



HWBB-0018878

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL

AUGUST, 1961

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INDUSTRIAL HYGIENE FOUNDATION

MELLON INSTITUTE

4400 FIFTH AVENUE -- PITTSBURGH 13, PA.

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IN RE: ABRAMS November 1992

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26TH ANNUAL MEETING

INDUSTRIAL HYGIENE FOUNDATION

OCT. 25 -26, 1961

HWBB-0018879

MELLON INSTITUTE PITTSBURGH, PA.

Final arrangements for the 26th Annual Meeting of the Foundation are nearing completion. Invitations and programs will be mailed at a later date, so reserve the dates of October 25 and 26.

The program for October 25 will consist of the Chemical-Toxicological Conference and a Joint Medical—Legal Conference in the morning, and the Legal Conference and Joint Medical—Chemical-Toxicological Conference in the afternoon. The Engineering Conference will be an all-day session. The program for October 26 will be devoted entirely to the Management Conference.

The Chemical-Toxicological Conference will take up the subjects of immunologic and tolerance-producing capacity of ozone; toxicology of chlorinated hydrocarbons; and the flame ionization method of analysis.

The Joint Medical—Legal Conference on pneumoconiosis last year evoked so much interest that it was decided to repeat the panel discussion again this year. The subject chosen is "The Lungs, the Environment and Compensation".

The theme of the Joint Medical—Chemical-Toxicological Conference will be "Biologic and Medical Problems Associated with Plastics and Resins". The toxicity of decomposition products will be included in these discussions.

Discussions at the Legal Conference will cover current legislative developments in workmen's compensation; developments relating to mental health; and duplication of workmen's compensation in social security benefits.

Speakers at the Engineering Conference will take up such subjects as industrial hygiene and safety precautions in a South American copper mine; measurement of SO₂ and NO₂ by the National Air Sampling Network; radiation exposures from both industrial x-ray machines and sealed radioisotopes used for radiography; the role of adhesion in electrostatic precipitation; technical aspects of the thermowheel heat exchange system; evaluation of potential health hazards associated with the operation of plasma jets; use of combustible gas indicators for evaluating flammable vapor concentrations in ovens; spray painting without compressed air; and operating characteristics of an air treatment system.

The Management Conference will consist of the Membership (business) Meeting; a resumé of the previous day's Conferences; and papers on health aspects of air pollution, occupational health problems facing industry today, labeling of hazardous substances, and silicosis in metal mines.

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INDUSTRIAL HYGIENE FEATURES

Consult Abst. No. 753 for details on the mortality from sublethal pulmonary edema superimposed upon pneumococcosis or atelectasis.

Effects of excess sodium chloride on blood lipids, a possible factor in coronary heart disease is the subject of Abst. No. 756.

Details on a graded activity program for the safe return of self-care after myocardial infarction are given in Abst. No. 757.

Family of hypertensive man: progress report of a long-range study program is the title of Abst. No. 760.

A review of some important problems concerning lung cancer is presented in Abst. No. 761.

Abst. No. 767 is concerned with erythrasma—a common bacterial infection of the skin.

Information on liquid nitrogen therapy in dermatology is presented in Abst. No. 769.

Problems in the evaluation of carcinogenic hazard from the use of food additives are discussed in Abst. No. 772.

Abst. No. 773 is concerned with the preparation and analysis of calibrated low concentrations of 16 toxic gases.

A short review of accidental thallium poisoning in adults is given in Abst. No. 778.

Abst. No. 785 gives a report of two cases of Farmer's lung.

The morale of workers exposed to high levels of occupational noise is investigated in Abst. No. 798.

Abst. No. 806 reports on a study of occupational radiation exposure in New York State.

Abst. No. 814 describes a procedure for air sampling and analysis of lead on paper.

Data on power and space requirements for electrostatic precipitators are presented in Abst. No. 818.

See Abst. No. 822 for pilot studies on a non-catalytic auto exhaust combustor.

FOUNDATION FACTS

NEW MEMBER. The Foundation welcomes to membership the Ferro-Glo Corporation.

DR. H. H. SCHRENK attended a meeting of the Joint AIHA-ACGIH Committee on Respiratory Protective Equipment held at the Bureau of Mines in Pittsburgh on July 10 and 11. He also attended a meeting of the Pennsylvania Air Pollution Commission in Harrisburg on July 25.

26th ANNUAL MEETING
OCTOBER 25 - 26, 1961

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INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

734 American College of Surgeons: 47th Annual Clinical Congress.

More than 11,000 surgeons and physicians from the United States, Canada, and many other countries are expected to attend the 47th Annual Clinical Congress of the American College of Surgeons in Chicago, October 2-6, 1961. Approximately 1,000 doctors will participate in the program which will include 9 postgraduate courses, 258 new research reports from medical centers throughout the country, 68 medical motion pictures, 26 cine clinics, 14 operation telecasts from Billings Hospital of the University of Chicago, and 300 scientific and industrial exhibits. Headquarters of the Congress will be located in the Conrad Hilton Hotel.

-- Can. Med. Assn. J.

735 Certification of Health Physicists.

The American Board of Health Physics has certified more than 150 applicants as accredited radiation protection experts. The board was established last year by the Health Physics Society to provide uniform standards for radiation protection specialists. State regulatory codes specify functions and responsibilities of radiation safety supervisors but until the new board began to function there was no qualifying provisions or supervisory licensing group in industry. Certifying examinations have been held in Boston, Atlanta, Chicago, and San Francisco. Additional applicants will be certified during the next few months. To be admitted to the examination, candidates must have a bachelor degree in science or engineering and a minimum of 5 years of experience in a responsible position in health physics.

-- Am. Ind. Hyg. Assn. J.

736 Anachem Conference.

The Ninth Detroit Anachem Conference Sponsored by the Association of Analytical Chemists, Detroit, Michigan, will be held again in the McGregor Memorial Conference Center at Wayne State University on October 16, 17, and 18, 1961. Papers in the fields of instrumental, gravimetric, and titrimetric analysis; fluorometry; polarography; emission, absorption, and x-ray spectroscopy; mass spectrometry; and chromatography are being planned. Special symposia will be held on EDTA, clinical chemistry, and radiochemistry methods. A feature of the program will be the presentation of the Anachem Award for Outstanding Achievement in Analytical Chemistry to Dr. I. M. Kolthoff of the University of Minnesota. For further information write to: P. N. Burkard, Program Chairman, Ninth Detroit Anachem Conference, Wyandotte Chemicals Corporation, Wyandotte, Michigan.

-- Am. Ind. Hyg. Assn. J.

737 Smog a Critical Health Hazard.

Disclosure of a survey showing that physicians have advised an estimated 10,000 patients to leave the Los Angeles Basin because of smog is seen as an endorsement of the Board of Supervisor's policy of dealing with smog as a critical health hazard, Air Pollution Control Officer, Smith Griswold, announced recently. The survey, made jointly by the

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Los Angeles County Medical Association and the Tuberculosis and Health Association of Los Angeles County, showed that 77% of the county's physicians believe air pollution adversely affects the health of their patients, and that an estimated 2,500 of the 10,000 patients advised to leave have done so. Mr. Griswold pointed out that industrial controls are keeping more than 3,400 tons of pollution out of the air each day, that pollution from rubbish burning has been ended, and that an all out program is underway for the purpose of controlling auto exhaust.

-- Cond. from J. Air Poll. Control

738 Mental Health Unit Publishes Psychopharmacology Abstracts.

Psychopharmacology Abstracts, a new monthly abstracting service, is intended to meet the needs of investigators in psychopharmacology for rapid and comprehensive information about new developments and research results. Sponsored by the Psychopharmacology Service Center of the National Institute of Mental Health, the abstracts are prepared by Medical Literature, Inc., Philadelphia, Pa. The issues contain brief noncritical abstracts of the world literature in psychopharmacology. Every effort is made to have the abstracts appear as soon as possible after the primary publication; it is hoped that abstracts can be published within 3 to 6 weeks after the primary publication has appeared. Requests to receive Psychopharmacology Abstracts, distributed gratis to investigators doing research in psychopharmacology, should be addressed to: Head, Scientific Information Unit, Psychopharmacology Service Center, National Institute of Mental Health, Bethesda, Maryland. Requests should be accompanied by a brief statement of the research interest of the investigator. -- Scientific Information Notes

OCCUPATIONAL DISEASE STATISTICS

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

	Conn. May	Ind. Apr.-June	Pa. June-July	Tenn. June	Total
Anthraco-silicosis			5		5
Anthrax			1		1
Asbestosis	1				1
Bronchitis (illuminating gas)				1	1
Cellulitis (right arm)				1	1
Dermatitis	24*	7*	17	12	60
Dermatitis (suspected)			1		1
Hepatitis			1		1
Hernia		1			1
Nephritis (suspected)			1		1
Pneumoconiosis			110		110
Pneumoconiosis (suspected)			7		7
Silicosis			18		18
Silico-TB			2		2
Tenosynovitis		1		1	2
Trichloroethylene		1			1
Tuberculosis			1		1
Total	25	10	164	15	214

* Causes are listed as follows:

Connecticut: Occupational dermatitis due to plants, poison ivy, 1; occupational dermatitis due to oils and greases, and metal cutting compounds, 9; occupational dermatitis due to solvents, 4; occupational dermatitis due to other chemicals: alkalies 1, multiple chemicals 1, plating chemicals 1; occupational dermatitis—other: infections, inorganic dust, miscellaneous, soap and detergents, 1 each, unidentified, 1.

Indiana: Plating solutions, 1; cause not stated, 6.

COMING EVENTS

- 740 Aug. 30-Sept. 2 Pacific Dermatologic Association, Inc., Salt Lake City, Utah.
 Aug. 31-Sept. 6 American Psychological Association, 69th Annual Meeting, New York, N. Y.
 Sept. 3-8 American Chemical Society, 140th National Meeting, Chicago, Ill.
 Sept. 5-8 11th National Chemical Exposition, Chicago, Ill.
 Sept. 6-8 International Symposium on Transmission and Processing of Information, MIT, Cambridge, Massachusetts.
 Sept. 6-8 Joint Nuclear Instrumentation Symposium, ISA, AIEE, IRE, North Carolina State College, Raleigh, North Carolina.
 Sept. 10-13 Pharmaceutical Manufacturers Association, Colorado Springs, Colorado
 Sept. 10-14 Tuberculosis Conference, 16th International, Toronto, Canada.
 Sept. 11-13 Technical Association of the Pulp and Paper Industry, San Francisco, Calif.
 Sept. 11-15 Instrument Society of America, Fall Instrument-Automation Conference and Exhibit, and 16th Annual Meeting, Los Angeles, Calif.
 Sept. 11-15 International Industrial Conference, National Industrial Conference Board, San Francisco, Calif.
 Sept. 13-15 Armed Forces Chemical Association, 16th Annual Meeting, Washington, D. C.
 Sept. 14-17 Drug, Chemical and Allied Trades Association, 71st Annual Meeting, Pocono Manor, Pennsylvania
 Sept. 17-20 1st Annual Conference on Pharmaceutical Analysis, University of Wisconsin, King's Gateway, Land O'Lakes, Wisconsin.
 Sept. 17-20 Society of Mining Engineers of AIME, Minerals Beneficiation Division, Denver, Colorado.
 Sept. 18-20 Canadian Agricultural Chemicals Association, 9th Meeting and Conference, Mont Tremblant Lodge, Quebec, Que., Canada.
 Sept. 18-20 Ottawa Symposium on Applied Spectroscopy. Canadian Association for Applied Spectroscopy, Ottawa, Ont., Canada.
 Sept. 20-22 National Industrial Conference Board, New York, N. Y.
 Sept. 20-23 American Ceramic Society, Enamel Division, French Lick, Indiana.
 Sept. 24-27 American Institute of Chemical Engineers, 45th National Meeting, Lake Placid, N. Y.
 Sept. 24-27 2nd Rare-Earth Conference, University of Denver Research Institute, Glenwood Springs, Colorado.
 Sept. 25-28 American Welding Society, Fall Meeting, Dallas, Texas.
 Sept. 25-28 2nd Industrial Building Exposition and Congress, New York, N. Y.
 Sept. 26-28 27th Annual Tung Industry Convention, Edgewater Park, Mississippi.
 Sept. 27-29 American Association of Textile Chemists and Colorists, National Conference, Buffalo, N. Y.

LEGAL DEVELOPMENTS

- 741 Workmen's Compensation Law. State of West Virginia. In Effect as of July 1, 1961.
 Administered by West Virginia Compensation Commissioner, Charleston. 60 pp. (1961).

