:40 a.m. The Application of these Basic Approaches to Field Studies
R. J. M. Horton, M.D.

10:40-11:45 a.m. DISCUSSION

12:00-2:00 p.m. LUNCHEON, Cocoanut Grove
Air Pollution: A Problem for Human Ecology
Frederick Sargent, II, M.D.

2:00 p.m. Embassy Ballroom
PANEL II:
ENVIRONMENTAL PARAMETERS IN RELATIONSHIP TO HOST RESPONSES
Chairman: Ormond V. Brody, M.D., Ph.D.

PARTITIONING OF ENERGY

2:05-2:20 p.m. Meteorological Aspects
Morris Neiburger, Ph.D.

2:20-2:35 p.m. Biometeorological Aspects of Respiratory Diseases
Solco W. Tromp, Ph.D.

PARTITIONING OF MASS

2:35-2:50 p.m. Airborne Carcinogens
Eugene Sawicki, Ph.D.

2:50-3:05 p.m. Irritants
Morton Corn, Ph.D., and George Burton, M.D.*

3:05-3:10 p.m. BREAK

SELECTING APPROPRIATE BIOLOGIC MODELS

3:10-3:25 p.m. The Germ-free Host
James Reyniers, Ph.D.

3:25-3:40 p.m. Structural Analogues of the Respiratory System
Walter S. Tyler, D.V.M., Ph.D.

3:40-3:55 p.m. The Law of the Initial Values
Joseon Wilder, M.D.

3:55-4:10 p.m. Human Circadian Rhythm
Karl E. Schaefer, M.D.

4:10-5:00 p.m. DISCUSSION

5:00 p.m. SESSION ADJOURNS

5:30-6:30 p.m. RECEPTION, East and West Venetian Rooms
Co-Sponsors: Commission on Community Health Services of the California Medical Association; Los Angeles County Medical Association

THURSDAY, MARCH 3, 1966
EMBASSY BALLROOM

9:15 a.m. **PANEL III:**
BIOLOGIC DETERMINANTS OF LUNG RESPONSES TO AIR POLLUTANTS
Chairmen: Hollis G. Boren, M.D., and Paul E. Morrow, Ph.D.

9:20-9:35 a.m. Surfactant and its Possible Reaction to Air Pollution
Richard E. Pattle, M.A., D.Sc.

9:35-9:50 a.m. Cilia and Mucus Transport as Determinants of Lung Responses to Air Pollutants
Kaye H. Kilburn, M.D.

9:50-10:05 a.m. The Alveolar Macrophage
Quentin N. Myrvik, Ph.D.

10:05-10:20 a.m. Immune Response
Bram Rose, M.D., Ph.D.

10:20-10:30 a.m. BREAK

10:30-10:45 a.m. Tolerance Mechanisms as Determinants of Lung Responses to Injurious Agents
Edward J. Fairchild, II, Ph.D.

10:45-11:00 a.m. Adaptation
Paul E. Morrow, Ph.D.

11:00-12:00 noon DISCUSSION

12:00 noon SESSION ADJOURNS

2:00 p.m. **OPTIONAL TOURS:** Air Pollution and Respiratory Disease Facilities in Los Angeles County. See registration information, inside front cover.

2:00 p.m. Embassy Ballroom
SPECIAL PANEL:
REPORTS FROM CALIFORNIA
Chairman: Francis M. Pottenger, Jr., M.D.

2:00-2:15 p.m. The Effects of Smog Upon the Respiratory System
Oscar J. Balchum, M.D.

2:15-2:30 p.m. The Photochemical Air Pollution Syndrome as Exhibited by the Attack of October, 1965
Walter J. Hamming, Raymond G. Holmes, Robert L. Chass*

2:30-2:45 p.m. Separating Fact from Fiction in Auto Smog Control
Donald A. Jensen

2:45-3:00 p.m. BREAK

3:00-3:15 p.m. What Can A County Medical Association Do About Air Pollution
Francis M. Pottenger, Jr., M.D.

3:15-3:45 p.m. DISCUSSION

3:45 p.m. SESSION ADJOURNS

FRIDAY, MARCH 4, 1966
EMBASSY BALLROOM

8:45 a.m. **PANEL IV:**
ATTEMPTS TO IDENTIFY THE EFFECT OF SOCIAL, ENVIRONMENTAL AND BIOLOGIC FACTORS, AND THE EXTENT OF THEIR INTERACTION BY CLINICAL, EPIDEMIOLOGIC AND LABORATORY MEANS
Chairman: Donald O. Anderson, M.D.

8:50-9:05 a.m. Social and Environmental Factors in the Evolution of Respiratory Disease
J. R. T. Colley and Walter W. Holland, M.D., B.Sc.*

9:05-9:20 a.m. Effects of Social Class on Respiratory Morbidity and Mortality in Buffalo
Warren Winkelstein, Jr., M.D., M.P.H.

9:20-9:35 a.m. Effect of Tobacco Smoking
Thomas L. Petty, M.D.

9:35-9:50 a.m. Air Pollution and Illness in Smokers and Non-Smokers
James R. McCarroll, M.D., Eric J. Casselli, M.D., Doris Wolter, R.N., M.P.H., and Joseph Mountain*

9:50-10:00 a.m. BREAK

10:00-10:15 a.m. Effects of Air Pollution and Meteorologic Factors on Normal Subjects and Patients with Respiratory Disease
William S. Spicer, Jr., M.D.

10:15-10:30 a.m. Effects of Occupation on Respiratory Disease Morbidity
Philip E. Enterline, Ph.D.

10:30-10:45 a.m. Effect of Viral Infections
Richard B. Hornick, M.D.

10:45-11:45 a.m. DISCUSSION

12:00-2:00 p.m. LUNCHEON, Ambassador Ballroom
Sen. Edmund S. Muskie, Guest Speaker

2:00 p.m. Embassy Ballroom
PANEL V:
IMPLICATIONS AND SUMMARY
Chairman: Katharine R. Boucot, M.D.

BIOSTATISTICAL METHODOLOGY FOR EVALUATING HEALTH EFFECTS OF AIR POLLUTION

2:05-2:20 p.m. *Frank J. Massey, Jr., Ph.D.*

2:20-2:35 p.m. *William A. Reinke, Ph.D.*

2:35-2:50 p.m. Discussion opened by *Wilfred J. Dixon, Ph.D.*

CLINICAL IMPLICATIONS OF BASIC RESEARCH IN AIR POLLUTION

2:50-3:05 p.m. *Eugene D. Robin, M.D.*

3:05-3:20 p.m. *David V. Bates, M.D.*

3:20-3:30 p.m. *James W. Raleigh, M.D.*

3:30-3:45 p.m. Discussion opened by *John F. Murray, M.D.*

3:45-4:15 p.m. Summarization of Conference
Lester Breslow, M.D.

4:15-5:00 p.m. DISCUSSION

5:00 p.m. CONFERENCE ADJOURNS

*Denotes speaker

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IN THE AMA ARCHIVES November 1992

3rd AMA CONGRESS ON ENVIRONMENTAL HEALTH PROBLEMS

The Drake Hotel, Chicago, April 4-5, 1966

PROGRAM

MONDAY, APRIL 4, 1966

Grand Ballroom

8:00 a.m. Registration (French Room Foyer)

9:00 a.m. Opening Remarks

9:05 a.m. Purpose of the Congress

9:15 a.m. KEYNOTE:
Accidents—A Preventable Epidemic

10:00 a.m. PANEL I:
The Environmental Health Problem

- Nature and Extent of Accidents
- Factors Affecting Accident Probability
- Relationship of Home Environments to Accidents
- Psycho-Social Influences on Accidents
- Occupational and Rural Accidents

12:00 Noon Discussion

12:45 p.m. Luncheon (Gold Coast Room)

Strategy and Tactics in the Safety War

2:15 p.m. PANEL II:
The Medical Problem

- Types of Vehicular Injuries & Treatment
- Handling of Secondary Complications
- Accidents of Children and the Aged
- Prevention and Treatment of Poisoning
- Recreational Accidents

4:20 p.m. Discussion

5:00 p.m. Adjournment

5:30 p.m. Reception (Gold Coast Room)

TUESDAY, APRIL 5, 1966

Grand Ballroom

9:00 a.m. Pulse of Life—
(A film on artificial resuscitation)

9:30 a.m. PANEL III:
Prevention and Mitigation

- Automobile and Highway Design
- Handling of Emergency Cases
- Regulating and Motivating the Driver
- Elimination of Architectural Barriers
- Role of the Physician in Accident Prevention

11:45 a.m. Discussion

12:30 p.m. Luncheon (Gold Coast Room)

2:00 p.m. PANEL IV:
Accident Research

- Research Design
- Measurement of Human Factors in Accident Research
- Professional Contribution to Data Collection
- The Systems Approach—A Tool for Reducing Vehicle/Highway Accident

3:40 p.m. Discussion

4:00 p.m. Concluding Remarks

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over what had the earmarks of a bright medical future for DMSO. Its best known attributes so far have been its ability to translocate drugs into and through animal systems, and to relieve pain when applied to the skin. Crown Zellerbach produces eight million pounds per year of the industrial grade of the solvent in its plant at Bogalusa La. That plant recently expanded from a capacity of five million pounds per year, supplies the material that is purified to medical grade at Camas. -- Chem. Eng. News 43, 22 (Nov. 22, 1965)

5 New Journal on Pesticide Data.

A new federal journal devoted wholly to collection of environmental pesticide data is almost ready for publication. Reports will be restricted to those dealing with data gathered from air, earth, water, and life by the various monitoring facilities operated by universities, states, and Federal Government. Pesticides Monitoring Journal should appear quarterly, with the first issue dated January. Heading the project is Reo E. Duggan of the Food and Drug Administration's Bureau of Regulatory Compliance. He will serve as chairman of an editorial board made up of representatives of the Departments of Interior, Health, Education, and Welfare, Agriculture, and Defense—all of which comprise the Federal Committee on Pesticide Control. Mr. Duggan says the journal will be modeled somewhat after Radiological Health Data, the Public Health Service's journal. Major source of data is expected to be the Government's recently established interagency monitoring network. -- Chem. Eng. News 43, 27 (Dec. 13, 1965)

6 No Build-Up of Pesticides.

There is no progressive build-up of pesticides in soil, sediment, and water in the Mississippi River Delta, according to Joseph W. Gentry of the Department of Agriculture's Agricultural Research Service. He says that two pesticides widely used for cotton insect control—endrin and DDT—were recovered from fields but after a year of monitoring, evidence indicates that pesticides do not build up even in cotton fields that have received large amounts of pesticides for several years. He also pointed out that trace amounts of benzene hexachloride, aldrin, and dieldrin were recovered from soil, sediment, and water despite the fact that appreciable amounts of these long-lasting pesticides had not been used in the study area for many years. In the U.S. Department of Agriculture monitoring, pesticide residues are measured in soils, sediment, water, crops, livestock, and certain aquatic and land animals.

-- Chem. Eng. News 43, 37 (Dec. 6, 1965)

7 Division of Environmental Sciences.

NSF has established a Division of Environmental Sciences. The new division will be responsible for National Science Foundation programs in support of research in the atmospheric sciences, including aeronomy, meteorology, solar-terrestial interactions, and weather modification; solid earth sciences, including geology, geophysics, and geochemistry; physical oceanography; and the U.S. Antarctic research program. The division will also oversee the scientific program of the National Center for Atmospheric Research at Boulder, Colorado. Head of the new division is Dr. T. O. Jones, formerly head of NSF's office of Antarctic Programs.

-- Chem. Eng. News 43, 27 (Dec. 13, 1965)

COMING EVENTS

Feb. 1-2	Chemical-Toxicological Discussional, Pittsburgh, Pa.
Feb. 2-6	American College of Cardiology, Chicago, Ill.
Feb. 3-9	Congress on Medical Education, Chicago, Ill.
Feb. 6-13	Canadian-American Medical Dental Ski Association (CAMDSA), The Lodge at Vail, Colorado.
Feb. 8-12	American College of Radiology (for members only), Chicago, Ill.
Feb. 9-11	American Academy of Occupational Medicine (for members only), Philadelphia, Pa.
Feb. 10-12	Society of University Surgeons, Milwaukee, Wis.
Feb. 14-17	Medical Society of the State of New York, New York, N.Y.
Feb. 14-18	American Protestant Hospital Association, Dallas, Texas.
Feb. 16-17	Voluntary Health Conference, 2nd National, Chicago, Ill.
Feb. 21-23	American Academy of Allergy, 22nd Annual Meeting, New York, N.Y.
Feb. 23	National Multiple Sclerosis Society, New York, N.Y.
Feb. 27-Mar. 4	International Anesthesia Research Society, (40th Congress) Bal Harbour, Florida.

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LEGAL DEVELOPMENTS

9 Automobile Seat Belt Standards.

With some slight revisions, the automobile seat belt standards announced by the Department of Commerce in December 1964 became mandatory on December 31, 1965. Beginning on that day the manufacture, sale or transportation in interstate commerce of seat belts which do not meet the revised standards will be unlawful. The standards with the revisions were printed in the July 1, 1965 Federal Register. The seat belt standards were developed by the National Bureau of Standards in consultation with the Society of Automotive Engineers and an ad hoc committee of representatives of interested Federal agencies. The standards cover three types of seat belt assemblies: a lap belt, a safety harness for adults, and a safety harness for children.

