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INDUSTRIAL HYGIENE DIGEST

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Literature Abstracts

- MEDICAL
- ENGINEERING
- LEGAL --- decisions and trends

Industrial Health News



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INDUSTRIAL HYGIENE FOUNDATION

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FOUNDATION FACTS

Foundation Facts is a monthly news-letter issued to industrial concerns holding membership in Industrial Hygiene Foundation. The Foundation is a non-profit association of industries for the advancement of healthful working conditions.

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No. 4

Medical and Engineering Transactions Issued

The Transactions covering the Medical and Engineering Section of the Foundation's Tenth Annual Meeting were published and sent to members recently. This notable publication contains:

A preliminary report by Dr. C.O. Sappington on a field study now in progress on Industrial Health Department Functions;

A panel discussion on Accurate Diagnosis of Silicosis, led by Dr. Leroy U. Gardner;

A report on Accurate Measurement of Silicosis Hazards by Dr. F.R. Holden and other members of the Foundation's staff, and

A detailed report by Dr. W.M. Gafafer on the continuing study of sick absenteeism in which the Foundation has been cooperating with the U.S. Public Health Service since 1940.

Use of Aluminum in Combating Silicosis

The Council on Industrial Health and the Council on Pharmacy and Chemistry of the American Medical Association have issued a report on "Aluminum in the Prevention and Treatment of Silicosis". This is published in the April 27 issue of the "Journal of the American Medical Association". A copy of the report is contained in the current INDUSTRIAL HYGIENE DIGEST.

Measurement of Air Flow

A revision of the Preventive Engineering bulletin on Measurement of Air Flow Rate in Industrial Ventilation has just been issued to members. The demand for this publication exhausted the original printing. Members desiring additional copies may now secure them.

Integration of Health and Safety

The Foundation arranged an industrial hygiene program at the Western Pennsylvania Safety Conference held in Pittsburgh late in April. Dr. Dudley A. Irwin of the Aluminum Company and Theodore F. Hatch of the Foundation participated in a joint discussion on "Integration of Industrial Safety, Hygiene and Medicine".

News Briefs: Members of the Foundation's staff attended the annual meeting of the Industrial Physicians and Industrial Hygienists held in Chicago recently..... Dr. Holden presented a paper at the meeting..... Dr. A.J. Lanza, Chairman of the Foundation's Medical Committee, was given the Knudsen Award at the conclusion of the sessions. This is presented each year to a physician for outstanding work in industrial health.

I-H-F

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Industrial Hygiene Foundation
4405 Fifth Avenue
Pittsburgh 13, Pennsylvania

INDUSTRIAL HYGIENE DIGEST
Literature and News

News Items

318 Penna. Resuming Work Restrictions on Women and Minors

Restrictions on the employment of women and minors in Pennsylvania, relaxed during the war, will again become effective on June 30, according to a recent announcement by the State Industrial Board. It was pointed out by William H. Chesnut, Secretary of Labor and Industry, that "to all practical intents and purposes the war emergency is at an end". — Pittsburgh Post-Gazette, (April 1, 1946)

319 Enforcement of Smoke Ordinances Poses New Management Problems.

Wartime laxities in smoke abatement problems will soon end, if municipal authorities are successful in gaining support for present enforcement plans and expansion of control programs which were postponed by the war. Baltimore, Cleveland, Indianapolis, Louisville and Wilmington, Del., are preparing to enforce pre-war laws on smoke regulation. Los Angeles, Columbus and Milwaukee are considering similar legislation. Virginia, Minn., has a central steam heating system throughout, and a downtown heating plant in Duluth will probably expand into residential districts. Such systems are more common in Europe. In Cleveland, it is estimated that 50 tons of filth is deposited on every square mile of the city each month, causing over \$10,000,000 damage per year. (The estimate of sootfall in Pittsburgh is twice that figure.) It has been pointed out that smoke control is also fuel conservation, and threatened coal shortage may make more economical use of fuel necessary. — Anon. Buildings and Building Management, pp. 44-45 (Feb., 1946)

Editor's Note: Although not mentioned in the article, Pittsburgh has had a smoke control ordinance, applying to industries, for a number of years, and extended to domestic consumption since just before the war. It was not enforced during the war. A large share of the credit for Pittsburgh's legislation, on which many of the others are based, is due to the investigations and campaigns conducted by Dr. H.B. Meller, late Managing Director of the Foundation. St. Louis is also conspicuous among the cities in smoke regulations and their enforcement.