The following statements may be of interest: Article 4, Sec. 6, p. 34, Classification of Disability Benefits, "The total and irrecoverable loss of the hearing of one ear shall be considered a fifteen per cent disability, and the injured employee shall be entitled to compensation for a period of 60 weeks. The total and irrecoverable loss of the hearing of both ears

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shall be considered a forty-five per cent disability, and the injured employee shall be entitled to compensation for a period of 130 weeks. For the partial loss of hearing in one, or both ears, the percentage of disability shall be determined by the Commissioner, using as a basis the total loss of hearing in both ears." Article 4, Sec. 3-a, p. 38, Silicosis Medical Board Created; Qualifications; Term of Office; Duties Renumeration, "There shall be a medical board, known as the "silicosis medical board", which shall consist of 3 licensed physicians, who shall be appointed by the Commissioner. No person shall be appointed as a member of such board, or as a consultant thereto, who has not by special study or experience or both acquired special knowledge of pulmonary diseases. All members of the silicosis medical board shall be physicians of good professional standing, admitted to practice medicine and surgery in this state, and one of them shall be a roentgenologist. One of the board shall be designated annually as chairman by the Commissioner. The term of office of each member of such board shall be 6 years. The function of the board shall be to determine all medical questions relating to cases of compensation for silicosis under the direction and supervision of the Commissioner. The Commissioner, from time to time, shall fix the per diem salary, computed on the basis of actual time devoted to the discharge of their duties, to be paid each member of such board, and they shall also be entitled to reasonable and necessary traveling and other expenses incurred while actually engaged in the performance of their duties."

742 Linotype Operator's Contraction of Emphysema and Bronchitis—Inhalation of Lead Fumes.

The board found that claimant, employed 32 years as a linotype operator, had an occupational disease in the nature of emphysema and bronchitis caused by the inhalation of fumes in his employment. Claimant worked about two feet from a pot of molten lead and was exposed to fumes from it as well as from similar ones on other linotype machines in the room. These fumes were particularly acute in the morning because the exhaust fans were turned off overnight while the lead was molten 24 hours a day. Claimant's doctor testified that the condition complained of was caused by inhalation of fumes in the course of employment. On the other hand, the appellants' doctor testified that the condition was due to a pre-existing funnel breast which was possibly congenital in its origin. There was substantial evidence to support the finding of occupational disease. The constant presence and inhalation of the fumes was the recognizable link between the claimant's disease and a distinctive feature of his job. Affirmed. Muench v. John J. Schoenfeld Company, Inc. New York Supreme Court, Appellate Division, Third Department. No. 2543. January 17, 1961.

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743 Industrial Noise—Partial Deafness—Pre-existing Condition.

An employee of an aircraft corporation suffered a loss of hearing due to an injury to his right ear occasioned by an industrial noise arising out of his employment. The industrial commission held the injury compensable and, on the basis of medical testimony, permanent partial disability was awarded for a 10% loss of hearing. On this basis the employee was awarded 55% of his average monthly wages for 6 months. Following the corporation's request for rehearing, the commission entered an award finding that the employee's disability was a 10% bilateral loss of hearing and affirmed its earlier award. The plant physician testified that the employee had a bilateral hearing loss even before the accident. The corporation maintained that the amount of this previous disability should have been subtracted from the total disability and the award calculated as a non-scheduled injury. It also stated that the Commission erred in awarding bilateral hearing loss when the injury occurred to the right ear only, but this objection was contradicted by medical testimony. The higher court defined "previous disability" as a disability which affected earning capacity at the time of a subsequent injury. In spite of his pre-existing hearing loss, the employee had no disability affecting his earning capacity at the time of injury. Affirmed. Goodyear Aircraft Corp. v. Industrial Commission of Arizona. Arizona Supreme Court. No. 6943. January 15, 1961.

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744 New York Tells Auto Manufacturers to Install Blowby Device.

New York City recently warned eight automobile manufacturers to remove air pollution sources from their new cars voluntarily or run the risk of being compelled to do so. Mr. Arthur J. Benline, Commissioner of Air Pollution Control, told the auto makers they should install the recently developed crankcase blowby device as standard equipment on all new vehicles. In letters to the eight manufacturers, Mr. Benline recalled that legislation was introduced at the 1961 Session of the New York Legislature to make the blowby device mandatory on all new cars sold in New York State. While the legislation was not enacted, he said, it probably will be introduced again in 1962, "and there is every expectation that it will be received favorably." The blowby device is a crankcase regulator that cuts the pollution from fumes blown past piston rings and the crankcase of vehicles. In California, the State Motor Vehicle Board has begun a program to put fume controls by law on all motor vehicles in the State.

-- Am. Soc. Civil Eng., Sanitary Eng. Div. News

BOOKS, PAMPHLETS AND NOTICES

- 745 Diabetics Unknown. Public Affairs Pamphlet No. 312. G. Conklin.
Public Affairs Pamphlets, 22 East 38th St., New York 16, N.Y. 28 pp. (1960). 25 cents.

Although spectacular progress has been made in recent years in treating diabetics, surveys indicate that there are twice as many diabetics in this country as anyone had suspected states the author. The presence of overweight before the onset of diabetes is one of the best-known characteristics of the disease in adults. Many a diabetic, however, has no striking symptoms. Although diabetes is found among all groups, statistical studies have shown that diabetes is most likely to occur in those who have diabetic relatives. The main elements in the treatment and management of the disease are now well-established. They include: (1) a carefully controlled diet; (2) regular exercise; (3) medication—except for the mild cases that can be controlled by diet alone, diabetics require either insulin or an oral agent; (4) a well-regulated life; (5) good body hygiene with special foot care and vigilant attention to any bruises, cuts, or other injuries. The best procedure for the average person is a health examination, coupled with an examination of the blood and urine at least once a year.

- 746 Automation and Unemployment.
Chamber of Commerce of the United States, Washington 6, D.C. 34 pp. (1961). 50 cents.

Structural unemployment, depressed areas and automation are not new. Numerous suggestions have been previously cited for coping with these problems. Subsidy of depressed areas will neither solve the problems nor help the country. Increased labor mobility and improved training and retraining efforts are more to the point. The most promising long-run approach lies in private and public policies mitigating general economic instability (recessions) and stimulating optimum economic growth under competition, flexibility, confidence and price level stability. It is recommended that there be: (1) Collection of improved information on current job openings, by skill, number and locality. (2) Utilization of this information by the United States Employment Service and other agencies concerned with placing unemployed workers. (3) Advance notice by employers of plans for mechanization or automation which will displace substantial numbers of workers, combined with announcement of the alternatives available to the displaced workers and the steps which management is undertaking to minimize the problems.

-- Cond. from Summary

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- 747 Health Statistics from the U.S. National Health Survey. Series D-No. 5. Health Interview Responses Compared with Medical Records. U. S. Department of Health, Education, and Welfare, Public Health Service, PHS Publication No. 584-D5. 74pp. (June 1961). For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 45 cents.

This methodological study is largely concerned with the relationship between information obtained from two sources on chronic illness in a defined population: (1) Reports from physicians of the Health Insurance Plan of Greater New York on their patients who sought care during a period of 12 months; and (2) Reports on chronic illness made at the end of this one-year period by respondents to household interviews of these patients and their families by the National Health Survey. The comparison between the data from these two sources is directed in the main toward examining which of the conditions diagnosed by physicians are reported by the respondents on household interview. In the present study the voluntary seeking of medical care for a condition during the course of one year is established from a source independent from the household interview, and the information collected through the interviews is examined in relation to this criterion source. The objectives of the study are: (1) To describe discrepancies between medical records data and information obtained in household interviews. (2) To provide a basis for: (a) the development of hypotheses as to the nature and causes of such discrepancies, with identification of the most severe problems, and (b) a more precise description of the nature of information on illness which may be elicited in a household interview. (3) To suggest means of improving methodology for later record check studies of similar character.

INDUSTRIAL MEDICAL PRACTICE

- 748 Continuing Incapacity Despite "Medical Recovery". M. H. Miller.
J. Am. Med. Assn. 176, 205-207 (Apr. 22, 1961).

The physician not infrequently encounters patients who have achieved good medical or surgical recovery but fail to return to a life of useful activity. Such patients show a continuing incapacity despite "medical recovery". This is especially likely to occur after illnesses that immobilize the patient and make him dependent upon others for his care. His relation to the physician and the physician's understanding and interest strongly influence the results. The history of 2 male patients aged 44 and 37 years illustrate these principles. It is recommended that discharge planning begin at the time of the physician's first interview with the patient and that measures to keep the patient alert, stimulated, and self-confident be considered, especially if treatment involves long periods of immobilization. -- Author's abst.

- 749 Recent Developments in Techniques of Artificial Respiration. L. M. Croton.
Inst. Sci. Technol. J. 6, 5-13 (Apr.-June 1960).

In this article the author reviews the evidence presented before the National Academy of Sciences and the National Research Council of the United States, which led to the adoption of Safar's method of mouth-to-mouth breathing as the best technique for manual artificial respiration. Further evidence is quoted to show that teenagers can perform this method without undue fatigue. Mention is made of several types of plastic airways that have recently been placed on the market for use by first-aid workers. -- Bull. Hyg.

- 750 Physiological Autocontrol of Mechanical Respirators. S. E. Stephenson, et al.
Diseases of Chest 39, 363 (Apr. 1961).

An electronic respirator which detects and amplifies the electrical potential of a contracting muscle is described. The electrical potential of the muscle activates a respiratory

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aid which synchronizes the patient's efforts to breathe. The patient has complete control of each breath in depth and timing. This electronic, transistorized unit has now been used successfully on 17 postbulbar poliomyelitis patients.

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

- 751 A Transistor Electronically Controlled Respirator. H. D. Bennett and H. G. Boren. *Diseases of Chest* 39, 382 (Apr. 1961).

This electronic device can aid patients who are unable to trip the positive-pressure respirators as well as the victims of respiratory muscle paralysis. The device uses the patient's own respiratory center to regulate breathing, thus tending to reduce hypoventilation. The automatic cyler prevents or diminishes the dangers arising from complete respiratory center failure.

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

- 752 Treatment of Wounds with an Enzyme Inhibitor. L. Wechselberger. *Wien. med. Wochschr.* 110, 1058 (1960). German.

This article discusses the problems of minor injuries in an industrial plant with special reference to measures directed against cross-infection and a new preparation for the dressing of wounds. In search of a better method of treatment a new preparation, the enzyme inhibitor polyphloroglucine phosphate, was used on 3,000 lesions including lacerations, abrasions and second- and third-degree burns. According to the author, the results were excellent, as primary healing was observed in most cases. The drug is a hyaluronidase antagonist which reduces the cellular and vascular permeability, causing the wound to dry up and indirectly inhibiting the spread of infection. No sensitivity reactions were encountered, and the substance was non-irritating to skin, tissues and mucous membranes. Even though it has no antibacterial effects *in vitro*, it was also tried on boils, carbuncles and paronychias which healed faster than under the usual therapy. The drug is made in Sweden, and the preparations used were 1% gel and a 1% ointment.

-- Cond. from Can. Med. Assn. J. Absts.

- 753 The Mortality from Sublethal Pulmonary Edema Superimposed Upon Pneumoconiosis or Atelectasis. P. Gross, Marian L. Westrick and J. M. McNerney. *Am. Ind. Hyg. Assn. J.* 22, 90-92 (Apr. 1961). Reprints available from Industrial Hygiene Foundation upon request.

Pulmonary edema was produced in normal rats by the injection of a dose of alpha naphthyl thiourea (ANTU) which killed 27% of the animals. The same dose of ANTU administered to rats handicapped by a reduced pulmonary reserve (oleothorax) or by pneumoconiosis resulted in 60% mortality. This increased mortality rate supports the hypothesis (applied to smog deaths) that individuals with an appreciably reduced pulmonary reserve or with significant pneumoconiosis are more vulnerable to pulmonary edema-producing irritants than are normal individuals.

-- Authors' abst.

- 754 Sarcoidosis: Clinical and Thoracic Roentgen Features. S. Cohen, M. J. Albini and D. Abed. *Diseases of Chest* 39, 412 (Apr. 1961).

The majority of patients afflicted with sarcoidosis have a good prognosis. There is a good rate of spontaneous regression of pulmonary lesions (50%). There is no specific treatment. Steroids suppressed the disease in some instances. In a review of 44 patients, 89% are living and all but 3 are able to work. Eleven per cent died after surviving from 2 to 9 years.