-- J. Am. Soc. Safety Eng. 10, 20 (Nov. 1965)

10 Public Exposures to Environmental Radioactivity.

An advisory committee on estimating public exposures to environmental radioactivity has been set up by the U.S. Public Health Service. The new committee will advise USPH's Division of Radiological Health on policies and procedures for improving its national program of environmental radiation surveillance. The nine-member committee is headed by Dr. Merril Eisenbud of New York University medical center. -- Chem. Eng. News 43, 27 (Dec. 13, 1965)

11 Antibiotic Contamination of Foods.

A federally sponsored probe of antibiotic contamination of foods is nearing completion. Preparing its final report is a multidiscipline panel headed by Dr. Mark H. Lepper of the University of Illinois medical school. Dr. Lepper's committee, assembled with little fanfare by the Food and Drug Administration about six months ago, is attempting the most extensive study to date of all conceivable health dangers posed by the introduction of increasing numbers of antibiotics into the food processing chain. The report is due early in 1966.

-- Chem. Eng. News 43, 21 (Nov. 29, 1965)

BOOKS, PAMPHLETS AND NOTICES

Correction—The names of the reviewers of Item 1150 and 1151 should be reversed in the last issue of the Digest, i.e., No. 1150 was reviewed by W. Scott Allan and No. 1151 by Dr. Robert T.P. deTreville.

12 Air Conservation: The Report of the Air Conservation Commission of AAAS. James P. Dixon. AVAILABLE FROM: American Association For the Advancement of Science, 1515 Massachusetts Avenue, N.W., Washington, D.C. 20005. 348 pp. (October, 1965). PRICE: $8.00.

The AAAS Committee on Science in the Promotion of Human Welfare asserted in its report of July 1960 that the scientific community "should accept the obligation to determine how new advances in our understanding and control of natural forces are likely to affect human welfare, to call these matters to public attention, to provide for the public and its social and political agencies the objective statements of the facts and of the consequences of alternative policies that are required as the basis for informed decisions on the relative merits of proposed courses of action". The Committee, in its charge to the Commission, referred to the need for the scientific community to assemble facts and to identify alternatives. The Commission met for the first time in the spring of 1962, and its deliberations spanned the next two years. It reviewed available data, solicited and received papers from its members and from other authorities in the fields of air conservation, pollution control, pollutants and their effects, law, economics, meteorology, public health, public opinion, and government. At a hearing in December, 1963, it invited representatives of industry, labor, government, and private agencies concerned with the problem of air pollution to present their points of view. Despite obvious limitations, the Commission believes that the information contained in this report will be of value to scientists, public bodies, and the public during the next several years. The Commission's specific task is completed; but a far greater task now remains for all of us.

-- Cond. from Intro.

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UNITED ALLOYS November 1966

13 Community Perception of Air Quality. An Opinion Survey in Clarkston, Washington. Nahum Z. Medalia. AVAILABLE FROM: U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Air Pollution, Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio. PHS Publication No. 999-AP-10. 106 pp. (June, 1965). PRICE: Not given.

In a community with a population of 7,000 and located approximately four miles downwind from a pulp mill, a public opinion survey was taken to analyze the environmental stress of air pollution on a sample of household heads and spouses, along two principal attitudinal dimensions: awareness and concern. Of those interviewed, 91% perceived air pollution in the community as a malodor problem; 74% perceived it as a problem of visibility; and 62% as a problem of nose-throat irritation. A Guttman-type scale showed high concern with air pollution among 48% of the sample; low to moderate concern among 31%; and minimal concern among 21%. Although exposure to odorous pollutants in ambient air appeared roughly equal for all members of the sample, their concern with air pollution was found to vary directly with social status and attitude characteristics such as civic pride, desire to ameliorate the situation, length of residence in the community, and occupational prestige of the household head. -- Auth. abst.

14 Water Quality Criteria Jack Edward McKee and Harold W. Wolf. AVAILABLE FROM: State Water Quality C ·ol Board, Room 316, 1227 O Street, Sacramento, California, 95814. Publication No. 3-A. pp. Second Edition. (1963). PRICE: $6.50.

Water Quality Criteria was first published in 1952 and proved to be a necessary and exceedingly valuable reference book n the California water pollution control program. An addendum was published in 1954 to bring Water Quality Criteria up to date. In 1957 a second printing was made of the combined original edition and the addendum. This printing was exhausted in a few years. In light of the demand for Water Quality Criteria and realizing the importance of keeping this publication up to date, the State Water Pollution Control Board on July 1, 1960, contracted with the California Institute of Technology for a revised and updated review and evaluation of technical and scientific literature pertaining to criteria of water quality. The project was under the direction of Dr. Jack Edward McKee, Professor of Environmental Health Engineering, and was managed by Mr. Harold W. Wolf, Senior Sanitary Engineer of the U.S. Public Health Service. This report is primarily a survey and evaluation of the literature and a compendium of data on water quality criteria. It does not represent, establish, or recommend specific values for standards, requirements or objectives of water quality for either the State of California or the Public Health Service; nor is it intended to reflect official opinions or policies. -- Cond. from Forward

This report did not come to our attention until passage of the Water Quality Act of 1965. Because of interest expressed in the Foundation's Bulletin on this subject, distributed last month, publication of this abstract is considered merited at this time. The table of contents shows the following listings: Introduction, General Considerations, Water Quality Criteria Promulgated by State and Interstate Agencies, Judicial Expression, Quality Criteria for the Major Beneficial Uses of Water, Potential Pollutants, Biological Pollutants, Radioactivity, Pesticides, and Surface Active Agents. -- RTPdeT

15 Venture In Industry. The Slough Industrial Health Service 1947-1963. A. Austin Eagger. AVAILABLE FROM: Lloyd-Luke, Inc. 49 Newman St., London, W1, England. 193 pp. (1965). PRICE: 25 shillings.

Shortly after the war ended in 1945, the Nuffield Foundation and the Nuffield Provincial Hospitals Trust, of which the late Sir Noel Mobbs, K.C.V.O., O.B.E., was a Trustee, decided to set up an area industrial health service. Its main objects were to be: (1) To promote the health and welfare of all engaged in industry in the locality. (2) To assist in the provision of safe and healthy working conditions by scientific investigation and control of the industrial environment. (3) To provide emergency treatment for sick and injured employees while at work. (4) To provide facilities for rehabilitation of workers disabled by injury or disease. (5) To educate all concerned in the attainment and preservation of health in industry. In Venture In Industry, Dr. Eagger, Medical Director, tells the story of the Slough Industrial Health Service from its inception in 1946 until his retirement on Mar. 31, 1963. The story covers the planning stage of the Service and the methods adopted for the treatment of accidents and sickness in the factories; it describes the organisation and work of the rehabilitation centre and the formation of an occupational hygiene department to investigate and control hazards to health and safety in the industrial environment.

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It is difficult sometimes to assess the success of this type of Service. One measure of its impact may be seen, however, by the following figures. When the Service opened its doors on May 1st, 1947, there were some 50 companies with 6,000 employees who had become Member Firms. On March 31st, 1963, when Dr. Eagger handed over to his successor there were some 300 Member Firms with 27,000 employees. There is little doubt that he had gained the complete confidence of the top executives of all the companies and—what was equally important—the trust of all employees. The Slough Industrial Health Service fared less well, however, as described in an epilogue to Chapter 8. As a result of insufficient income to be self-sustaining, this service was closed effective March 31, 1964, and a highly skilled and experienced team disbanded. The British Government is criticized by the author for allowing loss of such a valued national resource.

-- Cond. from Forward and text

NOTE: Early in 1965, Mr. Singleton, Undersecretary, and Mr. Christy, Chief inspector of Factories, both of the Ministry of Labor, visited Industrial Hygiene Foundation. They were accompanied by Mr. Henry Doyle, Assistant Chief, United States Public Health Service. -- RTP deT

16 1965 National Electrical Code: (NFA No. 70, ASA C1-1965). National Fire Protection Association. AVAILABLE FROM: National Fire Protection Association, 60 Batterymarch Street, Boston, Mass. 02110. 448 pp. (1965). PRICE: $1.00.

The National Fire Protection Association announces availability of copies of the 1965 edition of the National Electrical Code. Recently off the press, the new edition supersedes all previous issues of the Code. The 1965 text includes a substantial amount of new material and extensive revisions of existing material. The Code is of primary importance to all concerned with the installation, operation, manufacture, and design and inspection of electrical wiring and equipment. Installers of heating equipment will be particularly interested in the special provisions for fixed indoor electrical space heating, and a new part of Article 422 on deicing and snow melting installations. Material dealing with electrical installations at gasoline dispensing and service stations has been revised. The article on electrical installations in areas where flammable anesthetics are administered has been editorially clarified. Another companion NFPA text of importance to hospitals is the 1965 revised edition of Essential Electrical Systems for Hospitals (NFPA No. 76—50 cents). Completely new articles in the Code deal with electrical installations in mobile homes and travel trailers. The Code requirements are in harmony with NFPA and ASA standards on the same subjects. There is new guidance on wiring and electrical equipment in and around swimming pools in Article 680.

17 Motor Fire Apparatus. NFPA No. 19. National Fire Protection Association. AVAILABLE FROM: National Fire Protection Association, 60 Batterymarch Street, Boston, Mass. 02110. 82 pp. (1965). PRICE: $1.00.

A newly revised edition of the standard dealing with motor fire apparatus has just been issued by the National Fire Protection Association. The 1965 text has been extensively revised to include coverage of the latest developments in the automotive and fire equipment fields. The revised text, which is the authoritative source on specifications for purchasing all types of municipal fire apparatus, was officially adopted at the 1965 annual meeting of the National Fire Protection Association. It was prepared by the Committee on Fire Department Equipment chairmanned by Walter H. Carter, Chief of the Lynn, Mass. Fire Department. Motor Fire Apparatus (NFPA No. 19), formerly also issued by the National Board of Fire Underwriters as NBFU No. 19, is now available only in the Official NFPA edition.

INDUSTRIAL MEDICAL PRACTICE

18 Old Age Income Security in Canada. J. W. Willard. Can. Med. Assn. J. 93, 801-804 (Oct. 9, 1965).

The position of older people in modern industrial society is markedly removed from the early industrial norm of continued participation in gainful employment until the end of life. Acceptance of a retirement age some 13 years before the end of average male life expectancy has brought with it serious social problems. At the same time, however, an increasingly productive economy has provided both the willingness and ability to complement the retirement provisions of individual

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initiative with public programs of old age income maintenance. This public support began in Canada with the voluntary approach embodied in the government annuities plan. A program of "public assistance" followed. These were succeeded, first, by the "universal payment" under the Old Age Security Act and, more recently, by the social insurance approach of the Canada Pension Plan. Along with improved public support, the role of occupational pension plans and of individually initiated retirement provisions continues to be substantial. Current interest in, and in some cases legislation on, such problems as vesting and solvency are leading to improvements in private pension programs. -- Auth. abst.

19 The Early Detection of Aging. E. W. Busse. J. Occ. Med. 7, 494-500 (Oct. 1965).

The early detection of age changes is particularly important to the industrial physician, who has a dual responsibility: he is charged with the health and welfare of the individual, as well as the efficiency and wellbeing of a group of workers. Of particular interest are alterations in perception and psychomotor response times, as well as the possibility of decline in the thinking processes. Intellectual skills are lost to a significant degree in the poorly educated, whose occupations place them in a lower socioeconomic status. This is in marked contrast to the elderly person who has had better than average intelligence throughout his life span. The intellectual losses are greatest in those individuals who can least afford such declines. It is recommended that the industrial physician, with the help of educators and other interested persons, attempt to develop plans to counteract the intellectual losses suffered by the employees in the lower socioeconomic group. There are numerous physiological changes that effect performance. When such losses are of sufficient magnitude to require that the individual be shifted to a different task, it is essential that the individual's self-esteem be given primary consideration. Efforts must be continued to provide methods whereby the individual who is relieved of one task can be shifted to another without the loss of prestige or self-respect. -- Auth. sum.

20 Rehabilitation of the Aged. E. D. Sherman and G. Gingras. Can. Med. Assn. J. 93, 797-800 (Oct. 9, 1965).

The rehabilitation needs and goals of older people differ in many respects from those of the young. In younger individuals a crippling condition may affect an otherwise healthy body, while in an older person it may be superimposed on other pre-existing degenerative diseases. Thus, in older patients the restorative or rehabilitative phase rarely can be separated from the phase of definitive medical treatment. The primary goal of rehabilitation of younger individuals is usually vocational. In the older group this goal or objective is, by and large, secondary. This does not minimize, however, the value of medical and social services in the rehabilitation of older persons. The simple ability to care for his own personal needs can do much to help the elderly disabled patient regain his dignity and self-respect and remove his fears of becoming a burden on his family or society. -- Auth. abst.

21 Psychiatric Aspects of Aging. V. A. Karl. Can. Med. Assn. J. 93, 792-796 (Oct. 9, 1965).

Psychotic conditions due to structural brain disease of the senile and arteriosclerotic type are numerically less important than was formerly assumed. They account for about 25-30% of the psychiatric illnesses of the aged. Functional psychoses, particularly endogenous depressions, form an important part of these disorders. Their symptomatology and treatment are not essentially different from those of functional psychoses in the younger age groups. Among non-hospitalized old people, neurotic conditions represent the most frequently encountered type of mental disorders. Psychodynamic factors, operative in the older as well as the younger generations, and their interplay are responsible for the neurotic conditions of the elderly. These respond favorably to psychotherapy. Severe acute and subacute confusional states are caused in some aged people by physical and psychological stresses. These conditions have a serious prognosis but are amenable to proper treatment when diagnosed in time. They are the responsibility of the general practioner and the general hospitals. -- Auth. abst.