320 Ten Year Index - J.I.H.&T.

Plans for publishing a cumulative index for Volumes 18-27 inclusive, 1936 to 1945, are announced by the Editors of the Journal of Industrial Hygiene and Toxicology. Only a few copies will be printed in addition to orders actually in hand at the time of going to press. Orders received

before November 1, 1946 will be priced at \$15.00 less 10%. This index, the announcement states, "means the saving of hours of tedious search and dollars worth of valuable time". Orders should be sent to Journal of Industrial Hygiene and Toxicology, Mt. Royal and Guilford Avenues, Baltimore 2, Maryland.

321 Westinghouse 1945 Annual Safety Report.

On the first page of this four-page report is a chart giving the frequency and severity rates for accidents for all the company's plants. A graph showing accident rates for successive years, 1935 to 1945, indicates generally slowly falling curves both for frequency and severity in spite of a great increase in man-hours worked from 1938 to 1944. The 1945 record included six fatalities, 154 permanent partial disabilities, 999 temporary total disabilities, and 227,306 minor injuries, in a total of 220 million man-hours worked. The most common cause of injuries was "handling objects", with "operating machines" second.

322 Safety and Health

Several union agreements in the textile industry contain clauses stating that the employer will make "reasonable provisions" for the safety and health of the employees. Two specify that compliance with the State laws will satisfy this requirement. Another agreement merely states that the employer will comply with all existing laws and regulations. — Monthly Labor Rev., (Mar., 1946)

323 National Fire Protection Association Meeting.

The 50th Anniversary meeting of the National Fire Protection Association, will be held in Boston, June 3-7, 1946. In the 50 years, the organization has grown from a small group meeting in a Boston office after work, to a world-wide, independent, technical and educational organization with members in 37 countries, three sections in specialized fields, and three regular periodicals, with other publications totaling 10 million copies per year. Nearly 150 technical standards have been issued.

324 New Treatment for Athlete's Foot.

A new remedy and preventive of athlete's foot has been announced by the Navy Department. Chief active ingredient is undecylenic acid, a fatty acid found in sweat. This acid, its zinc salt and ordinary talc are mixed into a dusting powder for prevention of athlete's foot and treatment of mild cases. Undecylenic acid and zinc undecylenic in a carbowax base, with water, propylene glycol and triethanolamine make an ointment for more severe cases of the fungus infection of foot and groin. — Science Service.

325 Industrial Safety Charts.

The following Industrial Safety Charts have been published recently by the Division of Labor Standards, U.S. Dept. of Labor: Series I, Wrenches; Series J, Arc Welding Equipment; Series K, Low Voltage Electrical Equipment; and Series L, Screw Drivers. Each series consists of six one-page charts showing the right and wrong way to conduct a particular operation, verbally and pictorially. They are for sale by Superintendent of Documents, Washington 25, D.C. at 5 cents or \$3.75 per 100.

325a Aluminum in the Prevention and Treatment of Silicosis.

The Council on Industrial Health and the Council on Pharmacy and Chemistry of the American Medical Association have authorized publication of the following report on the use of aluminum in the prevention and treatment of silicosis. Since this means of therapy is controlled by patent and can be used only by licensees, studies will be continued by the two councils into this phase of the subject. Further reports will be issued as indicated.

Carl M. Peterson, M.D.

Secretary, Council on Industrial Health

Austin E. Smith, M.D.

Secretary, Council on Pharmacy and Chemistry

The dissemination of reports on the effects of aluminum powder in the prevention and treatment of silicosis has aroused widespread interest and a demand for an authoritative statement regarding its value. At the present time the following statement would seem to be warranted; it is subject, however, to such modification as future knowledge and experience may indicate.

1. In experimental animals the prophylactic use of aluminum inhibits the toxic action of relatively pure quartz.

2. In man, industrial dust exposures often involve mixtures of various minerals in addition to quartz and other environmental variables to which experimental animals are not subject. Therefore human silicosis usually develops more slowly and is often modified in type. Only prolonged unbiased observation, with adequate control cases, will demonstrate whether the prophylactic results obtained with animals are applicable to man.