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

- 755 Physiopathological Mechanism of Sudden, Unexpected Death. L. Croce, V. Nosedà and A. Bertelli. *Minerva medicolegale* 52, 15 (Jan. 6, 1961).

Among 1,047 cases (890 men and 157 women) of sudden, unexpected death, there were 822 (78.5%) cases of coronary cardiopathy, 170 (16%) of degenerative inflammatory heart

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disease, 8 (0.8%) of congenital heart defect, and 47 (4.5%) of spontaneous heart rupture. Anatomical data, mainly segmental fibrosis and aorticocarotid atherosclerosis, prevalent in the group of coronary cardiopathy, indicated the operation of 3 mechanisms, singly or in combination: ventricular fibrillation, total auriculoventricular block, and, in some cases, sinus arrest. Analysis of the 4 groups in this series revealed the presence of a general phenomenon as characteristic of sudden death, i. e., the rapid and intensive formation of hypostatic spots. This phenomenon indicates alterations which occur when there is ventricular fibrillation together with total auriculoventricular block. This may be explained by venous hypertension which generates irreversible encephalic lesions and acts through a double mechanism: (1) increase in the tonus of the venous vessels as a response of the bulbar vasomotor system to hypercapnia, and (2) increase in the volume of blood in the venous bed due to mobilization of erythrocytic deposits resulting from hypercapnia and from discharge of blood from the vena cava into the overloaded right atrium. -- J. Am. Med. Assn. References and Reviews

- 756 Effects of Excess Sodium Chloride on Blood Lipids. A Possible Factor in Coronary Heart Disease. G. D. Talbott, et al. *Ann. Internal Med.* 54, 257 (1961).

Twenty prisoners who were clinically normal were voluntary subjects for this study. They were placed in solitary cells and for one week received a nutritionally analyzed diet that contained a moderate quantity of sodium. Then, after an infusion of Lipomul, the individual blood clear times were determined for several lipid fractions in the fasting state, at the beginning of the infusion, and after 2, 4 and 24 hours. Each of these men served as his own control. During the second week, the same conditions were maintained, but all participants received 20 g. sodium chloride per day, with supplementary desoxycorticosterone (Percorten). At the end of a week the infusion of Lipomul was repeated and blood clearance times were determined as before. Comparison of the two series of data shows that after the sodium chloride diet, the values for cholesterol esters in the blood were depressed, but the values for serum fatty acids and triglycerids were uniformly elevated at all observation periods with the exception of the 24-hour post-Lipomul point. All other values for blood constituents remained essentially unaltered. Although clinical conclusions are not yet justified, the statistical significance of the variations in the lipid fractions studied here suggests that additional investigations relative to the role of sodium chloride in lipid metabolism are indicated, specifically with regard to their possible relationship to the development of coronary disease.

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

- 757 Graded Activity Program for Safe Return to Self-Care After Myocardial Infarction. H. D. Cain, et al. *J. Am. Med. Assn.* 177, 111-115 (July 15, 1961).

The Graded Activity Program is a safe and practical plan for the management of patients with recent myocardial infarction. The results of testing 335 patients with recent myocardial infarction are analyzed. Electrocardiographic monitoring of the patient's response to activity is the most reliable method for early detection of coronary insufficiency. In addition to protecting the patient from unsafe levels of activity, the program provides psychological reassurance for the patient. The Graded Activity Program is of value not only for hospitalized patients but also for out-patient care.

-- Authors' summary

- 758 Hypertensive Diseases in Workers with Reference to Its Prophylaxis. F. Micheli. *Med. lavoro* 51, 714-720 (Nov. 1960). Italian.

The author believes that a tendency to hypertension can be detected if present, even in relatively young persons, if family history is carefully studied, blood pressure readings are correctly interpreted and the physical and psychological pattern of the individual is considered in each case. Chronic industrial poisoning from lead, mercury, and carbon disulfide involves the cardiovascular system, and some other industrial poisons—such as carbon monoxide, nitroglycerin and nitroglycol—may lead or contribute to the development of coronary disease. Chlorine derivatives like carbon tetrachloride and dichloroethane, chromates, oxalates and some other chemicals used in industry may give rise to acute and chronic poisoning

with eventual renal insufficiency, blood pressure changes and involvement of the cardiovascular system. An occupation which has to be carried out in a hot atmosphere is likely to upset the water and mineral exchanges of the body and may have cardiovascular repercussions.

-- Cond. from Bull. Hyg.

- 759 Influence of Diet and Mode of Life on General Health, Serum Cholesterol Content, Incidence of Atherosclerosis and Coronary Thrombosis Among Trappist and Benedictine Monks. J. J. Groen, et al. *Ned. Tijdschr. Geneesk.* 105, 222 (Feb. 4, 1961).

(See IHD Abst. No. 235, March 1961). The authors report investigations on 180 Trappist monks, who are lactovegetarians and on 168 Benedictine monks who live on a mixed diet. There was no significant difference in blood pressure between monks of the two orders. The average blood cholesterol was considerably higher, and in middle life the thoracic aorta seemed wider, among the Benedictines than among the Trappists. These differences might be the result of dietary differences between the two orders. The incidence of myocardial infarction and angina pectoris was about the same in the two groups of monks, but it was lower than in middle-aged men of comparable age groups in the general population. These observations seem to indicate that a mixed diet might, through an increase of blood cholesterol, favor the development of atherosclerosis, but that acute occlusion of one of the major coronary arteries, which gives rise to myocardial infarction, is more likely to be associated with the strains and stresses against which the monks of both orders are more or less protected by the special conditions of monastic life.

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

- 760 Family of Hypertensive Man: Progress Report of a Long-Range Study Program. G. A. Perera, E. G. Clark, F. R. Gearing and M. D. Schweitzer. *Am. J. Med. Sci.* 241, 18 (1961).

Despite a voluminous literature, the part played by inherited and acquired factors in the genesis of primary hypertension remains obscure. A long-range study is described in which 100 patients with documented primary hypertension and 100 control normotensives, all past middle age, all matched for equality, all with a living spouse and two or more siblings or offspring, or both, are being investigated. Although the study is only in its preliminary stages, a definite familial concentration is evident already. The difficulties in undertaking such a study are described; it remains to be seen whether the role of inheritance and environment can be defined clearly.

-- Can. Med. Assn. J. Abst.

- 761 A Review of Some Important Problems Concerning Lung Cancer. I. Considerations of Epidemiology, Etiology and Pathogenesis. N. C. Delarue. *Can. Med. Assn. J.* 84, 1374-1385 (June 17, 1961).

The relationship between lung cancer and cigarette smoking appears inescapable. The facts warrant presentation to the public without the contradictory claims heretofore apparent. The medical profession must no longer fail to accept responsibility in this regard. There are 76 references to the subject in the bibliography.

-- Author's conclusion

- 762 Cigarette Smoke and Physiologic Damage of Bronchial Tree. A. C. Hilding. *Diseases of Chest* 39, 357 (Apr. 1961).

Most air pollutants and inhaled particulate matter are filtered out as they pass through the nose. Cigarette smoke, however, which is a concentration of gases and tar droplets, by passes the nose, and the tar droplets are deposited throughout the whole tracheo-bronchial tree. The ciliary stream of the bronchial tree is fairly efficient at removing these substances. Where the ciliary stream encounters a number of naturally occurring obstructions in the form of squamous islands, bronchial openings, and the vocal cords, there is a suggested increase in the frequency of squamous-cell carcinoma.

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

IN RE: ABRAMS November 1992

HWBB-001885

03120897

763 Common Characteristics of Leptospirosis: Report of 11 Cases.A. P. Cohn and A. A. Howard. *Ann. Internal Med.* 54, 57 (Jan. 1961).

A recent outbreak of leptospirosis on Okinawa affecting 11 men of the United States Marine Corps suggests that leptospirosis most commonly presents a mild illness, with slight renal and hepatic damage, plus delayed signs of aseptic meningitis. The 11 men had all swum in a natural pond from 9 to 14 days before the appearance of symptoms, which included chills, fever, headache, lumbar and calf pain, anorexia, and conjunctivitis. While these symptoms suggested many infectious diseases, the diagnosis of leptospirosis was strongly suspected because all 11 patients had leukocytosis, elevated serum glutamic-oxalacetic transaminase values, abnormal urinary sediment. Pleocytosis in the spinal fluid of 3 patients gave added support, and eventually serologic confirmation was obtained. Leptospirosis is biphasic in character. During the first 5 to 7 days, the "septicemic" stage, leptospiras can frequently be recovered from blood and spinal fluid. The second stage begins after a temporary improvement with a rise in temperature; meningitis may develop; antibodies begin to circulate; and there is a rapid rise in titer. This period has been termed the "immune" stage. Ten patients were treated with tetracycline and one with chloramphenicol. The clinical progress in all resembled the usually benign course of untreated leptospirosis.

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

764 Is Serious Pulmonary Disease, Caused by Nonphotochromogenic ("Atypical") Acidfast Microbacteria Communicable?H. Crow, R. Corpe and C. E. Smith. *Diseases of Chest* 39, 372 (Apr. 1961).

The source of infection on nonphotochromogenic mycobacteria is probably environmental. The organisms are most probably avirulent to man except under certain circumstances. Response to any 2 or all 3 antituberculosis drugs was poor. The sputum remained positive in 70% of the cases studied after months and even years of treatment.

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

765 Aspergillosis of the Lung. N. T. Braatelen and H. M. Perlmutter. *Diseases of Chest* 39, 425 (Apr. 1961).

Aspergillus has been isolated from the sputa of patients with asthma, tuberculosis, infarction, bronchiectasis, bronchopneumonia, and carcinoma. Two cases are presented which are substantiated as primary invasion. The medical therapy of this disease is primarily supportive. Several case reports describe favorable results after surgical removal of localized lesions.

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

SKIN DISEASES AND BURNS

766 Problems in a Simple 2-Possibility Counting Study. P. C. Anderson. *Arch. Dermatol.* 84, 99 (July 1961).

A useful experimental design for the study of allergic reaction to drugs depends on scientific medical knowledge, experience with cutaneous allergy, and correct statistical analysis. Method-analysis of a recent study of the incidence of reactions to a sulfa drug demonstrates that the major sources of error are the result of a basic incompleteness in medical knowledge and limitations in the management of patients in these studies. The problems in the design, execution, and reporting of a simple 2-possibility counting study are discussed.

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

03120898

- 767 Erythrasma--Common Bacterial Infection of the Skin. I. Sarkany, D. Taplin and H. Blank. J. Am. Med. Assn. 177, 130-132 (July 15, 1961).

Erythrasma is a common bacterial infection of the skin. Erythrasma of the toe webs is considered to account for a large number of scaly and fissured lesions of the feet which are not due to fungus or monilia, and for which no adequate explanation has existed in the past. Twenty-three per cent of 109 subjects were affected by this form of erythrasma. Evidence for the bacterial nature of erythrasma seems to be complete and can be summarized as follows: the scales of erythrasma, both of the classical type and the feet, contain gram-positive rods and filaments with granules. These bacteria have been cultured on special media, and the colonies show similar coral fluorescence to that seen over erythrasma affected areas in vivo. The reason for the red fluorescence in erythrasma is not known. Electron microscopic examinations confirm that the organisms regularly obtained in cultures are bacteria. Inoculation experiments with the pure culture have produced scaly lesions showing red fluorescence when examined with Wood's light. Finally, evidence of the bacterial nature of the disease comes from the response to treatment. Erythrasma of the trunk clears up completely with systemic erythromycin, confirming the in vitro sensitivity of the organism.

-- Authors' summary

- 768 Fluorescent Antibody Studies in Chronic Dermatitis. L. J. Wise, Jr., et al. Arch. Dermatol. 84, 37 (July 1961).

Twelve patients with chronic dermatitis and two normal persons were studied using the fluorescent antibody technique. The patients' serum was conjugated with fluorescein isothiocyanate and reacted directly with autologous skin sections from areas of dermatitis. A patient with atopic dermatitis and one with nummular eczema had serum globulins which were reactive against sections of their own skin. Serum from the atopic patients was unreactive with normal homologous or autologous skin, and prior reaction with autologous, unconjugated serum blocked subsequent reactions between dermatitic skin and tagged serum. Possibilities suggested by the results are briefly discussed. -- J. Am. Med. Assn. References and Reviews

- 769 Liquid Nitrogen Therapy. R. H. Grimmer. Arch. Dermatol. 83, 563 (Apr. 1961).