22 Psychiatric Consultation in an Intensive Care Unit. A.J.R. Koumans. J. Am. Med. Assn. 194, 633-637 (Nov. 8, 1965).

The principles of "community psychiatry" are applied to psychiatric consultation in an intensive care unit (ICU). In a year's consultation, an effort was made to meet the stated needs for emotional support of the nursing staff by regular group meetings. From these, and observation of the ward's function, it became clear that two factors were responsible for most recurring crises

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in the ICU: (1) the rapid turnover of its entire population, and (2) the affective intensity of their interactions. The group meetings and the daily informal contacts on rounds with the medical staffs were structured to neutralize these two factors, as were interventions with individual patients. Using this technique, crisis-prevention become possible and was effective. -- Auth. sum.

23 The Clergy and the Mental Health Professions: The First Samuel H. Prince Memorial Lecture. F. C. R. Chalke. Can. Med. Assn. J. 93, 1167-1171 (Nov. 27, 1965).

In this lecture, as a tribute to the late Samuel Prince, founder of the mental hygiene movement in the Maritime Provinces, the rapprochement between the clergy and mental health profession is discussed. A brief survey of the historical background of the churches' approaches to mental disorder leads to consideration of subjects of present mutual concern. Spiritual and emotional development, responsibility and guilt, law and freedom, psychic structure and sanctity, sexuality, and symbolic representation are among the areas which demand intelluctual exploration in depth, jointly, by theologians and social scientists. The need is outlined for training parish clergy to carry out their role in ameliorating emotionally damaging social conditions and of educating and counselling parishioners. -- Auth. abst.

24 Treatment of Alcoholic Withdrawal States With Chlordiazepoxide. M. J. Short and W. J. Moore. Military Med. 130, 1203-1206 (Dec. 1965).

Chlordiazepoxide was administered for treatment of acute symptoms of alcohol withdrawal to 63 hospitalized patients, 14 of whom were hospitalized on more than one occasion, which brought the total number of admissions to 81. Ages ranged from 30 to 62 years and all but three of the patients were male. In addition to withdrawal symptoms, psychiatric disorders in 30 patients included acute and chronic brain syndrome due to alcohol, schizophrenia, passive-aggressive personality, grand mal epilepsy, anxiety reaction and others. Chlordiazepoxide was given intially at the time of admission in doses of 100 to 200 mg. parenterally. If necessary, this dose was repeated after three hours and again after six hours. The drug was given orally in doses of 20 mg. four times a day to most patients on the second day and daily thereafter in gradually diminishing doses. Duration of therapy ranged from two to 11 days. Response was rated as excellent in 53 patients, fair in ten, and poor in 18. Chordiazepoxide was most effective when no major underlying psychiatric disorder was present. In one, a rash developed after one day of therapy and the drug was discontinued. Nausea occurred in one patient who continued to take the medication. Results of laboratory tests revealed no evidence of untoward effects to any organ despite the massive doses of chlordiazepoxide administered to some patients. Based on its effectiveness in controlling withdrawal symptoms and freedom from serious side reactions in the present study, chlordiazepoxide appears to be one of the most valuable medications available for management of the alcoholic patient requiring therapy for withdrawal symptoms. -- Auth. sum.

25 The Lonely Chronic Alcoholic. E. Podolosky. J. Occ. Med. 7, 521-522 (Oct. 1965).

The lonely alcoholic schizoid is characterized by the following: (1) He avoids establishing and maintaining close and intimate relationships, feeling danger in closeness to others. He feels threatened and fearful and, because he is unable to give vent to his feelings of hostility (either directly or indirectly), bottles up his aggressive feelings finding relief from the resulting intolerable sensations in drinking. (2) He is a cold, aloof, emotionally detached person. He cannot let himself go, is thoroughly inhibited and constricted in his emotional displays, and almost always full of fears. He feels weak and avoids competition. Because of this he must find an outlet, an emotional safety-valve, and this he finds in alcohol. (3) He has daydreams, almost constantly around the need for omnipotence, to compensate for his feelings of inferiority and inadequacy. Alcohol seems to loosen his daydreaming mechanisms and provides a temporary escape into a world of false security. (4) He is introverted, lives in his own private little hell and drinks to make this more bearable. He is narcissistic, and at times this becomes unbearable: drinking helps to smooth over such intervals. At times he has feelings of depersonalization, feeling outside of himself, looking at himself, but he finds what he sees unpleasant and disgusting. Drinking at such times helps. The lonely alcoholic resorts to alcohol to escape from any or all of these feelings when they become too oppressive, and often they become unbearable. He has found that alcohol for a time, however short, offers some degree of emotional equilibrium. -- Auth. sum.

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26 The Anatomy, Physiology, and Psychology of Pain. A. H. Thomson. J. Occ. Med. 7, 526-534 (Oct. 1965).

The anatomic pathways for the reception, conduction, perception, and appreciation of pain impulses are discussed. The physiology of the perception, conduction, and appreciation of pain impulses is discussed in relation to nerve-fiber size, ascending multisynaptic chains, and hierarchical levels within the central nervous system. The great variability in the appreciation of and emotional response to pain is discussed in reference to upbringing, culture, etc. Objectives of treatment and modes of action of pain-relieving drugs are briefly reviewed. There are 22 references. -- Auth. sum.

27 De Quervain's Disease. T. A. Lamphier, Carolyn Crooker, and J. L. Crooker. Ind. Med. & Surg. 34, 847-856 (Nov. 1965).

De Quervain's disease has variably been discribed as a stenosing tendovaginitis, or tenosynovitis, of the common synovial sheath which encompasses both the abductor pollicis longus and extensor pollicis brevis tendons as they course through the radial carpal tunnel. The distressing debility of the thumb concomitant to this disease first drew the attention of a Swiss surgeon working in the Bern Klinik. It was in 1895 that Fritz De Quervain diagnosed and reported on five cases with the condition now bearing his name. Its more common occurrence among persons who perform manual work, such as household servants, weavers, typists, and nurses, suggests a pattern to its onset. De Quervain, in his second published report of an additional eight cases, attributed the most frequent exciting cause to "overexertion from household duties." De Quervain's disease, recognized as a traumatically-induced occupational disease, is a progressively disabling condition of the hand at the thumb and wrist joints. Although frequently unrecognized, it should be considered in the differential diagnosis of persistent pain at the base of the thumb near the radial styloid. While more common in women, it is readily and permanently alleviated in both sexes by a surgical technique which leaves intact the superficial branch of the radial nerve. As surgery is the only procedure which elicits immediate and complete cures, it should be emphasized that more conservative methods afford only intermittent relief from pain with continued disability and economic loss of many man hours. There are 29 references.

28 An Immediate Skin Test for the Diagnosis of Active Pulmonary Tuberculosis. H. Glenchur, B. E. Fossieck, Jr., and M. Silverman. Am. Rev. Resp. Dis. 92, 741-748 (Nov. 1965).

Mycobacterium tuberculosis (H37 Ra) bacillary extract can be separated by column chromatography under near physiologic conditions. One of these fractionated products (I_7) was assayed as a potential immediate skin-test antigen for diagnosis of and screening for active tuberculosis. One hundred and six patients with active pulmonary tuberculosis were tested, and a positivity test rate of 90.6% was obtained. The time of onset of the positive reactions suggested an Arthus' phenomenon. Sixty-one control patients (both PPD-negative and-positive) were all negative to this test. It is suggested that this is a promising avenue of approach for the perfection of a sensitive test for tuberculous activity. -- Auth. sum.

29 Effects of Early Comprehensive Rehabilitation Services in Tuberculosis. An Interagency Experimental Study. F. J. Moore. Am. Rev. Resp. Dis. 92, 749-757 (Nov. 1965).

A prospective study was carried out in 156 tuberculous patients of the San Fernando (demonstration group of 95 patients) and San Gabriel (comparison group of 61 patients) valleys of Los Angeles County during the two years after they were first permitted two hours' exercise (base line). Extensive medical, social, psychologic, educational, and vocational data were collected before base line and during the study. In both groups, and in the sample as a whole, tuberculosis had a socioeconomic crippling effect. This is attributed to psychosocial or motivational, rather than medical impairments. The question is raised as to what role sanatorium acculturation may play in causing these impairments and whether new treatments may not make such acculturation unnecessary. Because, from the nature of the situation, it was not possible to set up a rigid experimental design, only broad inferences are permissible. Nevertheless, it appears that the demonstration group achieved lower unemployment and relief rates because the communications were better in the environment in which they were maintained. -- Auth. sum.

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30 Pulmonary Tuberculosis and Carcinoma of the Lung. A Survey from Two Population-Based Disease Registers. Ruth Steinitz. Am. Rev. Resp. Dis. 92, 758-766 (Nov. 1965).

The disputed relationship between pulmonary cancer and pulmonary tuberculosis was investigated epidemiologically in Israel, using information from two population-based disease registers and other countrywide data. The risk of tuberculous patients' developing pulmonary cancer seemed to be of the same magnitude as for heavy smokers in males, and to be even greater in females. Male tuberculous patients were found to have an excess mortality from cancer attributable to pulmonary cancer alone. The results of both morbidity and mortality studies were consistent in demonstrating that male tuberculous patients were a fivefold risk and females a tenfold risk of developing pulmonary cancer. Further investigation, involving international cooperation, is recommended. -- Auth. sum.

31 Telemetric Electrocardiography. C. T. Cerkez, G. C. Steward, and G. W. Manning. Can. Med. Assn. J. 93, 1187-1199 (Dec. 4, 1965).

By means of a satellite transmitter nearby the subject an electrocardiogram can be obtained by telemetry in a hospital electrocardiographic (ECG) laboratory from an area of approximately 20 miles in diameter within the city of London, Ontario. The technique employed in this preliminary trial produced excellent tracings, quite comparable to tracings obtained using the same leads with direct recording. Ninety-four trials were performed on 63 subjects, 37 of whom were patients with a suspected or known myocardial abnormality. A normal group of 26 healthy subjects, 16 of whom were strenuously exercised on a bicycle ergometer to the point of physical exhaustion, were also studied. Monitoring patients during ordinary daily activities has proved extremely useful in the detection and diagnosis of cardiac arrhythmias, intermittent conduction disturbances, latent coronary artery disease, and asymptomatic heart disease. There are 34 references. -- Auth. abst.

32 Reagent-Strip Method of Blood Glucose Determination. Evaluation in an Industrial Population. R. E. Joyner. J. Occ. Med. 7, 512-515 (Oct. 1965).

The Dextrostix reagent-strip method of blood glucose determination has been evaluated in an industrial medical department laboratory. Results indicate that the test is suitable for application in an occupational health program and that it possesses the advantages of speed, convenience, patient comfort, low cost, and reasonable accuracy. It should not (nor is it designed to) replace conventional precise methods. -- Auth. sum.

33 Spondylolisthesis and Trauma. A. Soren. Ind. Med. & Surg. 34, 917-921 (Dec. 1965).

Spondylolisthesis is a slow sliding of a lumbar vertebra and should be distinguished from a sudden fracture dislocation. Nevertheless, the possibility that a single trauma or repeated stresses may elicit spondylolisthesis in cases of congenital variations or pre-existent anatomical alterations cannot be denied. This question acquires medico-legal importance in all suits in which the claim has been filed that a specific trauma or certain strains at work have produced sliding of a vertebra. The decision has to be made individually in each case by correlating the case history with the roentgenograms. The implicated forces have to be acknowledged at least as contributory factors when pretraumatic and posttraumatic roentgenograms are available and reveal alterations of a vertebra before the accident and sliding of the vertebra after the accident. There are 17 references. -- Auth. concl.

34 The Smoking Enigma. J. Keays. Can. J. Public Health 56, 105-108 (March, 1965).

Local and national efforts to warn the populace about the health problems associated with smoking are reviewed. The effect of information programs are discussed briefly and progress is cited. The author emphasizes the need for activity at the local level with leadership and health education provided on the national level by the Public Health Service. He advocates that people in the medical profession, health educators, and especially Public Health personnel are obligated to set an example by not smoking. -- Pub. Hlth. Eng. Abst.

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35 Smoking in Relation to Atherosclerosis of Coronary Arteries. O. Auerbach, E. C. Hammond, and L. Garfinkel. New Engl. J. Med. 273, 775 (Oct. 7, 1965).

A study of smoking in relation to atherosclerosis of the coronary arteries was conducted in 1,372 male autopsy cases, with death resulting from causes other than coronary heart disease. The protocols, covering a five-year period, were uniform in examination and description technique. Review of the records and microscopic sections, without knowledge of smoking habits, was performed by the senior author. Smoking histories remained in the possession of the American Cancer Society. The findings indicated that the percentage of men with an advanced degree of coronary atherosclerosis was higher among cigarette smokers than among nonsmokers and increased with the amount of cigarette smoking. In all cases, the percentage of advanced coronary atherosclerosis increased with age. -- J. Am. Med. Assn. Ref. & Rev.