3. Animal experiments have demonstrated that administration of high concentrations of amorphous hydrated alumina unfavorably influences resistance to tuberculosis. While this result has not yet been reported for metallic aluminum, caution in the application of all aluminum therapy to human beings is recommended.

4. The use of aluminum might appear as an easy short-cut to healthful working conditions, thus saving large expenditures for ventilation and other control methods. Actually there is no substitute for the accepted methods of dust control.

5. If industry indiscriminately treats all employees with aluminum dust, there may be aggravation of tuberculosis or other pulmonary conditions.

6. The therapeutic use of aluminum in man appears to relieve symptoms in a very small number of cases in which silicosis develops rapidly. Experience in some groups is more favorable than in others.

7. In view of these considerations it is recommended that the general application of aluminum therapy in industry be delayed until adequately and impartially controlled clinical observation demonstrates its effectiveness in preventing or alleviating silicosis in man. In the meantime, there should be no slackening in the control measures that have been found effective in reducing the incidence of dust diseases in industry. — J.A.M.A., (Apr. 27, 1946)

325b Medical Commissions Unconstitutional.

Section 6 of Part VII of the Workmen's Compensation Act has been declared unconstitutional by our Supreme Court in the case of Dation vs. Ford Motor Company filed April 1, 1946. This section has been in our law since 1937 when the occupational disease amendment was enacted. It provided for the appointment of a commission of three qualified, impartial physicians to examine an injured employee and to report whenever a dispute arose as to whether or not the employee was suffering from a particular occupational disease. This report, when signed by at least two of the members of the commission, was final and conclusive as to the existence of the disease alleged. The practice of the Compensation Commission has been to refer these disputes to a medical commission at the University Hospital at Ann Arbor. The Court found fault with this procedure in that the medical commission was not directed to keep a record of its findings — it submitted only its conclusion to the Compensation Commission — neither the employee or the employer was afforded an opportunity before the medical commission to explain or rebut the showing on which its conclusion was based and the findings upon which it based its conclusion were not made a part of the record so that it could be reviewed by the Court for the purpose of determining whether or not the findings supported the conclusion. Therefore, in all pending cases and in all future cases in which a dispute is presented as to whether or not a claimant has a particular occupational disease such dispute will be determined by the Compensation Commission or a deputy member thereof in the same manner as other issues are determined, upon the basis of the testimony presented by the contestants at a hearing. -- Mich. Labor and Industry, (Apr., 1946)

Occupational Disease Statistics

326 Occupational Disease Statistics.

	Calif. ²	Conn. ²	Ind. ²	Mich. ²	Ohio ¹	Totals
	Jan.	Mar.	Mar.	Mar.	Feb.	
	1946	1946	1946	1946	1946	
Carbon Monoxide	15	1				16
Carbon Tetrachloride	2					2
Chemical Pneumonitis			1			1
Conjunctivitis	205					205
Dermatitis	991	9	32	7	113	1152
Heat	1					1
Inflammatory Conditions	279			10		289
Lead Absorption			2			2
Lead Poisoning	5	1			4	10
Miscellaneous					49	49
Noise	1					1
Pneumoconiosis (exclusive of silicosis)		1		1	8	10
Pulmonary and Bronchial Affections	20					20
Silicosis			3	9	35	47
Skin Diseases (other than dermatitis)					2	2
Systemic Effects	36				4	40
Tuberculosis (due to contact)					2	2
Typhus			1			1
Undulant Fever			1			1
Upper Respiratory Affections	9					9
Totals	1564	12	40	27	217	1860

(1) Occupational Disease Claims filed with the Industrial Commission.
There were 74,024 days lost, including eight deaths from silicosis
and one death from tuberculosis due to contact.

(2) Occupational Disease Cases filed with the Health Department.

- 327 Trends in Compensation Cases, 1940-1944. Industrial Commission of Wisconsin, Stat. Release No. 3186. 12 pp. mimeographed. (Feb. 20, 1946)

The compensation cases considered here are the total, including injury and occupational disease. The number of cases settled fluctuated from 22,630 in 1929 to 23,755 in 1941, but rose steadily to 31,946 in 1944. The number of working days lost, however, was lower in 1944 than in 1929 - 2.2 million against 3.4 million, and the amount of indemnity paid was only slightly higher. The data are classified according to occupation, industry, etc.