In recent years liquid nitrogen has been introduced for dermatological therapy. The liquid, which is at a temperature of -196.0°C (-384.8°F), has been found to be a most useful agent for the removal of superficial lesions such as verrucae, keratoses, etc. The study was prompted by the author's inability to determine the optimum duration of application in liquid nitrogen therapy or whether pressure should be used. Histological findings indicated that exposure of up to 60 seconds resulted in approximately 2 mm. of necrosis. Probably because of the warmth of the subpapillary plexus of blood vessels and the insulation provided by 2 mm. of frozen tissue, longer treatments yielded no deeper necrosis. By occluding the vasculature, the resultant depth was as much as 3 mm. This study has led to a better understanding of the practical uses and limitations of this form of cryotherapy.

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

- 770 Mucormycosis in Severely Burned Patients. Report of Two Cases With Extensive Destruction of the Face and Nasal Cavity. E. R. Rabin, G. D. Lundberg and E. T. Mitchell. New Engl. J. Med. 264, 1286-1289 (June 22, 1961).

Two cases of fatal mucormycosis presenting rapid widespread destruction of the face and nasal cavity are reported as a complication of extensive cutaneous-burn injury. Both patients exhibited direct meningeal extension of this mycotic infection, in addition to visceral involvement. Early recognition of mucormycosis infection depends upon its distinctive dry, black, ischemic necrosis of the face and nasal cavity with early spread to the orbit and meninges. This unusual clinical picture has been described most often in patients with diabetes mellitus, but has not been reported previously in severely burned patients. The bibliography contains 20 references.

-- Authors' summary

IN RE: ABRAMS November 1992

HWBB-0018886

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CHEMICAL HAZARDS

- 771 Toxicologic Studies on Paralytic Shellfish Poison. G. S. Wiberg and N. R. Stephenson. *Toxicol. & Appl. Pharmacol.* 2, 607-615 (Nov. 1960).

The acute LD50's for a highly purified preparation of paralytic shellfish poison in mice were determined for the oral (263 micrograms/kg.), intraperitoneal (10.0 micrograms/kg.), and intravenous (3.4 micrograms/kg.) routes. Female mice were more susceptible than males to lethal doses of the poison. Increases of pH of the injection medium or the addition of sodium ions reduced the intraperitoneal toxicity. These two effects were not additive and the sodium effect appeared to be the stronger. The sodium ion did not influence the oral or intravenous toxicity. The use of the median death time as a criterion of toxicity is not reliable at pH levels above 4.0 or in the presence of sodium ions above 0.1 M. However, under the specified conditions of the bioassay procedure of the Association of Official Agricultural Chemists, satisfactory results are obtained.

-- Public Health Eng. Absts.

- 772 Problems in the Evaluation of Carcinogenic Hazard from Use of Food Additives. Subcommittee on Carcinogenesis, Food Protection Committee, Food and Nutrition Board, National Academy of Sciences-National Research Council, Washington, D.C. H. E. Carter, et al. *Cancer Research* 21, 429 (May 1961).

Concern about carcinogenic hazards in the environment seemed to warrant special consideration of carcinogenic hazards associated with use of food additives, and to this end the Food Protection Committee formed its Subcommittee on Carcinogenesis. The present report was prepared by the Subcommittee after a review of available information. It is a consensus of often widely diverse viewpoints and interpretations. Information obtainable from dose-response curves prepared from data obtained in animal experiments appears of limited practical use in evaluating carcinogenic hazard for man. The lack of quantitative correspondence in the carcinogenicity of a substance for different mammalian species and other complicating factors make meaningful extrapolation from the "no-effect" level on the dose-response curve to a "safe level" of use by man currently impossible. The assignment of a safe level of use for man, of a demonstrated carcinogen must at present rest largely on the evaluation of alternate risk and values which usually cannot be expressed in quantitative terms. Quantitative knowledge about the carcinogen, e.g., the slope of the dose-response curve, the maximum experimental no-effect level, the minimum technologic amount necessary for the proposed use, can, however, be taken into account in assigning such a tolerance level.

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

- 773 Preparation and Analysis of Calibrated Low Concentrations of Sixteen Toxic Gases. B. E. Saltzman. *Anal. Chem.* 33, 1110-1112 (July 1961).

Accurately known low concentrations of toxic gases are required for evaluation of detecting devices and instruments, development and testing of analytical methods, and toxicologic experimentation. All-glass flow systems for diluting gases with purified air avoid serious errors caused by surface adsorption or reaction with impurities. Concentrations computed from flowmeter readings are compared with those determined using the best available analytical methods (some improved). Sampling efficiency and consistency of analytical results with sample sizes and concentrations are examined. These methods may be extended to other gases and volatile liquids. The gases covered in this paper are ammonia, arsine, bromine, carbon dioxide, carbon monoxide, chlorine, chlorine dioxide, ethylene oxide, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, monoethanolamine, nitric oxide, nitrogen dioxide, phosgene, and stibine.

03120900

- 774 A Case of Delayed Hydrocyanic Acid Poisoning from Acetone Cyanhydrin. J. Lang and F. Stintzy. *Arch. maladies profess.* 21, 652-657 (Oct.-Nov. 1960). French.

This is a clinical description of a young man who recovered from convulsive coma treated symptomatically since the etiology remained obscure until renewed questioning. Unknown to his companions doing similar work, and unaffected, he had before noon dismantled and flushed a pipe which contained perhaps 30-40 ml. acetone cyanhydrin (AC). The washings soaked into his clothing. AC decomposes into acetone and hydrocyanic acid in an alkaline medium. Such would be the sweat on an alcoholic's skin exerting himself in a hot workroom. The acetone would facilitate absorption. Some 5 hours later he had a headache, nausea, weakness and giddiness, but finished work and changed his clothes. At home he vomited some bile and went to bed, his parents ignoring the staggering gait because of his alcoholic habits. Shortly afterwards his mother found him unconscious, rigid with the back arched, blue and frothing at the mouth and nostrils. He arrived at the hospital in deep coma, flaccid, cyanosed, with stertorous, slow, regular breathing, good pulse, low blood pressure, dilated, fixed pupils and diminished reflexes. Acetone smelled in the breath was not found in the urine. For 3 hours violent clonic convulsions alternated with tonic convulsions and opisthotonos, culminating in a severe paroxysm and apnea for 45 seconds, followed by flaccidity and sweating. Investigations, including blood sugar and urea were normal. He had been treated with oxygen, probably life-saving, and a barbiturate, an analeptic and a circulatory stimulant. After waking, he was transfused with physiological serum containing magnesium glutamate and vitamin B₁, which probably helped.

-- Cond. from Bull. Hyg.

- 775 Nitrogen Dioxide--A Respiratory Irritant. L. R. LaFleche, C. Bolvin and C. Leonard. *Can. Med. Assn. J.* 84, 1438-1443 (June 24, 1961).

The literature, to date, of the dangers of nitrogen dioxide inhalation as encountered in the syndrome known as silo-filler's disease is reviewed. An unusual case is presented in which the diagnosis was beclouded by a past history of possible tuberculosis, and where four different probable exposures occurred. Radiological evolution and histological sections are included. The danger of using nitrous oxide as an anesthetic agent in such cases is made clear. Suggested treatment in suspected cases is outlined.

-- Authors' summary

- 776 Toxic Reaction to Intramuscular Administration of Iron Dextran. D. Ben-Ishay. *Lancet* 1, 476 (Mar. 4, 1961).

Iron dextran (Imferon), in 11 patients, caused high fever, tachycardia, painful enlargement of inguinal lymph nodes and lumbosacral pain. Sometimes the severe reaction mimicked salpingitis, appendicitis, epidural abscess, and pyelitis. Leucocytes were normal in 7 patients and slightly elevated in 3 others. Elevated erythrocytic sedimentation rate was constantly found. Increased alpha₂ and beta globulin were found in 5 patients. The reactions occurred after several well-tolerated injections. The cause is unknown, but the severity justifies withdrawal of iron dextran from routine use.

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

- 777 Occupational Risks in a Mercury Plant. C. E. Carlin, et al. *Salud Ocupacional (Lima)* 5, 3-8 (Apr.-June 1960). Spanish. (Instituto de Salud Ocupacional, Las Amapolas 350, Urbanización San Eugenio, Lince, Lima, Peru*).

This article refers to poisoning in a plant refining mercury on the western part of the central Peruvian Andes at an altitude of over 4,000 m. where mercury in the form of cinnabar is extracted by the open-cast method. Refining is done by distillation of the cinnabar at 600°C. About 130 tons are dealt with daily. Air samples were taken by means of the "big impinger" from the mine, the refining plant, and the laboratory and at the same time 155 workers, 115 of whom were engaged in the actual mining, 18 in refining, and 22 in maintenance, were examined clinically, with special attention given to the nervous system. The examination included chest

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x-ray and laboratory tests such as blood counts, hemoglobin, and urine examination. The mercury concentrations in the air of the mine and of the laboratory were less than the MAC but in the refining plant concentrations ranged from a minimum of 0.04 to a maximum of 2.57 mg. Hg. per cu.m. (MAC 0.1 mg.). None of the workers in the mine or in maintenance showed any evidence of Hg. poisoning and in 56 of them urinary Hg. averaged 0.024 mg. per liter. By contrast in 16 of the 18 employed in refining the average urinary Hg. was 0.224 mg. per liter; 13 of these showed definite symptoms of mercurialism, with changes in the teeth and gums, albuminuria, abdominal, thoracic, and lumbar pain, headache, loss of weight and hyper-tonia of the lower limbs. Tremor was present in only 3. The average urinary Hg. was 0.255 mg. per liter. Systolic and diastolic pressures were greater in the 13 with symptoms than either the 5 without definite symptoms or any of the other workers. The authors consider that the refinery was the evident source of poisoning, and that if the urinary Hg. exceeds 0.25 mg. per liter, a figure which in any case is regarded as evidence of excessive exposure, the patients will show symptoms.

-- Cond. from Bull. Hyg.

778 Accidental Thallium Poisoning in Adults. H. J. Steinberg.
Southern Med. J. 54, 6-9 (Jan. 1961).

This paper contains a short review of some of the literature of thallium poisoning. In recent years, apart from industrial poisoning, the emphasis has been upon the recognition of the poisoning in children who have ingested thallium contained in rodenticides and insecticides. There are, however, occasional reports of cases of accidental thallium poisoning in adults in which the source of the poison could not be ascertained. Four cases of adult thallium poisoning are described and in these it could only be assumed that the food consumed may have been contaminated by pesticides. Particular emphasis is placed on the psychiatric manifestations of thallium poisoning reported also by other observers and which were present in 2 of the present cases. Unless one is aware of such manifestations in cases of thallium poisoning these might easily be misdiagnosed as disorders of personality or as neuroses. The most striking of the cases described was in a 36-year-old woman of the U. S. Women's Army Corps who had an excellent record in her 12 years of active duty. In a few months her work began steadily to deteriorate, she became very forgetful and her personal appearance was untidy and dirty. On examination, psychological tests revealed definite evidence of brain damage. Her clinical state is described at length and it was found that there was a urinary excretion of thallium of 1.06 mg. in 24 hours. She improved so much under medical care that she was discharged back to duty although she still showed occasionally some residual evidence of her illness. It is stressed in the summary that in thallium poisoning in addition to anorexia, fatigue, pain in the limbs, neuritis, incoordination, loss of hair, dry skin, and visual disturbances there may be organic brain damage which is slow to recover and may be permanent.

-- Cond. from Bull. Hyg.

779 Antithrombin Activity in Lead Intoxication. G. Saita.
Med. lavoro 51, 694-704 (Nov. 1960). Italian.

The author tabulates the laboratory results of a number of relevant tests, including the measurement of the coagulation time for estimating any antithrombin activity, which he has had carried out on specimens of blood and urine taken from 19 patients who were affected with chronic lead poisoning. The coagulation time was found to go beyond the upper limit of the normal range in 9 of the patients, and these showed other evidence of severe lead poisoning. He found that the coagulation time in these cases could be reduced to within normal limits by neutralizing the antithrombin factor in the blood plasma with protamine sulfate, or adsorbing the plasma on barium sulfate or heating the plasma to 56°C or by using the blood serum alone and adding fibrinogen. For his technique, which he describes, the author has made use of an "antithrombin reagent" supplied by Hoffman-laRoche. The author thinks that this increase of antithrombin activity indicates an impairment of the liver or pancreas functions or of both. The finding is constant in some cases of lead poisoning: in some others, coagulation time is found to exceed normal limits only during the acute phases of the condition (lead colic).

-- Bull. Hyg.

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- 780 Acute Barbiturate Intoxication. J. K. Dobos, J. Phillips and G. A. Covo.
J. Am. Med. Assn. 176, 268-272 (Apr. 29, 1961).