36 Second Pulmonary Neoplasms Among Long-Term Survivors of Lung Cancer. Katharine R. Boucot, W. Weiss, and D. A. Cooper. Am. Rev. Resp. Dis. 92, 767-774 (Nov. 1965).

Two men developed second pulmonary neoplasms eight and one-half years after resection of their first lung cancers. Although it was difficult to determine whether the second lesions were second primaries or metastatic, certain findings suggest that the second carcinomas were both primary. There was a difference in the histolgic type of the two neoplasms in one case; and, in both cases, the origin of the second tumor appreared to be in bronchial mucosa. Of the six men with bronchogenic carcinoma who survived nine or more years, three were still alive nine to ten and one-half years after entry into the study. Two of these three men had had their neoplasms resected. Ten references are listed. -- Auth. sum.

37 Distribution of Polonium-210 in Pulmonary Tissues of Cigarette Smokers. J. B. Little, et al. New Engl. J. Med. 273, 1343-1351 (Dec. 16, 1965).

The alpha-emitting radioactive isotope polonium-210 present in cigarette smoke was found in higher concentrations in lung parenchyma, peribronchial lymph nodes and bronchial epithelium of 25 persons currently smoking cigarettes than in those of eight nonsmokers. From its distribution within the lung, certain characteristics of the pulmonary deposition and clearance of inhaled cigarette smoke may be determined. The clearance of the majority of smoke particles appears to be rapid and to occur primarily by way of the bronchi, but absorption of polonium-210 into bronchial epithelium does occur. By far the highest local concentrations of polonium-210 were found in bronchial epithelium from segmental bifurcations, and with continual exposure to the isotope, as experienced by cigarette smokers, the cumulative local radiation dose to the small regions of bronchial tissue may be quite high. On the basis of these results, polonium-210 may be an important factor in the initiation of bronchial carcinoma in man. There are 20 references. -- Auth. sum.

38 Immunoglobulins in Mink Ranchers Associated With Aleutian Disease. R. C. Williams, Jr., L. P. Williams, Jr., and F. A. Wollheim. J.Am.Med. Assn. 194, 605-608 (Nov. 8, 1965).

Aleutian disease (AD) is characterized in mink by marked hypergammaglobulinemia; plasma-cell infiltration of liver, kidneys, and lymph nodes; and terminal bleeding tendency. A survey of fur-farm associates was prompted by a report of a fatal illness, similar in some clinical and pathological aspects to AD, in a mink rancher. Particular attention was directed toward quantitative measurement of immunoglobulins IgG, IgA, and IgM as an index of possible subclinical AD infection. No distinct immunoglobulin abnormalities among the fur-farm associates were uncovered when compared to controls matched for age and sex. Since the presumed infectious agent has not yet been isolated or characterized, direct serologic testing for specific AD antibody among mink handlers cannot yet be evaluated. -- Auth. abst.

39 The Elusive Source of Psittacosis is in the Arctic. J. A. Hildes, et al. Can. Med. Assn. J. 93, 1154-1155 (Nov. 27, 1965).

Eskimos and Arctic Indians have a high incidence of psittacosis antibodies. The following Arctic birds were therefore examined in an endeavor to find the reservoir of infection: snow geese in their Arctic nesting grounds; migrating geese in the spring and in the fall; ptarmigan, raven, and snow bunting on the Arctic Circle in the late winter. Psittacosis virus was not recovered from any of the birds examined, but a percentage of migrating geese had psittacosis antibodies. The source of human and avian antibodies in the Arctic remains elusive. -- Auth. abst.

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40 A Starling Roost as the Source of Urban Epidemic Histoplasmosis in an Area of Low Incidence. D. J. D'Alessio, et al. Am. Rev. Resp. Dis. 92, 725-731 (Nov. 1965).

An urban epidemic of histoplasmosis occurred in Mason City, Iowa, during the fall of 1962. The source of the fungus, proved by recovery of the organism from the soil, was starling roost in the center of town from which all vegetation was cleared, using bulldozers and other heavy equipment. To study the effects of this source on the population, 3,061 school children and over 400 adults were skin tested with histoplasmin; chest films were obtained on those who reacted, and blood was drawn from a randomly selected sample of these reactors for complement-fixation tests. Twenty-eight persons were accepted as having clinical histoplasmosis. There were two deaths attributable to the infection in this group. Twenty-nine percent of the children reacted to the histoplasmin, and there was a striking, direct correlation between the percent of reactors and the distance of their residence from the source of the epidemic. Among the reactors, 39% of the adults and 69% of the children had positive complement-fixation tests for histoplasmosis, indicating that most of the infections were of recent onset. From a single source, there apparently was widespread dissemination of the fungus throughout the community, which had had little previous experience with the organism. There are 14 references. -- Auth. sum.

41 Q Fever in Alberta—Infection in Humans and Animals. F. A. Herbert, et al. Can. Med. Assn. J. 93, 1207-1210 (Dec. 4, 1965).

The presence of Q fever antibodies in the milk of cattle in Alberta is described. The incidence of positive milk samples rose from 0.8% of herds tested in 1959 to 7.7% in 1964. The largest number of infected animals is in the southern part of the province. A case of Q fever in an infant is reported. This occurred on the Duffield Indian Reserve in Edmonton, in November 1963. Two of 44 blood samples collected at random from asymptomatic individuals on the Reserve in February 1965 contained complement-fixing antibodies to Q fever antigen. Studies on milk from dairy cattle in the area were negative for Q fever antibodies, and the source of human infection has not yet been determined. There are 33 references. -- Auth. abst.

42 Severe Tetanus: Its Complications and Management. I. E. Purkis and J. E. Curtis. Can. Med. Assn. J. 93, 1200-1204 (Dec. 4, 1965).

When phenothiazines and barbiturates fail to control the spasms of tetanus, total paralysis induced by muscle relaxants may be the only way of keeping the patient alive. The hazards of this technique are illustrated in this report of a patient with severe tetanus who was totally paralyzed for 26 days. Cardiac arrest, ileus, atelectasis, anemia, and limb contractures were among the problems dealt with. Devoted nursing care, an experienced medical team, respirators, minute ventilation meters, an airway pressure alarm, a hypothermia unit, a cardiac monitor pacemaker and facilities for determining blood-gas tensions were all necessary in the successful treatment of this patient. It is suggested that patients with severe tetanus should be transferred, under anesthesia and artificially ventilated, to hospitals possessing all these facilities. There are 14 references. -- Auth. abst.

43 Death from Bowel Obstruction Due to Intragastrically Administered Kaolin. E. M. Boyd, E. L. Covert, and M. N. Shanas. Ind. Med. & Surg. 34, 874-880 (Nov. 1965).

Intragastric administration of kaolin suspensions produced death by regurgitation and aspiration asphyxia, by gastric rupture, and by bowel obstruction in young male albino rats. Death from aspiration and gastric perforation varied with technique and was not studied further. The ED_{50} ± S.E.* producing death from bowel obstruction was 149 ± 17 g./kg. The interval to death from bowel obstruction was 43 ± 15 hours. At autopsy, bowel obstruction was further advanced along the small bowel the greater the dose of kaolin. There was a significant gain in weight of most parts of the gastrointestinal tract, a loss of weight in skin and spleen, a stressor response in the adrenal and thymus glands and water retention in several organs. When kaolin was impacted in the stomach, it produced necrosis particularly of the stratified squamous epithelium and muscularis externa along with marked inflammation. As kaolin entered the intestine, it became impacted in pellets which acquired a mucous coating and produced less necrosis the further they advanced. Behind the obstruction, the mucosa was quickly restored under a blanket of mucus. The cause of death was respiratory failure following circulatory stasis induced by bowel obstruction. These signs began to disappear in survivors as kaolin was eliminated in feces and autopsy at two weeks and one month revealed few or no signs of residual toxicity. There are 16 references. -- Mod. Auth. sum.

NOTE: Rats and mice are generally recognized not to be able to regurgitate. -- P.G.

*ED_{50} ± S.E. in this report refers to lethal dose for 50% of animals (LD_{50}) due to bowel obstruction, with Standard Error (S.E.).

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44 The Pathogenesis of Chronic Bronchitis and Emphysema. C. H. Stuart-Harris. Scot. Med. J. 10, 93-107 (March, 1965).

It has been remarked that the attitude of the medical profession toward chronic bronchitis has undergone a profound change in the past 15 years. Instead of neglect there is now much interest in both the diagnosis and the treatment of the many sufferers among the population. This paper is concerned with taking stock of the present knowledge concerning the pathogenesis of this condition and to a consideration of the role of possible causative factors in the production both of anatomical lesions and of physiological abnormalities. The subject is discussed under the subject headings of: Definition of chronic bronchitis, definition of emphysema, differentiation of chronic bronchitis and emphysema, causative factors in chronic bronchitis, smoking, atmospheric pollution, infection, heredity, and occupation. -- APCA Absts.

45 The English Disease. W. K. C. Morgan. Maryland State Med. J. 14, 79-80 (March, 1965).

Chronic bronchitis has acquired a certain notoriety as a cause of considerable mortality and morbidity in England—hence the name of "English disease"—and to a much lesser extent in the United States and Western Europe. Twenty years ago a diagnosis of chronic bronchitis was meaningless to most physicians in the United States. Now, with the more adequate dissemination of medical knowledge, this disease is described, if a trifle sparsely, in recent editions of the standard textbooks of medicine used in this county. The disease characteristically affects male cigarette smokers living in urban communities. Many studies have been made of bacterial and viral infections as causes of acute exacerbations of bronchitic state. In one such study (Carilli, 1964) evidence was presented of an antecedent viral infection preceding the exacerbations in about 50% of their subjects. Thus it seems that viral infections can damage the bronchial mucosa and allow secondary bacterial infection to occur. It would seem probable that air pollution can act in a similar fashion. The author concludes by noting that it can be readily seen that the English have no monopoly on this disease and that it is becoming an increasing problem throughout the Western world. Air pollution and cigarette smoking can contribute to chronic bronchitis no matter what one's nationality. -- APCA Absts.

SKIN DISEASES AND BURNS

46 Delayed Quadriplegia Following Electrical Burn. F. E. Jackson, R. Martin, and R. Davis. Military Med. 130, 601-605 (June, 1965).

A case of delayed quadriparesis following an electrical injury of 75,000 volts, is reported with a gross and histopathological description of the spinal cord. In the case reported, there was very little evidence of arteritis and no evidence of a direct trauma nor infection causing the patient's death. Rather there was only severe edema and swelling with minimal perivascular infiltrate and occasional polymorphonuclear cells and sporadic evidence of intravascular thrombosis. -- Auth. sum.

47 Acute Burn as a Catastrophic Illness. T. G. Blocker, Jr. Bull. Am. Coll. Surgeons 50, 141 (July-Aug. 1965).

In the past 20 years, more than 30 million persons in this country have received burns serious enough to incapacitate them for work or to require medical treatment. In those patients with a strong ego in whom marked disfigurement occurs, rehabilitation may be impossible, particularly if compensation for burn injury is a factor. The acute burn will usually require a minimum of three weeks in preparation for grafting and 12 to 14 days between grafts. In patients with a burn of less than 20% of the body surface, approximately six weeks is the average hospitalization. Burns of 20-50% usually require nine to ten weeks in the hospital. Third degree burns can be expected to require twice the time to heal, as compared with second degree burns of equivalent extent; however, when the lower extremities are affected, the healing time may be increased considerably. -- J. Occ. Med. Absts.

48 Burn Shock and Extravascular Sodium Deficiency—Treatment with Ringer's Solution with Lactate. C. A. Moyer, H. W. Margraf, and W. W. Monafo, Jr. Arch. Surg. 90, 799 (1965).

Experimental evidence is presented to demonstrate that physical-chemical alterations in thermally injured skins cause the taking-up of large quantities of salt and water and thus could be a major cause of burn swelling and burn shock. It might be that increased absorption of water and salt by thermally injured macromolecules is the cause of burn swelling rather than increased capillary

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permeability. The history of the treatment of burn shock, going back a hundred years, begins with saline administration in the 1830's and 1850's and plasma administration in the 1870's and 1940's, but experiment has not shown that a colloid solution is superior to saline, but the contrary. Evidence is given that an iso-osmolar sodium deficit is the biologically important internal environment in the genesis of burn shock, and that oligocythemia and polycythemia are not. In ten cases of 30% to 85% deep burns, shock was successfully treated by giving Ringer's solution (with lactate at pH 8.2), fast enough to keep the patient comfortable, producing urine and becoming oriented but not so as to raise the central venous pressure (such infusions were often at a rate of over a liter per hour). In no case did pulmonary edema occur, or renal insufficiency, even though hemoglobinuria was seen. Tracheostomy was not needed even though several patients had deep neck and face burns. According to the authors, no colloid or blood is required for the successful treatment of shock associated with burns covering up to 85% of the body. -- Can. Med. Assn. J. Absts.