- 328 Diseases of Occupations and Other Non-Accidental Injury Cases Settled in 1944. Industrial Commission of Wisconsin, Stat. Release No. 3185. 26 pp. mimeographed. (Feb. 19, 1946)

A total of 1,689 injury cases, which is 5.5% of the compensable injury cases settled in 1944, were classified as diseases of occupations or other non-accidental injuries. Nine of those cases were fatal, one caused permanent total disability, and one permanent partial disability. The nine fatal cases include one of carbon monoxide poisoning, two of benzene poisoning, and six of silicosis, which also accounts for the case of permanent total disability. Classification by industry shows that 90% of the cases arose in manufacturing industries, and that percentage shows a steady gain since 1942, when it was 65%. Dermatitis accounts for 948 cases, inflammation of muscles, joints, nerves, etc. 362, and plant poisoning, 102. Impairment of vision cases total 48, eye infection 35 and eye inflammation, 32. Only seven silicosis cases were settled but they were all fatal or totally disabling. Extensive tables classify the cases according to agency, occupation, with the days lost, and indemnity paid, which last is classified into fee and contract basis. A very small number were on a contract basis. Another table shows the course of compensation for dermatitis over an eight-year period. In 1939, 220 cases of dermatitis were compensated at an average cost of \$61 indemnity and \$46 medical aid; in 1944, 948 cases averaging \$63 for indemnity and \$31 for medical aid. A special table lists the undulant fever cases, of which there were nine in 1944 and fluctuated during the preceding years, all but one caused by handling meat.

Legal Developments

- 329 Permanent Partial Disability: Prior Injury.

An award for 30 per cent permanent partial disability was denied when the evidence showed that some percentage of claimant's disability resulted from a prior injury for which claimant was awarded benefits on the basis of twenty per cent permanent partial disability. -- Patry v. State Compensation Commissioner. West Virginia Supreme Court of Appeals. No. 9799. February 26, 1946. (CCH)

- 330 Pension and Compensation Rights: Status of Employees.

The employee's application for pension benefits was properly denied as he was already receiving compensation payments, and he could not have the benefits of both statutes. -- De Lorenzo v. Board of Commissioners of City of Newark. New Jersey Court of Errors and Appeals. No. 40, October Term, 1945. January 31, 1946. (CCH)

332 Heart Attack as Cause of Death: Cause of Employment.

When an employee died suddenly after being stricken with a severe pain in the region of the heart, it was held that the medical evidence supported the contention that the strain of the work and the heat were the motivating causes of death, and that the lower court erred in its consideration of said evidence. -- Humphill v. Tremont Lumber Co. Louisiana Supreme Court. No. 37,321. February 11, 1946. (OCH)

333 Oral Notice of Accident Given: Causal Relation

Employee's injury was compensable as the employer was given oral notice and was not prejudiced by failure to give written notice, and the finding of causal relation was sustained. -- Peters v. Glasgow Works. New York Supreme Court, Appellate Division, Third Department. November 20, 1945. (OCH)

334 Traumatic Cancer: Conflicting Medical Opinions

When claimant was struck in the breast and later developed cancer, there was a difference of medical opinion as to whether the blow caused the condition; the court upheld the theory of traumatic cancer and affirmed the award. -- In re Roth. New York Supreme Court, Appellate Division, Third Department. September 19, 1945. (OCH)

335 Inhalation of Chlorine Gas: Foreman's Total Disability: Late Filing of Claim

Appellee while employed by the appellant as a carpenter was seriously injured when a large quantity of chlorine gas escaped from a pipe. His throat, bronchial tubes, and lungs were burned when he inhaled the escaped gas, after which he was given aid at a dispensary. He did not return to work for six weeks. From that time on the appellee's health progressively deteriorated but he continued to work for six more years at which time he left the employment of the appellant because of poor health. Six years after the accident occurred, appellee filed a claim for compensation, his contention being that he was lulled into a state of security because of his continuing to work for appellant, kind treatment by his employer in giving him lighter work to perform, being paid his salary from the date of the injury, and the fact that when he ceased to work for the appellant he was receiving higher wages than he had before the accident. Because the department superintendent who supposedly lulled the appellee into a state of security did not have the authority to make the promise of seeing that the carpenter's claim was taken care of, such unauthorized action cannot be set up by way of estoppel. Judgment reversed and case remanded for an order to be passed in conformity with the opinion. -- West Virginia Pulp and Paper Co. v. Marton. Maryland Court of Appeals. No. 55, October Term, 1945. Filed February 6, 1946. (OCH)