Data from more than 400 cases of acute barbiturate intoxication were examined for evidence of the possible effectiveness of analeptic drugs (such as caffeine, amphetamine, or picrotoxin) in treating this condition. The final comparison was limited to patients admitted in a condition of coma with laboratory evidence of barbiturates in urine, blood serum, or gastric washings. Of the 141 patients who satisfied these criteria, 77 received analeptics and 64 were treated supportively without analeptics. There were 4 deaths in the former group and 2 in the latter. There was no significant difference between the 2 groups as to the duration of coma or the number of ensuing complications.

-- Authors' abst.

- 781 Liver and Kidney Damage from a Single Exposure to Carbon Tetrachloride. M. Finzel.
Zentr. Arbeitsmed. u. Arbeitsschutz. 10, 235-238 (Oct. 1960). German.

The 3 cases of carbon tetrachloride poisoning described resulted from the inhalation of carbon tetrachloride during a single work shift. They are published because the opinion that kidney and liver damage due to the poison only follows long continued exposure is still frequently expressed. The cases were in 3 women workers, 2 of whom were employed in making toys and the other in cleaning textiles. Because of a shortage of the chemicals usually employed in their work, carbon tetrachloride was used instead. Within a short time of beginning work with carbon tetrachloride the women were taken ill with giddiness, nausea, and vomiting. There are full hospital case reports with clinical and laboratory findings. The narcotic effects of the inhalation of carbon tetrachloride were relatively moderate but there was some evidence of severe hepatic and renal damage which necessitated a stay in the hospital for several months. Although the 3 women were greatly improved, the damage sustained has not healed fully. The points made in the conclusions are that the existing legal control of the sale and use of carbon tetrachloride is inadequate and that it is nowadays unnecessary to use this poisonous substance for cleaning purposes or for fire fighting.

-- Bull. Hyg.

- 782 The Influence of Certain Compounds on the Urinary Excretion of Trichloroethanol and Trichloroacetic Acid in Rabbits. V. Bartonicek.
Arch. Gewerbepathol. u. Gewerbehyg. 18, 317-326 (1960). German.

The work described here was carried out on 6 rabbits in order to study the effect of glucose, fructose, and lactic acid on the excretion of the oxidation products of trichloroethylene. The reasons for these experiments were the observations recorded in the literature that glucose, fructose, and lactic acid accelerate the disappearance of ethanol from the blood and it was thought that a similar acceleration might occur with trichloroethanol. In some further experiments, ethanol was also tested for a possible effect on the excretion of the oxidation products of trichloroethylene since chronic alcoholics are known to have an intolerance to trichloroethylene. The 6 rabbits were given trichloroethylene (1.0 ml.) by intramuscular injection 3 times a week for 7 weeks before the influence of intravenous glucose and the other substances was tested. The main results of these experiments on only 6 rabbits were that none of the substances (glucose, etc.) had any influence on the amount of trichloroacetic acid excreted. The amount of trichloroethanol excreted was increased by glucose (13%) and ethanol (9%) but diminished by sodium lactate (7%) and fructose (12%). Although the observations are so few in number, the assumption is made that lactate and fructose given repeatedly by intravenous injection might have a protective effect on workers chronically exposed to trichloroethylene.

-- Cond. from Bull. Hyg.

- 783 Blood Dyscrasia after Contact with Petrol Containing Benzol. J. A. McLean.
Med. J. Australia 2, 845-849 (Nov. 26, 1960).

A diversity of blood disorders is shown by a hematologist to follow the use of petrols containing benzol. Fatal aplastic anemia occurred in 3 patients as follows: a boy aged 14 who syphoned petrol by mouth, for a boat, 3 times a week for 8 weeks, died 2 months later with

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terminal staphylococcal pneumonia; a garage worker aged 18, employed for 4 months, who aspirated petrol when occasionally syphoning, died in 3 months of cerebral hemorrhage; a deaf man who became a petrol pump attendant at the age of 65 became ill after 6 months, having inhaled high concentrations when putting his ear near the opening to judge filling, and died 9 months later. A man aged 37, who in 1958, aspirated a large quantity of petrol while attempting to unblock a motor car pipe, developed aspiration pneumonia and chronic neutropenia. A motor mechanic aged 34 who for 2 years washed car parts with petrol which he occasionally syphoned by mouth had thrombocytopenic purpura. These petrols contained 10% benzol. Hemolytic anemia, with cellular proliferation of the marrow, myelofibrosis and splenomegaly developed in an oil company employee aged 27 after 12 months exposure in an enclosed yard. This petrol contained not more than 1% benzol. In 1955, 5 months after the onset, when the hematocrit fell from 34% to 27% and there was a raised indirect serum bilirubin, the red cell life was one-half of normal. When on cortisone, with the hematocrit steady at 38%, other isotope investigations show a red cell survival of 25% normal with a compensatory active hemopoiesis and early destruction of tagged cells by the spleen. Glutathione stability test and, later, liver function tests and serum protein electrophoretic patterns were normal. Immature myeloid cells and normoblasts have increased in the blood but there is no evidence of leukemia.

-- Cond. from Bull. Hyg.

- 784 Meat and Milk Residues from Livestock Sprays. H. V. Claborn, et al.
J. Agr. Food Chem. 8, 439-442 (Nov.-Dec. 1960).

Before an insecticide can be recommended for use on livestock, studies must be made to determine whether it will contaminate meat and dairy products. Results of residue studies show that all the chlorinated hydrocarbon insecticides, Co-Ral, and malathion were excreted in the milk after spray treatments. Studies were also made on DDT, TDE, methoxy-chlor, chlordan, gamma chlordan, heptachlor, dieldrin, lindane, Strobane, toxaphene, malathion, and Co-Ral in the fat of beef cattle following spray treatments.

-- Public Health Eng. Absts.

INDUSTRIAL DUSTS

- 785 Pulmonary Infiltration with Eosinophilia. Report of Two Cases of Farmer's Lung.
D. Jackson and E. Yow. New Engl. J. Med. 264, 1271-1275 (June 22, 1961).

Two cases of pulmonary infiltration and eosinophilia associated with the inhalation of dust of moldy hay are reported. The syndrome has been called farmer's lung. Both patients were treated with steroids early in the course of the disease and recovered completely. The disease is due to a hypersensitivity reaction to inhaled molds. It begins with cough, wheezing, dyspnea, fever and weight loss. With repeated exposure, it may progress to chronic obstructive emphysema and pulmonary fibrosis. There are 15 references to the subject in the bibliography.

-- Authors' summary

- 786 Angiopneumography in Suberosis. L. de C. Cancellia. Gaz. Med. Portuguesa 13, 342-357 (May-June 1960). Portuguese. (Gazeta Médica Portuguesa, T. da Conceição, A. Lapa, 7, R/C, Lisbon, Portugal *).

Suberosis is the pulmonary condition associated with prolonged exposure to cork dust. The author explains the technique of angiopneumography, which involves injecting contrast medicine into a vein, and taking 8 radiographs of the lungs at intervals of one second,

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with a final film at 12 seconds. The object is to follow the contrast medium through the pulmonary vascular tree. He submitted 14 patients with suberosis to this procedure; they had worked for 11-45 years in atmospheres containing abundant cork dust, and the examination revealed marked extension of the phase during which the medium is visible in the arteries (normally 2-3 seconds), prolongation of the capillary phase (normally occurring at 4 seconds), and retardation and extension of the phase when the medium is in the veins (normally occupying the period 5-7 seconds after injection). From 7-8 seconds onwards the pulmonary vessels are normally free from contrast medium, but in one of the present series of patients the arterial and venous phases were seen overlapping at 12 seconds. Other phenomena were that the pulmonary artery was not increased in volume, there were enhanced visualization of the peripheral vessels and narrowing of the arteries in the lower zones, displacements of vessels and short circuits in the pulmonary vascular circulation. In several patients abnormal angiopneumographic records corresponded with insufficiency of pulmonary ventilation as revealed by the other tests, and the author therefore commends the procedure for study of the pulmonary circulation time.

-- Bull. Hyg.

- 787 A New Method for Massive Dust Exposures by Inhalation. J. D. MacEwen, et al. Am. Ind. Hyg. Assn. J. 22, 109-113 (Apr. 1961).

A chamber has been designed which delivers a massive inhalation dose to anesthetized animals in a short period of time. The chamber consists of a vertically mounted cylinder with exposure ports arranged so that only the animals' heads are in the dust cloud. Studies have been undertaken exposing albino rats to strontium and rare earth oxides in the chamber. Data indicate that reproducible chamber concentrations are achieved, and that uniform pulmonary deposition of test material proportional to exposure time is accomplished.

-- Authors' abst.

- 788 Further Research on the Action of Oligomer Dissolved Silicic Acid in Tissue Cultures. Else Knake and H. Peter. Beitr. Silikose-Forsch. No. 68, 37-40 (1960). German.

In an earlier paper, the authors were unable to show that silica in culture media in a strength corresponding to the blood level of silica in severe silicosis (10 micrograms/ml.) had any effect on the growth of portions of spleen and lung of rabbits. This result is different from that of other investigators. Kirsch tested the action of various strengths of silica solution on the swelling of mitochondria. The maximum effect was produced by solutions of between 50 and 100 micrograms/ml, while with weaker solutions (up to 5 micrograms/ml.) no connection could be shown between the concentration of silica and its action. This last finding regarding the effect of low concentration agrees with the authors' findings. Details are given of the method of culture of spleen and lung tissue. To the fluid phase of the media of half of the cultures silica was added. The other half were controls. The trial lasted 3 to 6 months. Histological examinations of the control cultures of the spleen are detailed, it is then stated that there is no difference with the cultures in culture media with added silica. A similar result is recorded with the lung culture. In both the test and control collagenous fibers developed equally. The action of the silica solution was not to promote either the development of fibers or their hyaline degeneration. The authors discuss the solubility theory which their research tends to disprove.

-- Cond. from Bull. Hyg.

- 789 The Topographic Distribution of Massive Conglomerate Lesions in Silicosis. M. Finulli and F. Bellini. Med. lavoro 51, 705-713 (Nov. 1960). Italian.

The authors studied chest x-ray pictures from 800 patients affected with confluent silicosis; ages varied from 40-60 years or more and duration of exposure to the hazard ranged from 5-20 or more years. The work of 467 had been in mines. When the confluent patches were on one side only the right chest was twice as often involved as the left; the upper lobes were most commonly affected. Upper lobe lesions were seen 3 times as often on the right side as on the left. Half the patients with bilateral lesions showed these to be symmetrically sited. In these cases, too, the upper lobes were most commonly affected. Where an active or open tuberculous condition had supervened no significantly higher frequency was noticed on either side of the chest; the lesions still tended to be most prevalent in the upper lobes.

-- Cond. from Bull. Hyg.

- 790 Familial Predisposition to Silicosis. A. Feldmann.
Zentr. Arbeitsmed. u. Arbeitsschutz. 10, 229-233 (Oct. 1960). German.

This investigation was prompted by the publication of a paper by Jacob on familial predisposition in silicosis. The essential material consists of 391 families in which the father or eldest brother is taken as the central figure, and 262 of these were victims of silicosis. The first task was to find if the severity of the disease in the father or eldest brother was reflected in the other members of the family in an increased incidence. The incidence was found not to be greatly different whatever the degree of silicosis in the central figure. The number of cases in the families under consideration was then compared with the number found in the total employed population, and proved to be very similar. This was also the case with the proportion of silicotics in the employed group who had no family connections. The author is of the opinion that a familial predisposition to silicosis cannot be proved from his material. He believes that differences in the development of silicosis are due to other factors such as variations of dust inhalation owing to the variety of exposure at the working place, as well as certain peculiarities of the respiratory tracts.
-- Cond. from Bull. Hyg.

- 791 Some Oxidative and Hydroxylative Actions of Quartz: Their Possible Relationship to the Development of Silicosis. L. W. Marasas and J. S. Harington.
Nature 188, 1173-1174 (Dec. 31, 1960).

After reference to previous observations of Weyl on the oxidative power of fractured surfaces of quartz or silica gels, the authors describe new experiments in this field. They found that shaking 1 g. of quartz with 5 mg. of proline for 30 minutes produced a small amount of hydroxyproline, equivalent to the effects of 2 or 3 mg. of hydrogen peroxide. Coarse quartz had less effect than fine quartz. A number of other reactions (oxidation of hydroxylations) are also described. All these are believed to be catalytic reactions in which oxygen from the air is used. This is followed by speculations in how this effect could be used to explain the development of silicosis.
-- Bull. Hyg.