49 Treatment of Large Human Burns with 0.5% Silver Nitrate Solution. C. A. Moyer, et al. Arch. Surg. 90, 812 (1965).

When burned skin is infected, treatment by elaborately controlled baths to prevent pain, allow limb movement, prevent loss of fluids and electrolytes and allow the painless removal of eschar, leads only to overwhelming infection. The use of antibiotics and a number of antiseptics has not prevented the onset of severe infection in large deep burns. The authors report that vaporization heat losses and wound infections are kept to a minimum in burns of over 40% when continuously wet dressings of 0.5% aqueous solution of silver nitrate are used. Body weight can be maintained by a regular hospital diet within 10 or 15% of preburn weight during the 100 days required to resurface the wounded skin. The dressing is as satisfactory as homografts, and argyria did not occur in cases so treated up to 120 days. This concentration of silver nitrate is effective in preventing the growth of pathogenic bacteria but does not interfere with epithelial proliferation if the wound surface is cleaned of greases, dead epidermis and dermis. Using the Castroviejo dermatome, thin autografts may be taken from donor sites, similarly covered by the silver nitrate dressings every 18 to 20 days, for successful covering of unifected granulations. Anemia was not a problem in burns of less than 50% using the silver nitrate as described. In the series of patients with 40% to 90% burns, the mortality was 33% as compared to the 81% mortality attributable to sepsis. Complications such as Curling's ulcer did occur, and sodium and potassium depletions must be controlled since 0.5% silver nitrate is hypotonic.

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

50 Contact Dermatitis Due to Formaldehyde in Clothing Textiles. S. E. O'Quinn and C. B. Kennedy. J. Am. Med. Assn. 194, 593-596 (Nov. 8, 1965).

Formaldehyde resins are widely used in the textile industry in textile finishing. Many wrinkle-proof crease-resistant, and water-proof fabrics have been treated in this manner. Contact dermatitis due to formaldehyde contained in textiles has been reported from the European countries but no authenticated cases have been reported in the United States. This report describes three patients with allergic contact dermatitis due to formaldehyde contained in wearing apparel. The patients had positive patch tests to formaldehyde and to samples of textiles shown by chemical analysis to contain formaldehyde. There was correlation between the outbreaks of dermatitis and the use of formaldehyde-containing fabrics. -- Auth. abst.

51 Management of Dermatoses Peculiar to Negroes. J. A. Kenney, Jr. Arch. Dermatol. 91, 126 (1965).

The compilation of a statistical list of the 12 most common dermatoses was gathered from a group of 3,860 consecutive Negro patients observed in practice. Atopic dermatitis was the predominant disease in the Negro patients; this was followed in descending frequency by fungus, acne, pityriasis rosea, eczematoid dermatitis, pyoderma, seborrheic dermatitis, dermatitis venenata, urticaria, warts, drug eruptions, and vitiligo. The frequency of epithelioma, neurodermatitis, psoriasis, and keratosis did not exceed more than 1% in each disease category. Acne, warts, and psoriasis were less in frequency than would be present in a white group.

-- J. Occ. Med. Absts.

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CHEMICAL HAZARDS

52 The Hazards of Painting and Varnishing 1965. R. Piper. Brit. J. Ind. Med. 22, 247-259 (Oct. 1965).

A review of paint hazards is made, giving brief descriptions of methods of application in use in 1965, of paint usage according to resin base, and of paint ingredients. The most interesting and complex of these are the resin bases, which have much common with plastics. Reference is made to some of the many minor ingredients. The problem of keeping abreast of the possible toxic effects, so that paint manufacturers and their customers may be warned and protected, will be clear. -- Auth. abst.

53 Carbon Dioxide Removal From Air by Adsorbents. C. J. Major, B. J. Sollami, and K. Kammermeyer. Ind. Eng. Chem., Process Design Develop. 4, 327-333 (July, 1965).

Studies are reported on the use of activated carbon and Linde Molecular Sieves as carbon dioxide adsorbents. Carbon is quite insensitive to water vapor in air-carbon dioxide mixtures. Cycling for 300 periods gave unchanged performance. Screening results on a variety of carbons, equilibrium and cycling data, and pressure drop correlations are given. The use of activated carbon for carbon dioxide removal in spacecraft cabins merits attention. -- Pub. Hlth. Eng. Absts.

54 The Effects of Chlorine Gas on the Lungs of Rats Without Spontaneous Pulmonary Disease. D. P. Bell and P. C. Elmes. J. Pathol. Bacteriol. 89, 307-317 (Jan. 1965).

The experiments were planned to show the effect on specific pathogen free (SPF) rats, aged 14 weeks, of light exposure to chlorine (40 ppm for three hours a day for a total period of 43 hours), and whether such exposure altered the response to a heavy exposure to chlorine (117 ppm for three hours a day for total exposures of 29 1/4 and 31 3/4 hours, depending on deaths) at the age of 30 weeks. The lung histology of the SPF rats has been compared with that of rats suffering from chronic pulmonary disease kept under ordinary laboratory conditions. They differ mainly in the appearance of the bronchi and peribronchial tissues; the SPF animals show very few goblet cells and no lymphoid cuffing, whereas diseased animals show a progressive proliferation of goblet cells, cuffing of the bronchi by lymphocytes and hypertrophy of the lymphoid follicles. The SPF animals tolerate higher doses of chlorine than the diseased animals and when mucus asperation occurs there is no polymorphonuclear reaction, although residual scarring is produced. Histologically, after exposure to chlorine the lungs of the diseased animals show changes that resemble human chronic bronchitis more closely than do the lungs of SPF animals after similar exposure. This suggests that the human disease, may be due to a mycoplasma infection. -- APCA Absts.

55 Studies in Lead Poisoning. Comparison Between Different Laboratory Tests. K. Cramér and S. Selander. Brit. J. Ind. Med. 22, 311-314 (Oct. 1965).

The urinary output of delta-aminolaevulic acid (ALA), coproporphyrins, and lead in 15 lead-intoxicated workers was determined and correlated with the degree of intoxication. Raised levels of ALA in the urine show the best agreement with clinical evidence of intoxication. In addition these values were correlated with the amount of lead excreted after treatment with a total dosage of 9 g. pencillamine. Weak correlations were found between therapeutically excreted lead and initial values for lead and coproporphyrin in urine. In contrast the initial values for ALA correlate very closely ($P < 0.001$). It is concluded that determinations of the output of ALA are to be preferred in the evaluation of lead intoxication and that they point directly to the amount of metabolically active lead in the organism. -- Auth. abst.

56 Further Observations on the Mechanical Fragility of the Red Cell in Lead Poisoning. A. J. DeKretser and H. A. Waldron. Brit. J. Ind. Med. 22, 315-316 (Oct. 1965).

Further experiments on the effects of lead on the mechanical fragility of the red cell confirm previous findings, that lead does not increase the mechanical fragility index of the red cell at the blood lead levels found in clinical plumbism. Above these levels lead does increase the mechanical fragility index, reaching its maximum effect about 50 micrograms of lead /ml blood. -- Auth. abst.

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57 Glyceryl Trinitrate. II. Chronic Toxicity. J. C. Munch, B. Friedland, and M. Shepard. Ind. Med. & Surg. 34, 940-943 (Dec. 1965).

Review of the literature and personal contacts with manufacturers of glyceryl trinitrate and its pharmaceutical preparations have indicated that long-continued exposure by inhalation, ingestion or cutaneous application are similar in producing characteristic headache, cyanosis and methemoglobinemia. Sensitive individuals may also develop severe cramps, nausea, vomiting and various psychic disturbances. These effects were summarized by the Germans in the statement that chronic contacts develop in the "Haut, Hirn and Herz" (skin, brain and heart). Tolerance in workers has been confirmed following long-term exposure. However, when proper working conditions are established there has been no evidence of pathological change or of death as a result of exposure to glyceryl trinitrate in manufacturing explosives, pharmaceuticals, or in clinical use. -- Auth. disc.

58 Chemical Histologic and Immunologic Responses in Rats to Carbon Tetrachloride by Different Routes of Administration. V. N. Dodson, Roberta Friberg, and Dorothy Ketchum. Proc. Soc. Exptl. Biol. Med. 120, 355-357 (Nov. 1965).

Rats given a single, small dose of carbon tetrachloride by gastric intubation showed a significant elevation of liver lipids and liver hydroxyproline when sacrificed after seven days. Rats which received a comparable dose by subcutaneous injection showed only elevated hydroxyproline levels. When the same dose was administered by inhalation neither liver lipids nor hydroxyproline content were increased. The incidence of microscopic lipidoses was greatest in the gastric and subcutaneous groups, while the incidence of necrosis was greater in the gastric and inhalation groups than in the subcutaneous group. A few immune responses were demonstrated by anti-liver hemagglutinations but none by Ouchterlony gel precipitin or skin tests. -- Auth. sum.

59 Iodine-Azide Test on Urine of Persons Exposed to Carbon Disulphide. D. Djurić, N. Surdučki, and I. Berkeš. Brit. J. Ind. Med. 22, 321-323 (Oct. 1965).

The iodine-azide test was performed on the urine of workers exposed to carbon disulfide in a viscose factory. The exposure coefficient was determined before, during, and after the working time, and showed a good correlation with the exposure. Workers exposed to a high concentration of carbon disulfide could be divided in two groups. The first group showed normal values of the exposure coefficient before work but low values at the end. (The coefficient is inversely related to the exposure.) In the second group, the workers started work with slightly decreased values and ended with greatly decreased ones. The authors are pursuing this study to establish why recovery in the second group was not complete. -- Auth. abst.

60 Dimethyl Sulfoxide (DMSO) as a Solvent in Acute Toxicity Determinations. H. Rosen, et al. Proc. Soc. Exptl. Biol. Med. 120, 511-514 (Nov. 1965).

Dimethyl sulfoxide (DMSO) and water were compared as solvents for determination of LD_{50} values by the oral route in rats and mice using ten quaternary ammonium salts as test compounds. Toxicity changes were obtained in some instances with 50% DMSO; more changes were observed in rats than in mice and the two species did not always parallel each other. When toxicity was altere by DMSO, it increased in all instances except one. Slope was changed in only two tests, one each in rats and mice but not with the same compound. -- Auth. sum.

61 Nephropathy Associated With the Use of Analgesic Medications. J. V. Young, et al. Ann. Internal Med. 62, 727 (1965).

This paper presents in detail three cases of renal damage caused in the opinion of the authors, by the prolonged ingestion of analgesics containing phenacetin (para-acetylphenetidin). In one of the three cases, severe renal insufficiency occurred. Pathologically, interstitial nephritis was found. The authors postulate that infection did not play any role in the development of the renal lesions in this patient. In the other two cases, papillary necrosis was noted. These patients had pyelonephritis. A brief review of the literature is presented, and the pathogenesis of the nephropathy is discussed. -- Can. Med. Assn. J. Absts.

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62 The Determination of Pesticides in Tissues with the Electron Capture Detector Without Prior Clean-Up. J. L. Radomski and Vera Fiserova-Bergerova. Ind. Med. & Surg. 34, 934-939 (Dec. 1965).

A new, greatly simplified gas chromatographic method for the analysis of chlorinated hydrocarbon insecticides in human tissues without the use of clean-up procedures is presented. Good reproducibility and recovery is obtained. Elimination of clean-up procedures was found to: greatly reduce contamination problems from the use of several items of glassware and from adsorbents and solvents used in the clean-up, to improve accuracy and reproducibility due to elimination of variables introduced by the clean-up procedures, and to greatly speed up the analysis. Gas chromatographic equipment able to give reproducible results in the two to 50 picogram range is essential, for this enables one to reduce the amount of nonpesticide tissue extractables to a point where they do not interfere. -- Auth. sum.

63 The Role of Chemistry in Pest Control. H. Martin. Chem. Ind. (London) No. 4, 157-160 (Jan. 23, 1965).

The need for more research in the field of pesticides is discussed. Safer selective pesticides, such as hormones and pheromones, can and should replace many of the hazardous chemicals. With the threat of pesticide resistance, as well as pesticide persistence, less toxic and more selective compounds must be developed. The author presents arguments against restrictive legislation in England on the sale of pesticides. Five references are given.-- Pub. Hlth. Eng. Absts.

64 Value of ED_{50} Testing in Assessing Hazards of Acute Poisoning by Carbamates and Organophosphates. M. Vandekar, et al. Brit. J. Ind. Med. 22, 317-320 (Oct. 1965).

It is shown from the kinetics of inhibition of cholinesterase by N-methylcarbamates and organophosphates that the LD_{50} dose is likely to be a much greater multiple of the dose causing signs of poisoning in 50% of the animals (the ED_{50}) for the carbamates than for the organophosphates. The expected difference was demonstrated by a comparison of the LD_{50}s and ED_{50}s, intravenous and intramuscular, of five carbamates (2-isopropoxyphenyl N-methylcarbamate, 3-isopropylphenyl N-methylcarbamate, 6-chloro-3,4-xylyl N-methylcarbamate, 3,4,5-trimethylphenyl N-methylcarbamate, and 3-methyl-5-isopropylphenyl N-methylcarbamate) and two organophosphorus compounds (diethyl-4-nitrophenyl phosphate and dimethyl 4-nitrophenyl phosphate). The slightest evoked tremor was chosen as the most reliable sign of poisoning from which to estimate the ED_{50} values. Carbamates gave much greater LD_{50}/ED_{50} ratios than organophosphorus compounds. It is likely that occupational exposure to carbamates will produce incapacitating symptoms at doses well below lethal levels. -- Auth. abst.

INDUSTRIAL DUSTS

65 Structural Changes of Particles of Silicic Acid Caused by Mechanical and Thermal Treatment. A. Liberti and G. Devitofrancesco. Staub 25, 161-164 (April, 1965). (German).