336 Applicability of Compensation Act: Dermatitis Contracted in Course of Employment.

Plaintiff contended that because of the employer's negligence in failing to remove quantities of spun glass dust from the vicinity of plaintiff's work, plaintiff contracted dermatitis. Defendant's demurrer to plaintiff's complaint was based on the grounds that the court was without jurisdiction of the subject of the action and that the facts did not constitute a cause of action. As the 1943 amendments to the occupational disease act included within its purpose all occupational diseases, defendant asserted that regardless of its disability, plaintiff's cause fell wholly within the compensation act. Although plaintiff did not

contribute to the production of the spun glass, it was evident that he contracted the skin disease on his employer's premises and within the scope of his employment. The reviewing court held, therefore, that plaintiff's cause fell directly within the provisions of the 1943 act. The lower court's order overruling defendant's demurrer was reversed. -- Sandy v. Walter Butler Shipbuilders, Inc. Minnesota Supreme Court. No. 34,126. February 1, 1946. (CCH)

336 Tuberculosis as Accidental Injury or Occupational Disease: Question of Fact for Jury.

The appeal was from a judgment upon a directed verdict in defendant's favor. In a common law action plaintiff alleged that he was exposed to conditions which reactivated a pre-existing dormant tuberculosis. Defendant pleaded that plaintiff's cause was under the Workmen's Compensation Law and that the illness arose from an accident. The trial judge's holding that plaintiff had suffered an accident was held to be an error. In considering the evidence opinion could be divided as to whether plaintiff's condition was brought about by accident or not. There was a question of fact to be submitted to the jury; a verdict may be directed only on a court question arising from uncontroverted facts. Judgment was reversed. -- Dawson v. E.J. Brooks and Co. New Jersey Supreme Court. No. 10, January Term, 1946. March 4, 1946. (CCH)

337 Benzol Poisoning: Cleaning of Spray Guns: Liability of Employer.

Deceased became disabled from aplastic anemia and leukemia as the result of benzol poisoning, an occupational disease, which he contracted while employed by the Niagara Shipbuilding Company. In his work he used a brush and a paint spray gun, and each morning he cleaned the spray guns, using a varnish remover. The remover contained more than 15% of benzol, and the cleaning was done in a badly ventilated shanty about six feet square. The evidence indicated that the exposure to benzol occurred during the period of employment with the Niagara Company. Two months before his death the employee had worked for a second employer for a few weeks. The award for disability and death benefits made by the Industrial Board was affirmed. -- In re Herr. New York Supreme Court. Appellate Division, Third Department. March 6, 1946. (CCH)

338 Lead Poisoning: Conflicting Medical Testimony.

The employee claimed total disability as the result of lead poisoning, and the disallowance of compensation was appealed in the instant action. The medical testimony was in sharp conflict as to whether claimant suffered from lead poisoning or nephritis. The issue in the case was purely factual, and the burden was upon claimant to show by a preponderance of the evidence that his disability was caused by an occupational disease. The credibility of the medical testimony was for the board, and the reviewing court found no capricious disregard of competent evidence by the board. The court also agreed with the board's refusal of a rehearing on the ground that the additional testimony would be merely cumulative. Such testimony would not be sufficient to reverse the board's findings of fact. The lower court's judgment in defendant's favor was affirmed. -- Hosterman v. Best. Pennsylvania Superior Court. Nos. 92,95. Filed March 4, 1946. (CCH)

- 339 Notice and Filing Delay: Faulty Medical Diagnosis a Sufficient Good Cause.
An employee has a right to rely upon the diagnosis of a reputable physician and when the diagnosis is faulty, the consequent delay in giving notice of and filing claim for workmen's compensation is considered sufficiently good cause. — Dean v. Safety Casualty Co. Texas Court of Civil Appeals, Second Supreme Judicial District. No. 14,723. November 9, 1945 (CCH)

Book Reviews and Notices

- 340 Poisons - Their Properties, Chemical Identification, Symptoms, and Emergency Treatments. V.J. Brookes and H.N. Alyes. D. Van Nostrand Co., New York. 209 pp. Price \$3.00. (1946)