- 792 Investigation of the Defect of Lung Function in Obstructive Emphysema and in Silicosis of Various Degrees of Severity. G. Reichel, W. T. Ulmer and F. Hertle.
Beitr. Silikose-Forsch. No. 68, 1-36 (1960). German.

This is an attempt, by the use of a refinement of methods of investigation, to separate the effects on lung function caused by silicosis, from those caused by the most important form of emphysema, diffuse obstructive emphysema. Defects of lung function may arise from defective distribution. Ventilation may be normal but the blood supply to different alveolar areas may be altered—a circulatory defect. On the other hand, the blood supply may be normal but there may be obstruction in the airways or an unequal ventilation of alveoli—the obstructive form of ventilatory defect. A second form of ventilatory defect is produced by rigidity of the lung tissue—the restrictive type. The apparatus used and the methods employed are fully described. The investigation included 179 patients suffering from obstructive emphysema who had never been exposed to dust and 149 patients with silicosis. The expiratory carbon dioxide concentration curve traced by the infra red absorption recorder was used as a means of distinguishing the obstructive from the circulatory and restrictive types of defect. The curve in the healthy person and in those with the circulatory defect both show a plateau. In patients suffering from bronchitis and emphysema, the obstructive type was expected and it was found in 85% of cases. Except in very severe cases only 6% of the silicotic patients showed this obstructive type, and those who did so, had clinical signs of bronchitis. In normal persons the alveolar and arterial carbon dioxide pressures agree but in silicosis cases they may differ by 3 or 4 mm. Hg. according to the degree of silicosis. Even in the early stages of silicosis, lung function defects are present to the extent of 45% and this percentage increases with radiological progression. Only in advanced cases of silicosis is there evidence of an obstructive ventilatory defect.
-- Cond. from Bull. Hyg.

03120906

- 793 Types of Asbestos, Their Study by Optical Methods and Their Pathogenic Action. K. G. Schmidt. Staub 20, 173-180 (June 1960).

It is shown that with the polarization and phase contrast microscope it is comparatively simple to distinguish 11 types of asbestos. The code for the determination is given. The behavior of these types of asbestos in regard to health is tested. Chrysotile, amosite, and crocidolite asbestos are dangerous. Tremolite or anthophyllite may cause illness. Too little is known about the other types of asbestos. At present it is necessary that all asbestos dusts be treated as being injurious to the lungs. -- APCA Absts.

PHYSICAL ASPECTS OF THE ENVIRONMENT

- 794 Underwater Swimming and Loss of Consciousness. A. B. Craig, Jr. J. Am. Med. Assn. 176, 255-258 (Apr. 29, 1961).

Under certain circumstances, a person swimming under water may lose consciousness. Eight incidents described in this paper indicate that hyperventilation before breath-holding and exercise may delay the onset of the urge to breathe. Before the partial pressure of carbon dioxide increases significantly, the oxygen may decrease to a degree incompatible with high-level cerebral function. In 5 cases of drowning also reported, this chain of events is likely to have occurred. Discussion of the details suggests that certain preventive steps can be taken without discouraging swimmers from learning to handle themselves under water. -- Author's abst.

- 795 Arthroses in Decompression Sickness. V. Raymond. Arch. maladies profess. 21, 609-621 (Oct.-Nov. 1960). French.

Arthroses of the shoulder and hip attributed to decompression sickness were included in the list of notifiable occupational diseases in France on the 9th of February, 1949 following a recommendation from the Industrial Hygiene Committee of the Ministry of Labor. Subsequently, the number of registered cases of this affliction in caisson workers and divers rose steadily, reaching a peak incidence in the years 1952, 1953, and 1954, but afterwards stabilizing at a level of 7 new cases a year. Altogether, 111 cases have been notified in the 10-year period after 1949, but it has not been possible, for various reasons, to relate the incidence to the population at risk. The author has studied 30 of the notified cases, 27 caisson workers and 3 divers and reports his findings in detail. The findings differ in no respect from those reported by other investigators in the past. The opinion is expressed that arthroses in decompression sickness are similar radiologically and otherwise to the degenerative arthroses, but develop at an earlier age, and that they result from the repeated attacks of minor pains ("niggles") to which caisson workers and divers are subjected. Bone and joint changes in decompression sickness may be due to air emboli in the bone cavities and in the terminal arterioles of the head of the femur and of the humerus but the alternative suggestions put forward in this paper is that of changes in the spinal cord and in the fine branches of the peripheral nerves due to air emboli. -- Bull. Hyg.

- 796 Routine Examination of Compressed Air Workers. R. Tillmann. Z. ges. Hyg. u. ihre Grenzgebiete 9, 790-796 (Dec. 1960). German. (Zeitschrift für die gesamte Hygiene und ihre Grenzgebiete, Clara-Zetkin-Strasse 96, Berlin W8, Germany=).

In East Germany the law requires that all workers with compressed air be given at least an annual routine examination by methods which are stated. From his experience with

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dockyard workers the author makes proposals for the amplification of the legal requirements as regards examination which he considers would be useful in a variety of ways. The proposals are set out in detail with tables and forms to be used for the recording of information. Included are questions to be asked to ascertain the past and present history of the worker, the details of the findings of x-ray examination and audiometer testing and the special methods of their recording. Although it is realized that these forms for recording may appear at first sight to be an extra burden on the examiners, the author considers that this will not be found to be the case. Furthermore, these forms from all industries where compressed air workers are employed would, if collected at some central place, constitute valuable material for comparative studies.

-- Cond. from Bull. Hyg.

- 797 Auditory Hazards in a Diesel Engine Test House. R. R. Coles and J. J. Knight. Ann. Occ. Hyg. (London) 2, 267-273 (Nov. 1960).

Noise levels measured at working positions inside a diesel engine test house ranged from 102-116 db, and were in excess of accepted damage risk criteria. Audiometric tests on 6 men who had been working regularly in this location over a mean period of 3 1/2 years, showed that all had hearing losses of 45-60 db, in one or both ears at 3, 4, or 6 kc per second. The occurrence of temporary threshold shift confirmed the hazardous nature of the noise exposure.

-- Bull. Hyg.

- 798 Morale of Workers Exposed to High Levels of Occupational Noise. Jean S. Felton and Carol Spencer. Am. Ind. Hyg. Assn. J. 22, 136-147 (Apr. 1961).

An investigation was made of workers laboring under extremely high noise exposures, and a control group of employees subjected to normal factory noise. Through socio-metric studies and personal interviews, the administration of a scale especially devised to test job perception as a function of ego-involvement in work, and a review of illness-absence rates, injury rates, and frequency of dispensary visits, it was demonstrated that the Study Group, subjected to the highest noise levels and the most hazardous operational conditions, had a significantly higher level of morale than the Control Group, which labored under conditions which would appear to be far more advantageous. It was concluded that adverse factors such as noise and other disagreeable or even dangerous working conditions, do not determine morale or affect behavior on the job, but rather that high morale results from the worker's perception of his working conditions and his degree of ego-involvement in his job.

-- Authors' abst.

RADIOACTIVITY AND X-RADIATION

- 799 Dose to the Eye from Radiographic Procedures. E. F. Focht, et al. Radiology 76, 459 (Mar. 1961).

With the aid of a phantom previously used in the study of radiation cataracts, measurements were made of the dose of radiation received by the eye in the course of various diagnostic x-ray procedures directed to the head and neck. The inherent filtration of the unit used was 0.5 mm. aluminum. Measurements were made both with and without added filtration of 2 mm. aluminum. The doses incident to various procedures were tabulated. Even with repeated exposures, none of the doses to the lens approached cataractogenic level. In view of previous studies, it appears extremely unlikely that a cataract would develop from any of the usual diagnostic procedures even with repeated exposures. Since the lens is the most radio-sensitive ocular structure, no other eye damage is likely to occur.

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

03120908

- 800 The Problem of Over-Irradiation. B. W. F. Bishop. Brit. J. Plastic Surg. 13, 354 (Jan. 1961). (British Journal of Plastic Surgery, E. and S. Livingstone, Ltd., 16 Tevoit Place, Edinburgh, Scotland*).

Plastic surgeons are confronted more and more frequently with the difficult task of repairing the ravages of over-irradiation. While they may see only a very small percentage of the patients who have received irradiation treatment, nevertheless the author observed a considerable number over a period of 4 years, and he agrees with McIndoe that if radiotherapy is used at all, only a single dose should be given, and that the treatment of skin cancer is primarily surgical. Emphasis should be placed on adequate early excision. The author also comments on the relationship between over-irradiation and the occurrence of squamous carcinoma, pointing out that a large percentage of patients with skin cancer have a history of having received roentgen irradiation. He discusses the pathologic aspects of the acute and late effect of irradiation and in commenting on the clinical features he cites a number of case histories. The treatment of irradiation damage requires excision and repair. The indications for the use of various types of grafts are discussed. The author urges among other factors propaganda among the medical profession concerning the hazards of injudicious radiotherapy; benign conditions especially in children should not be irradiated; and equipment should be accurately calibrated to ensure correct dosage. -- J. Am. Med. Assn. References and Reviews

- 801 Leukemia and Lymphoma Mortality in Relation to Cosmic Radiation. L. Craig and H. Seidman. Blood 17, 319 (Mar. 1961).

Leukemia death rates (1949-1951) for 163 U.S. standard metropolitan areas were compared with corresponding cosmic ray intensities as measured by elevation. The data indicated that at usual U.S. habitation levels variation in cosmic ray intensity either has no effect upon leukemia and lymphoma mortality or has very small effect as compared to other factors. Congenital malformation death rates for 163 areas were also compared to elevations. The consistency in congenital malformation death rates over all but lowest elevation zone indicated that the variation in cosmic ray intensity does not play an important part in the mortality from this disease. -- J. Am. Med. Assn. References and Reviews

- 802 Environmental Monitoring at Georgia Nuclear Laboratories - AFP 67. J. M. Selby, B. M. Bowen and J. H. Edgerton. Am. Ind. Hyg. Assn. J. 22, 114-118 (Apr. 1961).

The environmental monitoring program initiated at AFP-67 consists of two parts: on-site sampling and off-site sampling. The on-site program provides data on the changes in concentration in the environs and is used for protecting plant personnel from any hazard which might occur. The off-site program provides a continuous record of the fluctuation in background levels and of the effectiveness of the plant radiation controls. The off-site and on-site environmental monitoring programs, consisting of the sampling of soil, vegetation, water, air, animal, and marine life and dose measurements using film, foils, chemical dosimeters and ionization chamber dosimeters, are discussed. -- Authors' abst.

- 803 Radioactive Waste Disposal at the Georgia Nuclear Laboratory. B. M. Bowen, J. M. Selby and J. H. Edgerton. Am. Ind. Hyg. Assn. J. 22, 119-123 (Apr. 1961).

A system of mixed bed demineralizers is used on the 10 megawatt reactor to reduce radioactivity in liquid waste to low levels. Chemical treatment is also provided in the liquid disposal systems. Solid radioactive wastes are buried. Geological and hydrological parameters control selection of areas for infiltration basins, storage, and burial. Sampling and monitoring of both wastes and the environment show that permissible limits of activity have not been exceeded. -- Authors' abst.

* Address not in current List of Periodicals.

03120909

- 804 A Proportional Liquid Effluent Sampler for Large-Volume Flows. H. H. Abee and J. C. Hart. Am. Ind. Hyg. Assn. J. 22, 133-135 (Apr. 1961).

A proportional sampler for large-volume liquid flows has been designed, installed, and tested at the White Oak Creek Dam. The basic unit consists of a circulating pump and a collecting vessel controlled by an overflow pipe which varies in height in proportion to the head of the stream. The sampling period is normally 10 minutes and can be adjusted for optimum conditions by regulating the timing mechanism. It is adjustable to wide variations in stream head, requires little maintenance, and minimizes clogging resulting from debris, incrustation, and algae formations.

-- Authors' abst.

- 805 Industrial Hygiene Techniques in the Decontamination of a Building Contaminated with Radium. R. L. Hoover. Am. Ind. Hyg. Assn. J. 22, 83-85 (Apr. 1961).

Radium contamination had built up in a large office building over a period of 40 years. The radiation levels were as high as 500 mrem/hr. with alpha contamination greater than 40,000 d/m. per 100 sq. cm. From an industrial hygiene point of view, the major problems associated with the decontamination of the facility were: (1) keeping from tracking contamination into clean areas; (2) keeping the workers from becoming contaminated; (3) keeping the workers' exposure to external ionizing radiation as low as possible; (4) keeping inhalation and ingestion of radium from occurring; and (5) keeping future inhabitants of the building from receiving any radiation exposure as a result of their working in the building. The building was decontaminated to a maximum of 0.2 mr/hr. at a distance of one foot from any surface and the radon plus its daughter's activity was reduced to levels of less than 10^{-9} microcurie per cc.