Quartz dusts comminuted by various methods have been analyzed by infrared spectrometry. In particular, the difference between dry and wet methods of comminution was investigated. In wet grinding, only a disturbed and nonhydratable, easily soluble layer is formed. Dry comminution causes the destruction of the crystalline structure and with suitable duration, can convert the whole dust particle into amorphous silicic acid. The influence of thermal treatment on the samples is discussed. There are nine references. -- Pub. Hlth. Eng. Absts.

66 Byssinosis in Cotton Ginneries in Greece. X. G. Kondakis and N. Pournaras. Brit. J. Ind. Med. 22, 291-294 (Oct. 1965).

The prevalence of byssinosis in a sample of cotton ginnery workers in Greece was investigated. The respiratory symptoms, forced expiratory volume in one second ($FEV_{1.0}$) and vital capacity (VC) of 70 male ginnery workers were recorded. No case of clinical byssinosis was found, but a statistically significant relationship exists between years of exposure to cotton dust and impairment of lung function. On the contrary, no significant relationship exists between smoking and lung function, or between sputum production and lung function. The findings suggest the hypothesis that the cotton dust may exert, in the case of a prolonged exposure, a chronic deleterious action without producing the typical symptoms of clinical byssinosis. -- Auth. abst.

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67 Ventilatory Capacity Changes on Exposure to Cotton Dust and Their Relevance to Byssinosis in Australia. B. Gandevia and J. Milne. Brit. J. Ind. Med. 22, 295-304 (Oct. 1965).

The same plan of investigation as was used in a previous study of jute workers (Gandevia and Milne, 1965) has been applied to a survey of 50 workers in the blowroom and carding and spinning area of a Sydney cotton mill. Significant decreases in ventilatory capacity were recorded on Friday, Monday, and the following Thursday, with on the average, complete "overnight" recovery, as indicated by similar morning values. Slightly, but not significantly, greater differences were observed in seven subjects with mild byssinotic symptoms and in five subjects with an observed productive cough on request. No effect of sex, shift, or history of cough and sputum was demonstrable. By contrast with the jute workers, no influence of smoking habit was apparent. The larger decreases in ventilatory capacity were observed in those with the higher forced expiratory volume at one second: the forced vital capacity ($FEV_{1.0}$: FVC) ratios, whereas the reverse trend was noted in the jute workers. The occurrence of significant large decreases in those employed in the industry for less than a month, in conjunction with other evidence, suggests that a factor of "self-selection" may be operative among cotton employees in this county (Australia) and may be related to the apparently low prevalence of clinically important byssinosis. Attention is drawn to two different patterns of change of ventilatory capacity over a week in subjects exposed to dusts sometimes associated with symptoms of byssinosis; the relationship of these changes and of chronic bronchitis to the development of clinical byssinosis is discussed. -- Auth. abst.

68 A Survey of Dust Concentrations in Flax Mills in Northern Ireland. I. R. McAulay, et al. Brit. J. Ind. Med. 22, 305-310 (Oct. 1965).

The concentrations in the air of total and of respirable (less than seven microns equivalent diameter) dust were measured in 142 workrooms of 17 Northern Ireland flax spinning mills using a hexhlet air sampler. Neither the distribution of total nor of respirable dust concentrations (mg./100cu.m. air) measured in each of four large workrooms conformed to the normal (or Gaussian) distribution, but it is shown that the logarithms (to the base ten) of these concentrations are normally distributed. In order to make valid statistical comparisons between the dustiness of the different types of room, mean log concentrations are therefore used. The mean log concentrations of total and of respirable dust, and the 95% confidence limits derived from these, were calculated for each room surveyed. These data are presented in tabular form. It was found that concentrations varied widely within each category of room, although in general the pre-preparing rooms had the highest levels followed by other preparing rooms, other finishing rooms, and wet finishing rooms, in that order. -- Cond. auth. abst.

69 Silicosis From Quarrying and Working of Granite. A. Ahlmark, T. Bruce, and Å. Nyström. Brit. J. Ind. Med. 22, 285-290 (Oct. 1965).

Previous knowledge of silicosis in the Swedish granite industry suggested that the disease was neither common nor severe. In recent years, however, changes in working methods have involved a considerably increased formation of dust, and it was considered likely that the risk of contracting silicosis was increased. Reports from other countries supported this conjecture. The 34 known cases of silicosis caused by quarrying and working of granite in Sweden were therefore reviewed. The mean duration of exposure to siliceous dust when stage I silicosis was diagnosed was 32 years, and the mean age at diagnosis was 55 years. Despite the relatively long "prediagnosis" exposure to dust, the disease showed a pronounced tendency to progression, and six cases were complicated by pulmonary tuberculosis. Eighty per cent of the men were awarded disablement benefit because of their pulmonary lesions, and four men died from silicosis alone or in combination with tuberculosis. In Swedish granite works there is room for considerable improvement in dust suppression. Careful checks of such preventive measures and periodic medical examination of exposed persons are strongly advocated. -- Auth. abst.

70 Bone Marrow Changes in Silicosis. S. E. Warraki, M. Y. Gammal, and A. Y. Awny. Brit. J. Ind. Med. 22, 279-284 (Oct. 1965).

Bone marrow specimens were obtained from seven workers who had been exposed to the dust of a calcareous sandstone consisting of 56.3% free silica. The pattern of changes was in the form of generalized hyperplasia, and in particular there were very high figures for the myeloid series, reticulum cells, and plasma cells. The eosinophils showed a slight but definite increase but the erythrocytes, megakaryocytes, lymphocytes, and monocytes were within normal range. These changes were considered to be related to silicosis since other diseases causing stimulation of the

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bone marrow had been adequately excluded. The findings correlate with the histopathological changes which are reported to occur in the lungs of silicotic patients; they indicate a high degree of stimulation of the reticulo-endothelial system. If these changes are considered together with the industrial history and clinical and laboratory data, they may provide a clue to the diagnosis of silicosis and help in the differential diagnosis from other diffuse pulmonary lesions. -- Auth. abst.

71 Mesothelioma of Pleura and Peritoneum Following Exposure to Asbestos in the London Area. Muriel L. Newhouse and Hilda Thompson. Brit. J. Ind. Med. 22, 261-269 (Oct. 1965).

A series of 83 patients from the London Hospital with a diagnosis of mesothelioma confirmed by necropsy or biopsy has been studied for possible exposure to asbestos. The series consisted of 41 men and 42 women; 27 of the patients had peritoneal and 56 pleural tumors. The earliest death recorded was in 1917, but only ten of the series died before 1950 and 40 (48%) between 1960 and 1964. In 76 of the series full occupational and residential histories were obtained. Forty (52.6%) gave a history of occupational or domestic (living in the same house as an asbestos worker) exposure to asbestos compared with nine (11.8%) out of 76 patients from the same hospital suffering from other diseases ($P < 0.001$). None of the 17 suspected cases of mesothelioma, rejected on pathological grounds, was found to have had any exposure to asbestos. There was also evidence that neighborhood exposures may be important. Among those with no evidence of occupational or domestic exposures, 30.6% of the mesothelioma patients and 7.6% of the inpatients with other diseases lived within half a mile of an asbestos factory ($P < 0.01$). Out of the 31 patients with occupational exposures only ten were in jobs scheduled under the Asbestos Regulations of 1931. The interval between the first exposure and the development of the terminal illness of mesothelioma ranged between 16 and 55 years. In 47 patients in the mesothelioma series, lung tissue or sputum was available for examination. In 30 (62.5%) either asbestosis or asbestos bodies were present. -- Auth. abst.

72 Diffuse Mesothelioma of the Pleura and Asbestos. P. C. Elmes, W. T. E. McCaughey, and O. L. Wade. Brit. Med. J. 1, 350 (Feb. 6, 1965).

Mesothelioma of the pleura is an uncommon tumor and, in recent years, studies have indicated a relationship of this tumor to exposure to asbestos. The occupational histories of 42 patients with diagnosed mesothelioma were contrasted to 42 control patients with regard to their exposure to asbestos. Thirty-two of the 42 patients with diagnosed mesothelioma had a history of exposure to asbestos which was considered to be heavy exposure in eight and a light exposure in 24. In the 42 control patients there was a history of exposure in only nine, and in two of these it was considered heavy. The difference between these two groups was highly significant. In another study it was shown that the finding of asbestos bodies in lung tissue was significantly related to the history of industrial exposure to asbestos. When the lungs of 24 patients with diagnosed mesothelioma were examined for the presence of asbestos bodies, 21 of the 24 patients showed this finding. In contrast, asbestos bodies were found in only six of the 24 controls, a highly significant difference. The occupational histories of these patients revealed that the interval between the first exposure to asbestos and the diagnoses of mesothelioma was often long and in some cases exceeded 40 years. Exposure to asbestos, even though many years before and transient, is an important factor in the development of mesothelioma of the pleura. -- J. Occ. Med. Absts.

73 Relation Between Exposure to Asbestos and Mesothelioma. I. J. Selikoff, J. Churg, and E. C. Hammond. New Engl. J. Med. 272, 560 (March 18, 1965).

Ten deaths due to mesothelioma were found in a study of 307 consecutive deaths among asbestos-insulation workers in New York and New Jersey. There were four pleural mesotheliomas (1.3%) and six peritoneal mesotheliomas (1.9%). This is probably an underestimate of the true incidence, since, of the remaining 297 deaths, only 110 cases were autopsied. These figures can be contrasted to a prospective study of the American Cancer Society in which only three deaths due to mesothelioma were noted in 31,652 deaths of patients between 30 and 89 years of age. In an autopsy series of 2,500 deaths, asbestosis was found in 26. There were four mesotheliomas of the pleura, three mesotheliomas of the peritoneum, and seven bronchogenic carcinomas recorded in the patients with asbestosis. No mesotheliomas were found in the absence of asbestosis. Cases of diagnosed mesothelioma from the files of the Armed Forces Institute of Pathology were reviewed and in all cases where lung tissue was available it was examined for asbestos fibers. Asbestos fibers were found in five of the 19 pleural mesotheliomas and in 17 of the 26 peritoneal mesotheli-

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omas. This is probably an underestimate of the true incidence of asbestosis among cases of mesothelioma in the United States since very little lung tissue was available for review and only asbestos bodies and not asbestos fibers were looked for. Mesothelioma should be added to the neoplastic risks of exposure to asbestos along with cancer of the lung (53 of 307 deaths) and probably cancer of the stomach (34 of 307 deaths). -- J. Occ. Med. Absts.

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PHYSICAL ASPECTS OF THE ENVIRONMENT

74 Safe Practices for Industrial SCUBA Diving. P. A. Breysse. Ind. Med. & Surg. 34, 870-873 (Nov. 1965).

Recognizing that SCUBA (self-contained underwater breathing apparatus) divers are subject to many potential hazards and that they must be physically and mentally fit, be adequately trained in the use of SCUBA and possess the necessary mechanical skills to perform their prescribed functions satisfactorily; and that their safety and well-being depends to a large degree upon equipment being in good working order and upon an air supply essentially free from contamination; the Safety Division, Washington State Department of Labor and Industries, appointed a committee to assist the Code Engineer in the completion of SCUBA Diving Safety Standards. This committee was composed of representatives of both labor and management and other interested groups, a large number of which had considerable experience in SCUBA diving activities and diving medicine. These standards should provide a better awareness of the hazards involved in diving, in addition to minimum requirements for diving safety; recognizing that diving can be safe provided it is practiced by well-trained, equipped and informed individuals. -- Auth. sum.

75 Decompression Sickness Following Repeated Breath-hold Dives. P. Paulev. J. Appl. Physiol. 20, 1028-1031 (Sept. 1965).

A report is given on a case of apparent decompression sickness after repetitive breath-hold dives to depths of 50-66 ft. (15-20m.). Three similar cases in Norwegian Navy escape-training-tank instructors are also discussed. A parallel is drawn between the Scandinavian cases and the "pearl diver disease" (taravana), found in the Tuamotu Archipelago in the South Pacific. Symptoms and signs in these conditions are consistent with the diagnosis of decompression sickness. It is emphasized that in such cases immediate recompression is the treatment of choice. Consideration of various depths and patterns of breath-hold diving in terms of nitrogen uptake and elimination permits the relative risk of decompression sickness to be predicted with the help of decompression tables. -- J. Am. Med. Assn. Ref. & Rev.

76 Altitude and Maximum Performance in Work and Sports Activity. B. Balke, F. J. Nagle, and J. Daniels. J. Am. Med. Assn. 194, 646-649 (Nov. 8, 1965).

Experimental evidence obtained from these investigations has confirmed the hypothetical assumption that, at an altitude of around 2,000 meters (6,560 ft.): (1) physical performances requiring the utilization of maximum aerobic capacity are comparatively worse than under conditions of normal barometric pressure; (2) physical performances requiring almost exclusively maximum anaerobic capacity remain nearly unaltered; (3) training and acclimation can bring back "normal" capacity for maximum aerobic work. Possibly, training at elevations higher than 2,000 meters will be more effective in this respect; (4) within one week after return from this altitude, performances in the longer sprint-type events tend to be slightly better than before, while those in the endurance-type events show considerable improvement; and (5) physiologically, these improvements are apparently based on an augmentation of the heart's capacity to move a maximum volume of blood as well as on an increased amount of oxygen carried by the arterial blood. -- Cond. auth. com.

77 Prevention of Heat Illness in Football Players. R. J. Murphy and W. F. Ashe. J. Am. Med. Assn. 194, 651-654 (Nov. 8, 1965).