This volume differs from the usual textbook on toxicology in its style and arrangement. Originally written for police, investigators, and peace officers, the material should also be of value to physicians, nurses, chemists and pharmacists. It is written in simple language, ready for rapid reference, with a minimum of technical details. The first three chapters are general, including definitions and statistics, the fundamentals of chemistry of poisons, simple methods of chemical tests, and general properties and classification of poisons, with antidotes. A list of antidotes for a kit is suggested. In the next chapter individual poisons are discussed in alphabetical order, including identification, symptoms, and treatment for each. In the next chapter the information is repeated, concisely and in tabular form, with emergency treatment, for quick reference. Industrial hazards are next treated, first in general tables, then in alphabetical order. A short chapter deals with poisonous plants and animals, and the final chapter describes special techniques, including artificial respiration, the gas mask, the inhalator and shock treatment. An appendix consists of a glossary, a list of reagents and tables of measures.

- 341 Medicine in Industry. B.J. Stern. The Commonwealth Fund, New York. 209 pp. Price \$1.50. (1945)

The general subjects covered are the social, economic, legal and professional setting within which industrial medicine has progressed, and the development of the scientific knowledge which has enabled industrial physicians to cope with many diseases affected by occupations. The author presents data on the rates of industrial disability and the limited extent of preventive services. Among subjects considered are recent development in health and insurance programs, the problems of the handicapped in industry, and the relationships between the industrial physician and the general practitioner. The conclusion is that although great advances have been made in recent years, adequate care for the great mass of workers in the United States is still to be provided, and that industrial medicine offers a fruitful approach to preventive medicine and public health, one that needs to be skillfully and intensively developed.

- 342 Accidents from Falls of Roof and Coal in Bituminous Coal Mines. Coal-Mine Accident Prevention Course, Section 2. U.S. Bureau of Mines. Miners Circular No. 48. 114 pp. (1945)

The conclusion says: "The prevention of accidents from falls of roof and coal is one of the major problems in coal mining, but until such time as the reduction of these accidents is given the same intelligent thought as that given to the production of coal, such accidents will not be reduced to the lowest possible rate. It has been demonstrated amply that most accidents from falls of roof and coal, as well as from all other causes, can be prevented by a combination of proper mental attitude and application of sound preventive measures." Most of the circular is devoted to details of physical preventive measures, with also some attention to written records of inspection, bonuses and penalties, and enforcing regulations. A list of 41 suggested topics of class discussion should stimulate interest in the subject.

- 343 Nursing in Commerce and Industry. Bethel J. McGrath, for the National Organization for Public Health Nursing. The Commonwealth Fund, New York. 356 pp. Price \$3.00. (1946)

This is the most comprehensive book published on the subject and appears to fulfill the author's purpose as an authoritative guide to the manifold duties and responsibilities of the industrial nurse. She discusses the nurse's place in the industrial organization, her relationships with officers and employees, the physical facilities of the nursing service, the health education and hygiene activities of the nurse, her role in occupational and non-occupational illnesses and accidents, records and reports, workmen's compensation, rehabilitation, and many other difficult problems. The book is intended primarily for the industrial nurse on the job, but should also be valuable to the nurse preparing for industrial service and to the company executive who is interested in establishing or improving nursing service.

- 344 Careers in Safety. H.J. Stack, C.C. Hawkins and W.A. Cutter. Funk and Wagnalls Co., New York. 152 pp. Price \$1.50. (1945)

The objective of this book is to portray the types of positions open in the broad field of safety. To this end, it deals with those phases of safety which encompass the home, the factory and travel. Some consideration is given to industrial hygiene but this presentation is both misleading and erroneous. As an example, it is said that first knowledge of silicosis came from the Gauley Bridge cases. It is further stated that silicosis is a process wherein the lung is damaged by the cutting action of the sharp silica particles. The repetitive cutting and healing is said to cause scar tissue and hence disability. At another point it is claimed that the industrial physician interprets data gathered by the chemist and guides the engineer in the correction of industrial health hazards. This is an echo from years ago when industrial hygiene was in its infancy and is hardly a proper statement of the unique combination of medicine, chemistry and engineering which is the basis and strength of the field today. There is an index summarizing governmental, industrial and consultant services in safety.