-- Author's abst.

- 806 A Study of Occupational Radiation Exposure in New York State. A. P. Abrahams, P. Carmichael and M. Kleinfeld. Am. Ind. Hyg. Assn. J. 22, 124-129 (Apr. 1961).

A statistical study of occupational radiation exposure in New York State industry, based on personnel monitoring records, survey data and results of medical examinations, was made by the Labor Department. Exposures were classified by source, occupation and industry. The results indicated that over 90% of the exposures were below the NCRP recommended dose limit of 100 mrem/week, and that the contribution of occupational exposure to the general population dose was less than 0.3%. The highest external exposures noted were among workers in radium processing, luminous dial painting, industrial radiography and nuclear fuel element fabrication. Sampling results indicated that air-borne concentrations of radioactive contaminants in all but a few installations were below 10% of the MAAC.

-- Authors' abst.

- 807 Guarding Against Major Radiation Accidents in a Large City. D. E. Lynch. Am. Ind. Hyg. Assn. J. 22, 130-132 (Apr. 1961).

The New York City plan for handling radiation accidents relies in the main on control at the accident scene by the Police Department, hazard evaluation by the Health Department and Atomic Energy Commission radiation specialists, a communication plan using telephone and Civil Defense two-way radio, and advance information on storage locations or shipments of hazardous quantities of radioactive material. Possibilities of accidents to water supply and certain other accidents not covered in the plan are discussed.

-- Author's abst.

03120910

ENVIRONMENTAL MEASUREMENTS

- 808 Mobile Air Sampling Station Tracks Smog. Anon. *Air Eng.* 3, 34, 43 (Jan. 1961).

Although Orange County, California, has not present smog problem, the area is expanding and becoming industrialized. In order to meet this rising challenge a mobile laboratory was acquired to study air pollution trends. By use of this vehicle the County helps to eliminate trouble spots before they reach the danger stage. Hydrocarbons, carbon monoxide, oxidants, nitric oxide, nitrogen dioxide, and sulfur dioxide are evaluated. The unit has its own power supply. -- Public Health Eng. Absts.

- 809 Parameters of Aerometric Measurements for Air Pollution Research. R. I. Larsen. *Am. Ind. Hyg. Assn. J.* 22, 97-101 (Apr. 1961).

A brief description of a continuous gas sampling network is presented in which a number of air pollutants is to be measured in six United States cities beginning about mid 1961. Parameters are presented of aerometric measurements from a two year study of sulfur dioxide in Louisville, Kentucky, to be related to health and other effects. Six equations are developed to depict the frequency, duration, and air pollution dosage. -- Author's abst.

- 810 Sodium Diphenylaminesulfonate as an Analytical Reagent for Ozone. H. H. Bovee and R. J. Robinson. *Anal. Chem.* 33, 1115-1118 (July 1961).

Sodium diphenylaminesulfonate, selected as an analytical reagent for the determination of ozone, reacts with ozone to form a turquoise blue produce with an absorption maximum at 593 millimicrons. The reagent has been tested under various conditions to determine the effects of pH, temperature, concentration, type of sampling equipment, and rate of sample flow on its reaction efficiency. The effects of nitrogen dioxide, chlorine, hydrogen peroxide, and other interferences have been investigated. An analytical procedure using 1% sodium diphenylaminesulfonate in 0.02% perchloric acid solution has been developed and tested for precision. It gave satisfactory results when field tested with ozone formed by inert gas-shielded welding arcs and by an electrostatic precipitator. -- Authors' abst.

- 811 Absorptivities for the Infrared Determination of Trace Amounts of Ozone. P. L. Hanst, et al. *Anal. Chem.* 33, 1113-1115 (July 1961).

Long-path infrared spectrophotometry provides a most specific method for measuring ozone in air. Concentration range of ozone for analysis is between 0.5 to 1.0 ppm. Other compounds in the air samples do not interfere. Results agree with those obtained by ultraviolet photometry. -- AC Brief

- 812 Automotive Exhaust Gas Analysis by Gas-Liquid Chromatography Using Flame Ionization Detection. Determination of C₁ to C₆ Hydrocarbons. R. Feinland, A. J. Andreatch and D. P. Cotrupe. *Anal. Chem.* 33, 991-994 (July 1961).

Gas chromatographic techniques using the flame ionization detector have been applied to the determination of automotive exhaust gas hydrocarbons including C₁ to C₆ compounds and several C₆ compounds. Because of the high sensitivity of the detector, it is possible to analyze a 1 ml. gas sample without a concentration step. Two columns are used to resolve the components. The minimum detectability using a 1 ml. sample is estimated to be 0.01 ppm for n-butane. The standard deviation for n-butane standards at the 10 to 100 ppm level is 4%. A comparable level of reproducibility may be expected for various components in exhaust gas samples which are not subject to peak overlap. -- Authors' abst.

- 813 Subjective Intensity of Coffee Odor. T. S. Reese and S. S. Stevens.
Am. J. Psychol. 73, 424-428 (Sept. 1960). (American Journal of Psychology, Department of Psychology, Mezes Hall, University of Texas, Austin 12, Texas*).

To avoid some of the uncertainties that characterize efforts to control the exact concentration of an odor when it is sniffed from an open bottle, or introduced into the nose under some pressure, a technique was developed involving the use of a plastic and aluminum sniffing bag and a nose piece. Different concentrations of the odor of coffee were obtained by mixing odor and air in various proportions. The method of magnitude estimation was then used to obtain a ratio scale of the subjective intensity of the odor. For a group of 12 men, the subjective intensity was found to grow as the 0.55 power of the concentration. Results for a group of 8 women gave a function with a flatter slope, but it is suggested that this result is probably not representative. Similar exploratory experiments with heptane gave evidence of a power function with an exponent of the order of 0.6. The fact that the apparent intensity of odors grows as a power function of the concentration is consistent with the law that appears to govern other sense modalities.

-- APCA Absts.

- 814 Air Sampling and Analysis of Lead on Paper. S. H. Judd and B. D. Tebbens.
Am. Ind. Hyg. Assn. J. 22, 86-89 (Apr. 1961).

A new procedure for the analysis of air-borne lead has been developed, based on chromatographic principles. The system is applicable to other metals, including bismuth, cadmium, cobalt, copper, manganese, mercury, and tin. A similar approach concerning the determination of thallium by electrophoresis has been reported, using an AISI smoke sampler set to sample for one hour with a space interval of 12 inches. The authors of this paper reached similar conclusions regarding the potential usefulness of this technique.

-- Authors' summary

- 815 Nine Years Experience with the Davis Halide Meter. A. W. Schaffer and H. R. Hoyle.
Am. Ind. Hyg. Assn. J. 22, 93-96 (Apr. 1961).

Although the Davis Halide Meter is one of the best portable instruments so far encountered for the evaluation of health hazards which may result from the inhalation of organic chloride vapors, it has not been completely free of difficulties. These problems are described along with corrective measures which have been developed. A partial list of items considered includes: effect of water vapor, inability to zero the instrument, effect of slit width, effects of high concentrations of organic halide vapors upon subsequent use and required calibration.

-- Authors' abst.

PREVENTIVE ENGINEERING

- 816 Control of Fume from Electric Steel Melting Furnaces. R. T. Pring.
Air Cond. Heat & Vent. 58, Part 1, 45-50 (Jan. 1961); Part 2, 121-125 (Feb. 1961).

Part 1 of this article tells how special hoods and gas cleaners can be applied to control both indoor and outdoor air pollution from electric steel melting furnaces. Part 2 evaluates the various fume control arrangements and computes the ventilation rates for furnace roof ring diameters from 6 ft. to 18 ft.; gives a very useful table of comparison of ventilation methods for general and local exhaust ventilation; discusses gas cleaning equipment

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and methods for wet scrubbers (orifice-type, venturi-type, and rotary disintegrators), cloth filters (tubular type, mechanically shaken and with reverse air cleaning), and electrostatic precipitators, submitting a table of comparison. It shows how hoods and gas cleaners can solve an air pollution problem.

-- Cond. from Public Health Eng. Absts.

- 817 Air Cleaning for the Secondary Smelting Industry. D. J. Blum and J. K. Blum. Air Eng. 2, 33-34, 59 (Dec. 1960).

Metal reclaimers and secondary smelters often generate air pollution problems. Some are combustion problems: examples include production of alternate reducing and oxidizing temperatures, low temperatures, exceedingly high temperatures, afterburning, incineration, and metallic fume. Some reclamation processes require procedures that produce airborne particulate matter, others must be conducted at temperatures below those necessary for good combustion. Air pollution control must be planned so as not to interfere with production. Open burning to separate combustible materials from noncombustible metals is economical but produces large volumes of black, acrid smoke. Automobile burning can be accomplished continuously on a conveyor in an incinerator. Melting of scrap metal requires particular attention to oxidizing, neutral or reducing atmosphere; flux and slag control to protect the metal from the atmosphere; and control of emission from the furnaces. Emission control at the source is desirable but in some refining operations is impractical. A charge of metal scrap may lose as much as 10% by weight up the flue.

-- Cond. from Public Health Eng. Absts.

- 818 Power and Space Requirements for Electrostatic Precipitators. R. A. Benbroeder. Air Eng. 3, 23-24 (Jan. 1961).

There are 3 primary conditions which determine size: (1) the gas volume to be cleaned; (2) the required efficiency; and (3) the physical layout of adjoining equipment. Secondary factors include temperature of the gas, dust loading, and particle size. Valuable aid can be obtained by studying a similar application. Width and height relationship can be varied to permit geometry, and scraper bottoms for hoppers may be used to reduce height in certain installations. Power requirements are directly related to the size of the installation. Better distribution of the gas stream permits the use of smaller equipment. Research has been an important factor, also, in controlling size. Changes in discharge electrode design and automatic power control, which permits operation at the maximum permissible power level at all times, have helped reduce power costs.

-- Public Health Eng. Absts.

COMMUNITY AIR HYGIENE

- 819 An Appraisal of Air Pollution in Minnesota. Minnesota Department of Health, University Campus, Minneapolis 14, Minnesota. 73pp. (Jan. 1961).

A statewide survey of the air pollution situation in Minnesota was conducted by the Minnesota Department of Health with the cooperation of the U.S. Public Health Service from October 1959 to July 1960. Findings of this study are presented in 8 technical sections each of which discusses one aspect of the air pollution problem. The report summarizes sources and resultant effects of air contaminants in the state, reviews available air quality data, and points up the influence of meteorology and population growth on future problems. Legislative requirements to serve the needs of both the small local communities and the major metropolitan complexes are discussed. In addition, special attention is devoted to solution of the metropolitan area problem.

-- Public Health Eng. Absts.

- 820 Mortality, Fog and Atmospheric Pollution. An Investigation During the Winter of 1958-1959. A. E. Martin and W. H. Bradley. Med. Research Council (Brit.), Monthly Bull. 19, 56-73 (1960). (Medical Research Council (British), British Library of Information, 50 Rockefeller Plaza, New York 20, N. Y. *).

The winter of 1958-1959 was characterized by a considerable number of foggy days. There were several pronounced fog incidents in Greater London, each accompanied by a marked increase in mortality. Among these the incident of February 18-20 coincided with the climax of an epidemic of influenza, the day of the greatest atmospheric pollution being also the day of highest mortality during the epidemic. The atmospheric conditions may, therefore, have had an effect in determining the time at which the epidemic mortality reached its peak. The effect on mortality was an immediate one and the deaths usually fell on the following day. Correlation tests showed a significant positive association between black suspended matter in the atmosphere and the daily number of deaths, a slightly less but still significant association between atmospheric sulfur dioxide and deaths and a significant negative association between visibility and deaths. The relative importance of atmospheric sulfur dioxide, black suspended matter and various meteorological factors is discussed. Bronchitis deaths did not show as high a correlation with atmospheric conditions as the total daily deaths and in the case of the daily pneumonia deaths no significant association was found. The probable effect of atmospheric conditions on persons suffering from cardiovascular disease is discussed.

-- Public Health Eng. Absts.

- 821 A Study of the Relation of Visibility to Air Pollution. E. W. Burt. Am. Ind. Hyg. Assn. J. 22, 102-108 (Apr. 1961).