Football practice in high schools and colleges begins in late summer when the effects of heat are of major concern. To determine when conditions exist on the field which contribute to heat exhaustion and heat stroke, the dry-bulb and wet-bulb temperatures recorded during the first three weeks of practice of the Ohio State University football team were correlated with weight loss encountered. From this, a practical guide was developed with suggestions for preventive measures relative to the two clinical entities. There are 15 references. -- Auth. sum.

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78 The Problem of Noise in the Royal Navy and Royal Marines. R. R. A. Coles and J. J. Knight. J. Laryngol. Otol. 79, 131-147 (1965).

This article summarizes several studies by these authors over the past eight years. A 1959 study of jet aircraft maintenance personnel revealed a persistent threshold shift at low frequencies (e.g., 500cps) that were significant though slight. However, at this time the men were fitted with liquid-seal muff-type protectors. By 1963 the persistent low-frequency losses had completely disappeared. Some research on gunfire and its effects is also described; shotguns are probably responsible for much of the high-frequency hearing loss found in Air Arm candidates.
-- J. Occ. Med. Absts.

79 Hearing-Loss Trend Curves and the Damage-Risk Criterion in Diesel-Engineroom Personnel. J. D. Harris. J. Acoust. Soc. Am. 37, 444-452 (1965).

In repeated testing of some 415 submarine personnel, only negligible losses of hearing are produced by up to 5.5 years of "exposure" to diesel engines, despite the fact that during operations engineroom noise levels are at least 10 db above the usual limits imposed by present damage-risk criteria (DRC); these limits are currently 85-90 db in the octave bands from 600 to 4,800 cps. However, it must be kept in mind that such DRC assume a pattern of continuous exposure for eight hours per day, five days per week, and 50 weeks per year, while the exposures of the submarine personnel in the present study, although not precisely (or, apparently, even grossly) determined, are known to involve exposure periods no greater than four hours, shutdowns for engine repairs, shore duty, etc. Thus these results should not be interpreted as indicating that present continuous-exposure DRC are overprotective. Clearly, however, interrupted exposures are much less dangerous than steady ones, as one can predict from analogous data concerning temporary threshold shifts. -- J. Occ. Med. Absts.

80 The Effect of the Noise Level on the Work Efficiency. S. D. Kovrigin and A. P. Mikheev. Gigiena i Sanit. 30, No. 4, 28-32 (1965). (Russian).

The article deals with the effects of various levels of noise from letter-sorting machines on the work efficiency of sorters at a postoffice. Work efficiency and the number of errors made in letter-sorting depended on the change of the sound pressure levels from 80 to 95 db. In this connection the authors questioned the necessity of industrial noise control and the determination of maximum permissible levels of sound pressure in postoffices. -- Pub. Hlth. Eng. Absts.

RADIOACTIVITY AND X-RADIATION

81 The Effect of Ionizing Radiation on the Air Content of Industrial Premises. M. T. Dmitriev. Gigiena i Sanit. 30, No. 4, 39-44 (1965). (Russian).

A study was made to determine the amount of nitrogen oxides and ozone in the air of an industry that utilizes ionizing radiation and neutrons. The data were compared with concentrations of nitrogen dioxide and ozone gases formed in the air under natural conditions. This made it possible to set maximum permissible levels of ionizing radiation and of integral neutron current in the air of industrial premises. Ventilation standards required in industrial premises containing radioactive isotopes are given. -- Pub. Hlth. Eng. Absts.

ENVIRONMENTAL MEASUREMENTS

82 Instrumentation in Industrial Hygiene. R. G. Keenan. Appl. Spectry. 19, 52-57 (1965).

A discussion of the many types of samples encountered in industrial hygiene studies, the techniques and instruments used for their collection, the methods used for their preliminary chemical treatment, and the spectrographic instrumentation and techniques employed for the quantitative determination of their trace metallic constituents is presented. In this paper emphasis has been placed on the need to use sharp, clean separation procedures, along with appropriate instrumentation, to meet the analytical objectives in this field, i.e., highly sensitive, precise determinations of minute amounts of chemical substances. The high utility of the emission spectrograph for the analysis of metallic elements has been illustrated with typical examples of analytical applications made in the author's laboratory. There are 30 references. -- Pub. Hlth. Eng. Absts.

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83 A Continuously Recording Atmospheric Carbon Monoxide Monitoring System With Fully Automatic Alarms in a Blast Furnace Area. G. M. Davies, J. G. Jones, and C. G. Warner. Brit. J. Ind. Med. 22, 270-278 (Oct. 1965).

A continuously recording carbon monoxide monitoring system with fully automatic alarms is described for use in blast furnace areas. The equipment comprised the Mines Safety Appliances Model 200 infra-red analyzer, pumping system, recorder, extension meter, and alarm unit. Use of the apparatus showed that concentrations of carbon monoxide in the blast furnace area studied were mostly in the range of 0 to 49 ppm. Readings of 200 ppm and over generally indicated that some abnormal and potentially dangerous incident had occurred. Examples of such incidents are given. A visual alarm was set at 200 ppm, a level at which work could safely continue for a limited period, and an auditory alarm at 500 ppm, at which level immediate action was necessary. The theoretical reasons for selecting these levels are discussed, and practical results are quoted to confirm their suitability. -- Auth. abst.

84 The Absorption of Sulphur Dioxide at Low Concentrations PPHM Studied by an Isotopic Tracer Method. C. E. Bostrom. Air Water Poll. Intern. J. 9, 333-341 (June, 1965). (NOTE: Name apparently changed from Intern. J. Air and Water Poll.)

The absorption effeciency of bubblers used in the determination of sulfur dioxide in ambient air was determined by an isotopic tracer method using the sulfur isotope S-35. The experiments show that with all bubblers examined, the absorption in hydrogen peroxide and tetrachloromercurate solutions was sufficiently complete provided the flow-rate did not exceed six liters/min., the height of the solution column was more than three cm., and the concentration of sulfur dioxide was within a range normally found in ambient air. Measurements of the absorption of sulfur dioxide in water in the same concentration range show that the absorption is good. -- APCA Absts.

85 Tracer Techniques in Sulfur Dioxide Air Pollution Studies. Apparatus and Studies of Sulfur Dioxide Colorimetric and Conductometric Methods. P. Urone, J. B. Evans, and Claudia M. Noyes. Anal. Chem. 37, 1104-1107 (Aug. 1965).

Analytical tracer techniques for studying the role of sulfur dioxide in air pollution problems were developed. An apparatus was built to measure directly microgram quantities of sulfur dioxide tagged with S-35. Colorimetric and conductometric methods for determination of sulfur dioxide were evaluated by radiochemical tracer techniques. Colorimetric standards prepared from measured quantities of gaseous sulfur dioxide gave greater color intensities than standards prepared from equivalent amounts of standardized bisulfite solutions. Correlation of colorimetric and radiochemical analytical techniques can give useful supplementary information on the reactions of sulfur dioxide in controlled atmospheres. -- APCA Absts.

86 A Rapid and Sensitive Colorimetric Reagent for Nitrogen Dioxide in Air. N. A. Lyshkow. J. Air Poll. Control Assn. 15, 481-484 (Oct. 1965).

High speed instrumentation requires a colorimetric reagent capable of detecting traces of nitrogen dioxide with little delay for color development. Rate of color development and sensitivity of Griess-type reagent have been improved by adding a promoter (R-salt) and optimizing the concentrations of diazotizing and coupling reagents. Field tests show that the new instrument-reagent combination can resolve short-duration peaks in nitrogen dioxide concentrations of five to ten pphm. -- Auth. abst.

PREVENTIVE ENGINEERING

87 Health Hazards Low in Tire Recapping. Anonymous. Michigan's Occ. Health 10, 10-11 (Summer, 1965).

The tire recapping industry is no longer the back alley salvage operation which was common during and shortly after World War II. Highly sophisticated equipment for rubber cutting as well as significant changes in rubber formulation and vulcanizing procedures mark some of the more recent developments. This ability to rebuild a tire casing to any shape, form, or use, has resulted in special tires such as racing "slicks" so popular among the teenage set. These facts were found in a recent survey of many tire recappers in the metropolitan Detroit area. Although the health hazards of solvents and rubber dust are still present, in most cases good control is provided in the factories. This is a tribute to the industry and the effective work of fire authorities. Solvents are used for cleaning casings, and are present in the adhesives and cements. Laboratory analysis

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of various solvent samples taken during the survey indicated that the solvent used is a low-flash naphtha with a benzene content of 1% or less. The solvent and cement are applied in a variety of ways including brush, roller, air and airless spray. Spray application, general ventilation or local hoods were employed where production warranted. In all cases solvent exposure levels were well within safe health limits. Due to the high flammability of the solvent, good fire safety practices must be followed including the use of safety cans and the elimination of all ignition sources in the immediate work area. Where possible a ventilated spray booth or enclosure is desirable to confine overspray and prevent buildup of flammable vapor concentrations.

88 Toxicological Aspects of Missiles and Nuclear Submarine Warfare. H. D. Baldridge, Jr. Military Med. 130, 505-511 (May, 1965).

In the change of the nature of warfare from hot to cold, from active combat to watchful waiting, increasing emphasis has been directed to man as a vital link in weapon system effectiveness. If a weapon must be held ready for action for extended periods of time, then the men whose responsibility it is to maintain and operate the system must also be continually capable of optimum performance. One of the characteristics of this new form of warfare is the encapsulation of men and machine under conditions of toxicological significance. Military chemists and toxicologists have become members of weapon research and development teams in an effort to insure that hazardous chemicals will be controlled in the deployment of such weapons to the limit permitted by operational requirements. Participation of these scientific disciplines in the hardware design phases of military research and development programs minimizes the possibility of later perhaps very costly substitutions of material or modification of operational doctrine. In rocket operations where laws of gas dynamics require the use of large quantities of types of chemical compounds which are inherently hazardous to man, the role of the chemist and toxicologist is primarily one of crew protection against an acute hazard potential. With closed atmospheres such as those aboard submarines and other encapsulated weapons systems where emphasis is on possible chronic inhalation toxicity, greater consideration is given to actual selection of chemical materials by design engineers and to the conditions of usage. Out of such experiences in the development and operational deployment of weapons and from laboratory studies which attempt to define the limit of man's ability to endure chemical manipulation of his natural environment, there will continue to be laid down a firm foundation upon which design parameters for future weapons and closed ecological systems will be based. There are eight references. -- Auth. sum.

89 Evaluation of Dry Processes for Removing Sulfur Dioxide from Power Plant Flue Gases. D. Bienstock, et al. J. Air Poll. Control Assn. 15, 459-464 (Oct. 1965).

Estimated capital investment and operating costs for three dry processes for removing sulfur dioxide from flue gas are projected for an 800 mega watt power plant burning a 3%-sulfur coal. Although many of the projections are based on actual operating data, some of the assumptions made could be optimistic. A liberal return of the 70% acid is credited to the catalytic oxidation process. The price assumes a captive market close to the source. Transportation to any distant market would nullify the byproduct credit. The applicability of Cor-Ten in sulfuric acid service has not been proved. Substitution of enameled or stainless steels would make this process far too costly. Long-term tests are still to be run on the alkalized alumina process. As the cost of the absorbent is a significant cost of the process, no loss in activity of absorbent or attrition greater than 1/10% of the fresh solids feed could be tolerated. In the Reinluft process more information is needed on the attrition suffered by the relatively soft char as well as information on the corrosion protection required. The capital investment is the lowest with the alkalized alumina process, $8,510,000 compared with $15,800,000 for the Reinluft, and $17,460,000 for the catalytic oxidation process. On a $/kw basis these numbers are respectively 10.64, 19.75, and 21.82. -- Cond. auth. concl.

90 Is Fuel Oil Desulfurization the Next Step? R. J. Bender. Power 109, 62-64 (May, 1965).

The methods available, economics, and need for removal of sulfur from residual fuel oil are discussed. A recent study of the cost of desulfurization made by Bechtel Corporation for the Division of Air Pollution, Public Health Service, is featured. Other cost estimate studies for both domestic and imported fuel oils are also presented. The author concludes that although desulfurization may increase significantly the cost of residual fuel oil, it is coming and may ultimately be the least bothersome and least expensive solution to corrosion and air pollution problems in oil-fired installations. -- Pub. Hlth. Eng. Absts.

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COMMUNITY AIR HYGIENE

91 Air Pollution. Report by the Committee on Public Health
New York Academy of Medicine. Bull. N.Y. Acad. Med. 41, 310-318 (March, 1965).

In a report in 1959, the Committee on Public Health of the New York Academy of Medicine enumerated the consequences of air pollution both as an economic loss and a hazard to health. This early report stressed the importance of removing pollutants from the air by means of practical control procedures which should be regulated by official action and encouraged by education of the public. It was emphasized that the situation was not good and would inevitably become worse if nothing was done. Since 1959 much has happened, both naturally and experimentally, which has provided essential evidence upon which to base an expanded program to combat air pollution. In October 1962 an article was published concerning the relationship of morbidity to an acute period of air pollution which occurred during November 1953 in New York City. In October 1963 the northeastern portion of the U.S. was put on an alert because of meteorological conditions which might have led to associated acute episodes of air pollution. Standards for ambient air quality were set up in 1959 by the State of California, Dept. of Public Health, classifying three levels of pollution intensity. In Yokohama, Japan, a chronic and progressive atypical asthma has become endemic among American military personnel. Laboratory studies have shown, among other things, the indication of a real association between several respiratory disturbances and sulfur dioxide. The current report also discusses some of the official actions taken on a federal, state, and municipal level. In view of the revealing experiments and studies which implicate certain air pollutants as hazards to health the Committee closes the report with eight specific recommendations.
-- Cond. APCA Absts.