Methods of Detection and Determination

- 345 An Apparatus for Rapid Sampling of Large Air Volumes for Industrial Air Analyses. L. Silverman and C. E. Williams. J. Ind. Hyg. & Tox., 28, 21-22 (Jan., 1946)
- An air sampling apparatus for rapid sampling of particulate matter from large air volumes is described. This device employs a large area filtration unit constructed with analytical filter papers. A flowmeter, housing and centrifugal blower are incorporated with the filter units into a compact portable apparatus for use in the field. Sampling rates as high as 65 cubic feet per minute are obtainable with high efficiency. -- Authors' summary
- 346 Detecting Radiation Hazards. Anon. J.A.M.A., 130, 791 (Mar. 23, 1946)
- A recent release from the University of Rochester reveals many heretofore unpublicized aspects of research connected with the atomic bomb. The medical aspects of the research were organized in 10 divisions. Among the most important was the development of methods to protect the employees: of the thousands employed in the plants not a single one was injured by any of the new and peculiar hazards of the work. Animal investigations on the toxicology and pharmacology of uranium compounds established criteria for tolerance levels. Methods of analyzing the urine of employees were devised to determine the extent of exposure and to estimate the amount of radiation exposure which could be tolerated by human beings. A method of taking finger impressions in wax was devised and employed on the workers handling radioactive materials in atomic plants. This permitted the determination of when, if at all, employees began to show changes in the skin as a result of contact with the materials handled. One division studied the blood of large groups of animals, completing over 100,000 analyses. Geneticists studied the effects produced on the offspring of mice and fruit flies which had been exposed to radiation. Some 277,000 mice and 50 million fruit flies were bred and observed. The application of the vast amount of data gathered by the University of Rochester group, of which that cited is only an example, can hardly be predicted, but the results will certainly be significant in the fields of metabolism, cancer, hematology and physical medicine.
- 347 Benzene Poisoning. Preventive Measures and Relation between Atmospheric Pollution and Frequency and Gravity of Intoxication. Avy, Vallaud and Fek Arch. Malad. Professionnelles, 6, 199-212 (1944-1945) (French)
- A study was made of atmospheric benzene concentrations and of blood findings in several industries, with an attempt to correlate them. In estimating the extent of blood damage, a coefficient was estimated for each worker: "0" for "dangerous" conditions, RBC under 3.5 million, WBC under 4,000 and polymorphs, 50%; "2" for "normal" conditions, RBC under 4 millions, WBC over 5,000 and polymorphs, 60%; and "1", "to be watched", with values intermediate between the above. The average for workroom was calculated by dividing the sum by the number of workers and multiplying by 100. Thus a perfect score, or all normal blood, would be 200, and entirely dangerous conditions 0. Benzene concentrations were determined by the formalin sulfuric acid method. Summarized reports on the industries are as follows: (1) Waterproof industry. Large and airy rooms, but little special ventilation. Benzene 0.1-1.1 g. per cu. m. Workroom coefficient

50-71. (2) Rubber industry. Concentrations 0.1 to 4.0 g. per cu. m. Workroom coefficient 7-128. (3) Dyeing and cleansing. In the "two phase" process concentrations ran 0.7 to 6.4 g. per cu. m.; in the "single phase" process, carrying out cleaning and drying as one closed operation, 0.1 g. per cu. m.; workroom coefficient, 28-80. (4) Flower and feather industry. Concentration 0.1 to 0.3, workroom coefficient 84-113. (5) Printing, concentration 0.1 to 6.0, workroom coefficient 51-182. (6) Miscellaneous (covering metallic tubes and spreading fabric) 0.1 to 4.7, workroom coefficient 108-161. Preventive measures were recommended in all cases, including suitable ventilation, substitution by another solvent when possible, and the use of closed systems. The authors conclude as follows: "Precise relationship between benzene concentrations in atmosphere and risk of intoxication is made difficult by factors such as nature of contact, period of exposure, and individual predisposition. Atmospheric estimations are not sufficient to evaluate risk, as seen especially in the flower and feather industry, where concentrations are low, but blood results give evidence of a far from negligible hazard. On the other hand, blood examinations merely give indication of the present state of health, not of eventual risk of intoxication. However, atmospheric estimations are necessary to determine efficacy of ventilation and recovery. In view of the known toxicity of benzene and the impossibility of estimating it in exact figures, adequate ventilation should be installed in all workrooms where benzene has been demonstrated, even in low concentrations. -- From Bull. Hyg.