Attempts to determine a workable relationship between visibility and the soiling index of air sampling tapes are described. It is shown that visibility is a function of relative humidity, whereas soiling index is not. Albeit the visibility-soiling index-humidity correlations were significantly different from zero at a high level of confidence, they are not of such quality as to permit good quantitative estimates of soiling index from measurements of visibility and humidity. The reproducibility of soiling index within reasonable limits is questioned, since under nearly identical visibility and humidity conditions the soiling index values vary over a relatively wide range.

-- Author's abst.

- 822 Noncatalytic Auto Exhaust Combustor. C. H. Worsham, R. B. Long and J. P. Longwell. J. Air Poll. Control Assn. 11, 135-140 (Mar. 1961).

Pilot studies of the 1 1/2 inch diameter reactor were confined to simulated exhausts consisting of 0.2-0.9% n-butane in nitrogen containing sufficient oxygen for combustion. The effects of temperature and gas velocity on the combustion characteristics were determined. These experiments have shown that oxidation of n-butane in the simulated exhaust begins at temperatures of approximately 900-1100°F as evidenced by carbon monoxide and carbon dioxide formation. The data suggest the possibility of a surface catalyzed process for the pre-ignition reactions. Mass spectrometer analyses show that approximately 20-35% butane cracking also occurs at 1300-1400°F. The data were used as a basis for designing the prototype exhaust combustor which was tested on the engine. The prototype exhaust combustor attached to the engine running on leaded gasoline gave total removal of the carbon monoxide and hydrogen, and greater than 70% removal of hydrocarbons over a wide range of engine speeds. The hydrocarbons remaining in the exhaust are less than 0.1% which may be at the detection threshold of the mass spectrometer used. Comparison of the data with and without added air shows that the exchanger has little effect on exhaust composition at low speeds if no air is added. As a result of the experiments reported, it is felt that a satisfactory noncatalytic exhaust combustor can be developed.

-- APCA Absts.

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- 823 The Application of the Copper Oxide Alumina Catalyst for Air Pollution Control.
S. Sourirajan and M. A. Accomazzo. *Can. J. Chem. Eng.* 39, 88-93 (Apr. 1961).

The copper oxide alumina catalyst developed in this program of investigations has been found to be efficient for the continuous and simultaneous removal of hydrocarbons and carbon monoxide present in auto exhaust gases. The catalyst showed no deterioration in performance even after 100 hours of continuous service in conjunction with exhaust gases from an auto engine running on leaded gasoline. Instantaneous catalyst temperatures of the order of 900°C have been encountered in this work with no deleterious effect on the subsequent effectiveness of the catalyst. By proper choice of the converter design, the heat liberated during the reaction can be advantageously used to maintain the full effectiveness of the catalyst under all conditions of engine operation encountered in normal practice. Aside from the experiments with the auto exhaust gases reported, the copper oxide alumina catalyst developed in this work has possible application in any air pollution control device concerned with the removal of hydrocarbons and carbon monoxide present in low concentrations.

-- APCA Absts.

MANAGEMENT ASPECTS

- 824 Steelworkers May Go It Alone for Health Care. Anon. *Modern Hosp.* 95, 65 (Oct. 1960).
Feature Report. (Modern Hospital Publishing Co., 919 N. Michigan Ave., Chicago 11, Ill.*).

The United Steelworkers of America may choose to test other approaches toward providing 1,200,000 steelworkers and their families with medical care if benefits under existing plans cannot be made more satisfactory. Four major problems were pointed up in a report of the Union's Insurance, Pension, and Unemployment Benefits Department presented at the 1960 annual convention in Atlantic City. The points cited were: (1) inability of the steelworkers to get fee schedules accepted as full payment; (2) rising costs of insurance; (3) evidence that prepayment plans with group-practice clinics may offer greater benefits at less cost; and (4) failure of existing programs to guarantee the quality of medical care. Since development of a new program would be complex, a series of small pilot projects might be undertaken in selected areas. The difficulties of obtaining capital funds for construction of needed facilities may be solved by help from various sources, including loans from union pension reserve funds, loans from steel companies, government grants, and philanthropy.

-- J. Occ. Med. Absts.

- 825 Medical Care--A Fringe Benefit. A. Barnes. *Ind. Med. & Surg.* 29, 78-81 (Feb. 1960).

About 70 years ago Samuel Gompers set about organizing workers on the basis that everyone was entitled to fair compensation for his toil. He organized labor justly and created a new opportunity for industrial workers to share in the fruits of their production. The oldest management medical care plan dates back to 1868. It is natural that unions would also become interested in medical care plans. The first union health center was established by the International Ladies' Garment Workers in 1913. Events of World War II helped to stimulate the interest of unions in medical care. The wage and hour freeze made fringe benefits attractive. The ruling of the National Labor Relations Board, supported by the courts, that health and welfare funds were suitable subjects for collective bargaining brought many labor unions and employers into cooperation on medical care plans. The more enlightened management has long recognized the value of a healthy working force. Organized labor's health goal may be simply stated as the provision of "comprehensive medical care on a prepaid basis at cost within everyone's reach, for every worker and his family." In many cases, management has

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been quite sympathetic. The United Mine Workers Welfare and Retirement Fund was established in 1947, "pursuant to the Labor-Management Relations Act of that year, as an irrevocable trust to be located in Washington, D.C. In conformity with terms of the trust agreement and with federal statutes governing trusts, the Fund is organized and administered by a board of three trustees as a separate entity, independent of the union and the coal operators."

-- Cond. from J. Occ. Med. Absts.

ACCIDENTS AND PREVENTION

- 826 Emotions and Traffic Accidents. S. S. Dubin. *Traffic Safety* 58, 4-9 (June 1961). (Traffic Safety, National Safety Council, 425 North Michigan Ave., Chicago 11, Ill.*).

Slaughter and mutilation on our highways, as a result of traffic accidents, have reached epidemic proportions. This calls for preventive action on the part of Public Health departments just as surely as do other causes of death in our population. The National Safety Council finds that a very high proportion of automobile accidents are due to failures of the driver. In any case, this fact alone should be enough to point out that the driver, in all his facets, physical and psychological, should receive the greatest proportion of our effort when we tackle the problem of traffic accidents. Furthermore, it is well established that the factors of attitude, personality, and emotional adjustment are of greater importance in driving behavior than sensory defects, reaction, and psychomotor skills. In this paper emotions are defined and cases cited to illustrate their effect on driving. The author reviews some of the more important personality characteristics which are related to accident repeaters. He discusses the emotional significance of automobiles to people. The value of emotional appeals in safety programs is pointed out. Finally, specific emotional behaviors of the habitual driver and teenager are discussed. The article concludes with 20 references to the subject.

- 827 Protecting Health in Mines and Tunnels. Anon. *Michigan's Occ. Health* 6, 1-8 (Spring 1961).

Minimum standards for control of health hazards in mining, tunneling, and other underground operations have been prepared by the Division of Occupational Health, Michigan Department of Health in cooperation with the Division of Industrial Hygiene, City of Detroit. These standards fill the need of contractors, state and local governments and others involved in letting contracts for work in mining, tunneling, or other underground operations. The minimum standards are sufficiently broad to provide effective health control guidelines to cover all types of work involving earth moving, both on surface levels and underground in conditions of atmospheric pressure. No attempt has been made to include mechanical safety standards, which, although very important, are not within the area of responsibility of the Divisions. The minimum standards presented will enable appropriate consideration, bidding and subsequent fulfillment of many requirements necessary to assure a non-hazardous work environment. Such items as control of air contaminants, respiratory protective equipment, ventilation, first aid, rescue work, and sanitary facilities have been covered in detail and in the references. An extensive list of related U.S. Bureau of Mines publications follows the standards. These minimum standards have been carefully reviewed by representatives of the mining and other affected industries.

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- 828 Strained Muscles and Soaring Costs. Anon. Occ. Hazards 23, 17-19, 49-51 (July 1961).

Among other things the writer discusses preventive measures to reduce the high cost of lifting injuries. According to the U. S. Department of Labor, men never should lift more than 50 pounds unaided. Women should lift no more than 25 pounds. According to the National Safety Council, men should lift no more than 75 pounds or half their own weight, whichever is less. Women should lift no more than 35 pounds or a third of their own weight, depending on which is less. Not even the groups most capable of determining safe load limitations for human backs can agree. Moreover, what they do say is based on the theory that people are in normal good health. According to a safety bulletin issued by the Longhorn Division of Thiokol Chemical Corporation, physical differences make it impractical to set up safe lifting limits for all workers. Height and weight do not automatically indicate lifting ability. Among the factors which a supervisor and crew should consider in a lifting operation are: (1) Period of sustained lifting effort. (2) The height or heights of lift. (3) The degree of body rotation required. (4) The load weight in relation to body weight. (5) The size and shape of the load. (6) The distance the load is carried. (7) Change of levels during carrying. (8) Method of lifting. (9) Size and physical condition of the lifter. To hold down injuries due to lifting, it is suggested that machine power, not man or woman power be used. Let material handling equipment and controls do the work. They not only help reduce the high cost of lifting injuries—they speed production as well.

MISCELLANEOUS

- 829 Titan Treats Its Metal Wastes. W. M. Rumberger. Wastes Eng. 32, 34, 44 (Jan. 1961).

This metal manufacturing company has a waste treatment plant at Bellefonte, Pa., that processed 213,000 gallons of concentrated acid and 37,461,000 gallons of rinse waters during the period of January 1, 1959 to July 1, 1959. The wastes also include copper, chromium and zinc. The neutralization is done with a lime slurry and the metals are precipitated. Sludge is trucked in two large lagoons. The company has spent \$453,000 to collect and treat the wastes. Present cost of treatment is 48 cents per 1,000 gallons.

-- Public Health Eng. Absts.

- 830 How Shell Oil Controls Refinery Wastes. Anon. Power Eng. 64, 91-93 (Aug. 1960).

Since wastewater from Shell Oil Company's Wood River Refinery is discharged into the Mississippi River immediately above the raw water intake for East St. Louis, effective treatment of this refinery wastewater is a necessity. The treatment system consists of the following unit operations in series: automatic adjustment of pH between 8.0 and 8.5, clarification by flotation and sedimentation, aeration, clarification, equalization, and biological filtration. Adjustment of pH, which is required to improve efficiency of both clarification and air oxidation of hydrogen sulfide, is accomplished by injecting acid or caustic into the sewer upstream from the first clarifier. The wastewater is aerated to effect air oxidation of sulfides and mercaptans and to enhance air flotation of emulsified oil. Forced air draft is employed to supply oxygen to the biological growth in the trickling filter, which is constructed of blast furnace slag. Recycle of filter effluent is employed to reduce the sulfide concentration in incoming wastewater to below 10 mg./liter. "Test results show that the facilities completely remove sulfides and mercaptans, effect a 75% to 85% reduction in phenols, oil and solids; and reduce threshold odor about 95%."

-- Public Health Eng. Absts.

03120917

- 831 Status of Fluoridation in the United States and Canada, 1959. Task Group Report. J. Am. Water Works Assn. 52, 1513-1520 (Dec. 1960).

Of the 118 million people served by public water supplies in the United States, 43 million (36%) were using water containing at least 0.7 ppm fluorides. Controlled fluoridation was used for the supplies serving 36 million of these people, while 7 million people used water with naturally occurring fluorides. During 1959, 930,021 additional people in the United States and Canada adopted fluoridation, while 4 communities elected to discontinue it. Most of the 81 communities that adopted fluoridation during 1959 were small. Dental examinations of Grand Rapids' children after 15 years of fluoridation were completed in 1959. Results showed almost exact parallel with experience obtained in 1945 at Aurora, Illinois where fluorides occur naturally at near the optimum level. Resumes of other studies are given including fluoride removal by home water softeners, fluoridation of consolidated school supplies, survey of naturally occurring fluorides, fluoridation of home water supplies and feedability of fluoride compounds.

-- Public Health Eng. Absts.

- 832 Bacterial Insecticides. A. M. Heimpel and T. A. Angus. Bacteriol. Rev. 24, 266-268 (Sept. 1960). (Bacteriological Reviews, The Williams & Wilkins Co., 428 E. Preston St., Baltimore 2, Maryland*).

A bacterial insecticide is defined as a type of bacterium that produces an endotoxin which is poisonous to many Lepidoptera and some other insects. The review includes: (1) crystalliferous bacteria, (2) formation and characterization of the toxic crystals, and (3) their field application. Such insecticides are highly specific for many noxious insects but not harmful to warm-blooded animals.

-- Public Health Eng. Absts.

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