92 Analysis for Aromatic Compounds on Paper and Thin-Layer Chromatograms by Spectrophotophosphorimetry Application to Air Pollution. E. Sawicki and J. D. Pfaff.
Anal. Chim. Acta 32, 521-534 (June, 1965).

The direct spectrophosphorimetric analysis for polycyclic aromatic and heterocyclic hydrocarbons and their polar derivatives on paper or thin-layer chromatograms would simplify the identification of these derivatives in polluted air and other complicated mixtures. Such a procedure would save time and allow the use of a wide variety of solvents and reagents, whereas the usual spectrophosphorimetric procedure is limited to neutral solvents and to extracted solutions of the spots. Thus, spectra could be determined in neutral, alkaline, acid, reducing, or oxidizing media. Organic synthetic reactions can be performed on the unknown spot, and use of this wide variety of reactions would greatly increase the amount of data available for the characterization of unknowns. The acquirement of phosphorimetric spectra from glass-fiber and other types of paper is described in this paper. The method is applied to the phosphorimetric study of fractions obtained from complex airborne particulate and air pollution source mixtures after column and paper chromatographic separations. -- Pub. Hlth. Eng. Absts.

93 Air Pollution from Road Traffic. Measurements in Archway Road, London. L. E. Reed and C. F. Barrett. Air Water Poll. Intern. J. 9, 357-365 (June, 1965).
(NOTE: Name apparently changed from Intern. J. Air and Water Poll.)

Measurements of smoke near a busy main road in London showed concentrations up to 500 micrograms/cu.m., 10 to 20 times greater than those at a site about 100 yards away from the road. These high concentrations are considered due to diesel vehicles. Corresponding high values for sulfur dioxide and oxides of nitrogen at the roadside site are attributed to road traffic generally. Two sets of measurements were made to study this pollution. The one made between August and October 1960 measured smoke concentrations only. Other measurements made August 31 to September 19, 1961 also included determinations of sulfur dioxide and oxides of nitrogen.
-- APCA Absts.

94 Allergenic Air Pollutants in New Orleans. H. Weill, et al.
J. Air Poll. Control. Assn. 15, 467-471 (Oct. 1965).

Outbreaks of bronchial asthma, defined by sharp peaks above the average number of emergency room visits at Charity Hospital in New Orleans, have been noted in this city since the early 1950's. These outbreaks have occurred during the summer and fall, with the months of October and November containing the most frequent and severest episodes. Early work on this problem associated emissions from spontaneous underground burning in abandoned city dumps with the high incidence and extracts for skin testing prepared from the emissions produced a significant

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number of positive skin tests in persons involved in the asthma outbreaks. Recent investigation showed that other sources of allergenic air pollution in the city were related to the epidemics of asthma. Attention has been focused on a large public grain elevator at the Mississippi River in the southwestern portion of the city. Grain extracts have produced high percentages of positive responses in susceptible patients with low response rate found in control subjects. Persons known to have participated in these outbreaks have been characterized as being allergic; a low incidence of patients with chronic bronchitis and emphysema has been found in this group. New meteorological data regarding the outbreak periods has been collected. -- Auth. abst.

95 Air Quality Criteria and Standards for Agriculture. J. T. Middleton, L. O. Emik, and O. C. Taylor. J. Air Poll. Control Assn. 15, 476-480 (Oct. 1965).

Many food, fiber, forage, and forest crops and a number of animals are adversely affected by a variety of air pollutants. The more important and generally occurring of these pollutants are ethylene, fluorides, ozone, peroxyacyl nitrates (PAN), and sulfur oxides. Their effects upon animals and plants can best be judged by criteria which describe the reaction of biologic materials to pollutant concentration and exposure time. Four criteria are recognized: (1) interference with enzyme systems; (2) change in cellular chemical constituents and physical structure; (3) retardation of growth and reduction in production from altered metabolism; and (4) acute immediate tissue degeneration. Information on tissue degenerative effects due to these pollutants is the most common; there are some reports on growth and productivity reduction; but little data are available on cellular alterations and interference with enzymes. Determination and measurement of the latter two criteria are essential to the ultimate definition and prediction of the significance of the effects of pollutants on growth and productivity of agriculture. Dosage data are available which indicate the degenerative effects of some specific pollutants on certain tissues of hosts. Political-social judgments can be made because of the knowledge of the effects of these specific pollutants; this knowledge thus permits the establishment of standards which define air quality necessary for the protection of agriculture. The importance of combined pollutant effects mitigates against the ready setting of standards on an airshed or significant regional basis. The setting of standards for a single pollutant effect upon crops and animals effectively serves as a precedent and indicates the necessity of establishing air quality values for pollutant mixtures emitted into and produced within the air resource at different geographic locations as the polluted air moves throughout the typically multigovernment jurisdictions of the airshed. There are 36 references. -- Auth. abst.

96 Some Technical and Economic Aspects of Residual Fuel Oil Desulfurization. E. Z. Finfer. J. Air Poll. Control Assn. 15, 485-488 (Oct. 1965).

Combustion of residual, the most common type of fuel oil used in industrial and commercial steam generating plants, accounts for about 600,000 tons or 37% of the sulfur oxide emissions in New York state. On the average, residual oil available in New York state contains about 2.2% sulfur and is consumed at an annual rate of approximately 85 million barrels. The removal of sulfur from many types of residuals should become economically feasible as a result of the development of the HDS and H-Oil hydrodesulfurization processes. From studies recently made, these methods of desulfurization have been estimated to vary from a minimum of no appreciable increase in overall cost to a maximum of about one cent per gallon. The by-product distillates produced in hydrodesulfurization are a very significant factor in making the process economical and the demand for these is increasing at a greater rate than residual. -- Auth. abst.

97 The Emission of Corrosive Vapours by Wood. I. Survey of the Acid Release Properties of Certain Freshly Felled Hardwoods and Softwoods. P. C. Arni, G. C. Cochrane, and J. D. Gray. J. Appl. Chem. (London) 15, 305-313 (July, 1965).

The importance has been assessed of various factors responsible for the release of corrosive vapors from certain freshly felled hardwood and softwood species on exposure to high humidity and temperatures in excess of 30°. Variables studied include season of felling, differences between sapwood and heartwood regions, initial acid content of the timber on felling, role of non-volatile extractive components in catalyzing release of corrosive vapors, and inhibition of enzymic reactions by mild chemical sterilization. Although the release of volatile acid is closely related to the loss of bound acetyl groups from the wood substance indicating autohydrolysis of acetate in the cell wall material, the vapor corrosivity of a timber species is not directly related to its bound acetyl content. An accompanying reduction in the proportion of bound acetate groups hydrolyzed in the cell wall substance may indicate that the release of volatile acidic products from wood is in part due to a microbiological hydrolysis as well as chemical hydrolysis. -- APCA Absts.

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98 A Practical Relationship Between Government and Industry. D. P. Barnes. J. Air Poll. Control Assn. 15, 465-466 (Oct. 1965).

The science of air pollution control is making significant advances and a practical working arrangement between all levels of government and industry must be achieved. Lawmakers, scientists, and industry must work side by side in combatting air pollution; there is no other approach that will give the problem the attention it deserves. How this might be accomplished is the subject of the present article. -- Auth. abst.

99 Current Trends in Federal Interagency Relations Concerning Air Pollution. R. Perman and L. Goldner. J. Air Poll. Control Assn. 15, 472-475 (Oct. 1965).

Under the first Federal Air Pollution Act of 1955, which assigned the responsibility for developing a national program to the Public Health Service, a significant phase of the program involved other federal agencies through a series of contractual relationships. These interdepartmental relationships were limited however, to the objective of capitalizing on the diverse research facilities and specialized competencies within the federal establishment, as a means of accelerating the research and technical assistance program authorized under the act. With the passage of the Clean Air Act of 1963, a major new emphasis has been added to the federal air pollution control program—application of technical knowledge, through broadly accelerated programs. This emphasis is reflected in current trends in the nature and type of the Public Health Service's developing relationships with other federal agencies. The emerging PHS programs to prevent and control air pollution from federal facilities, the PHS role in preventing pollution arising from transportation systems aided under the new Urban Mass Transportation Act, and other developing interagency relationships and problem areas are discussed in this context. -- Auth. abst.

100 A Survey of European Kraft Mill Odor Reduction Systems. D. F. Adams. Tappi 48, 83A-87A (May, 1965).

During the spring and summer of 1964, a study was made of selected kraft pulp mill installations in Norway, Sweden, Finland, France, Italy, and Austria. Information was obtained by personal interview with technical personnel in the mills and research workers in institutes and universities. Equipment in 18 mills was observed, and the unique features of these processes are reported. The principal methods contributing to odor reduction included incineration, alkaline absorption, heat recovery, black liquor oxidation, and chlorine treatment. It is hoped that the information and philosophy presented will stimulate additional thought, research, and action toward further progress in odor abatement. -- Pub. Hlth. Eng. Absts.

101 Chemical Recovery and Odor Abatement on a Kraft Recovery Furnace. W. H. Buxton and M. W. LaPointe. Tappi 48, 112A-113A (May, 1965).

Air pollution at Western Kraft Corp. in Albany, Oregon, has been substantially reduced by establishing uniform-recovery furnace control and utilizing secondary-stack-gas chemical recovery. Using wet gas scrubbers in conjunction with an alkaline shower wash, sodium ion collection efficiencies as high as 50% have been reported. Hydrogen sulfide recovery of 90% was obtained during extensive testing. Chemical fallout in general on mill property has been reduced 94%. -- Pub. Hlth. Eng. Absts.

102 Odor Control for the Process Industries. W. Strauss. Chem. and Process Eng. 46, 133-137, 139 (March, 1965).

The author reviews the sources and nature of odor as well as means of measuring odors. Various methods of prevention are compared: gas scrubbing, adsorption, combustion, and masking. Although these approximate to chemical engineering practice in some respects, they differ markedly and these differences are examined. -- Pub. Hlth. Eng. Absts.

103 Control of Odors in Working and Industrial Environments. W. Viessman. Air Eng. 7, 18-26 (Dec. 1965).

The release of obnoxious and toxic odorants in highly populated industrial areas has become a necessity for both health and comfort. Each odor problem requires special or separate analysis. There are many means available to correct an odor situation. The method selected should depend on the particular odorant or odorants and on the economics involved. In general,

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every effort should be made to abate odor production at its source. Odors that are produced, should be eliminated or reduced as near the source as possible, by dilution ventilation, absorption, adsorption, modification or combustion as necessary and feasible to comply with the local statutory, health, and comfort requirements. -- Auth. sum.

MANAGEMENT ASPECTS

104 Management and Industrial Safety Achievement. A Practical Approach and New Philosophy for Risk Evaluation and Control. J. V. Grimaldi. J. Am. Soc. Safety Eng. 10, 9-14 (Nov. 1965).

The role of the safety specialist will change in character. The customary inspection, safety promotion and training activities will be more or less subordinate to his loss prevention counselling of the plant's managers. His value to the safety effort will depend significantly on his ability to: Develop loss control information which enables managers to make sound decisions, rather than endeavoring personally to convince employes to have a greater safety awareness. Persuade management action rather than attempting to correct harzardous situations on his own. Teach the methods for solving safety problems, rather than providing the answers.

ACCIDENTS AND PREVENTION

105 The Role of the Faceguard in the Production of Flexion Injuries to the Cervical Spine in Football. W. J. S. Melvin. Can. Med. Assn. J. 93, 1110-1117 (Nov. 20, 1965).

The precise role of the single-bar face mask in producing major flexion violence to the cervical spine has been studied by review of game movies, analysis of the radiographs and detailed interviews with two players who sustained fractures of the cervical spine. The single-bar face mask can become fixed in the ground, thereby forcing a runner's head down onto his chest as the trunk moves forward. Preventive measures embodying modifications in the face mask, strict coaching in football techniques and the institution of safety factors in the playing rules are proposed. Appreciation of the mechanism of injury is urged in order to encourage careful inspection of protective head gear as well as to direct the attention of team physicians to the possibility of serious flexion injury to the cervical spine occurring without dramatic evidence. This report is not a plea for abandonment of the face mask but rather a suggestion for careful selection of a safe and efficient mask. -- Auth. abst.

MISCELLANEOUS

106 Status of Fluoridation in the United States and Canada. 1963. Task Group Report. F. J. Maier. J. Am. Water Works Assn. 57, 76-84 (Jan. 1965).

This is the twelfth progress report on fluoridation, which is published annually by the American Water Works Association. During 1963, 291 communities in the United States serving more than 2.6 million persons and 30 communities in Canada serving more than 800,000 people were added to the list of communities that fluoridate their water supplies. These increases (12 and 26 1/4%, respectively) are the greatest since 1952 when the efficacy of fluoridation began to be doubted. At the end of the year, there were more than 46.6 million persons in the United States and 3.8 million in Canada using water fluoridated in controlled amounts. This report also contains data on the use of various fluoride compounds, the relative standing of states in adopting fluoridation, and various developments in procedures and techniques occurring during 1963.

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