Control Methods

- 349 Hood and Booth Types Available to Solve Typical Ventilation Problems.
A.C. Stern. Monthly Rev., Div. of Ind. Hyg. and Safety Stands, (N.Y.)
25, 1-4 (Jan., 1946)

The three general types of exhaust hoods are discussed. The canopy hood is used where the normal air flow is upward. It may be fixed and high, but must then be larger than the tank or pot. If it is low enough to give good ventilation and remain the size of the tank, it must be movable, either vertically by a telescopic joint or laterally by a swivel joint. Movable hoods must be kept in good order and easy to move, otherwise they will not be moved into position when they are needed. The use of lateral hoods avoids that difficulty. In the laterally exhausted booth, the two significant criteria are the velocity at the face of the booth and the maintenance of that velocity across the cross-sectional area at the plane of dust or gas dissemination within the booth. Baffles are useful when the booth is large, to distribute the air evenly over the booth cross-section. Methods of getting into and out of the booth are described. The third type is the downdraft hood, usually with a grille in the floor or table surface. The effects of convection currents and cross-drafts may be avoided by the use of enclosing walls and top. In sandblast booths, even the front is enclosed and air enters through the roof. Combination downdraft-lateral booths are sometimes used in sandblasting operations, with the air entering from above and exhausted through lateral slots near the floor line. The same provisions are employed for moving material in and out, except that under some conditions the booth may be open at the top and the work may be lifted in by a crane.

- 349 Makeshift Mine Ventilation. E. Smith. Safety Eng., 91, 53-54 (Mar., 1946)

Ventilation of idle mines is rarely given any attention, and such mines, if air passages are at all blocked, must be ventilated before they can be worked safely. Air from a compressor is satisfactory if uncontaminated but sometimes the engine stench is evident in a noticeable degree. A fan may cause recirculation of the mine air if too near the entrance. In one case the recirculation of blackdamp was sufficient to stop the engine. A gasoline engine may constitute a fire hazard. Several cases of makeshift ventilation, none of them successful, are reported. For instance in one case tin paddles were attached to a wheel of a bicycle to convert it into a fan. As an air moved it proved to be still a pretty good bicycle. Other improvised blowers proved to be dangerous. Stove ventilation has been used in small mines, using the draft of a stove at the surface to cause a slight circulation in the mine. It is only effective as long as the fire burns, and fatalities have resulted from such an arrangement when the fire went out. Puzzling appearance and disappearance of blackdamp from certain parts of a mine is caused by changes in barometric pressure. The gas expands out of unused parts of the mine under reduced pressure and contracts back into those parts under increased pressure. A Mine Safety Order does not permit men to work when the oxygen content of the air is under 19.5% by volume (dry basis), but a deficiency is difficult to determine, as safety lamps still burn brightly at that percentage.

- 350 Armstrong Cork Takes Dust for a Ride. Occ. Hazards, pp. 18-20, 30-31 (Mar., 1946)

The Armstrong Cork Company describes the precautions taken against fire hazards from dust. These include an airtight dust collector system which keeps dust under control at all stages from cutting to final grinding, with frequent insertions of screw conveyors which act as baffles to stop any fire; rigid fire precautions with automatic sprinklers, portable fire extinguishers and fire doors; exhaust ventilation with explosion type emergency vents; and workers constantly on the alert to clean up at once any escaped dust.

Industrial Health Hazards and Their Effects

- 351 Silicosis: Clinical Study. H. Dayman. Am. Rev. Tuberc., 52, 449-462 (Dec., 1945)

Dayman reports observations on 116 patients with silicosis, 33 of whom came to necropsy. Thirty of the 116 patients who did not present evidence of clinical tuberculosis are divided into two groups; those with simple nodular silicosis (15 cases) and those with simple conglomerate silicosis (15 cases). The majority of the 15 patients with simple nodular silicosis were free of symptoms. A few noted slight dyspnea on exercise. The diagnosis was established solely on a history of prolonged exposure to silica dust and the minute, widely distributed shadows in the roentgenogram. The patients with simple conglomerate silicosis exhibited symptoms and signs of pulmonary emphysema. Dyspnea was often the sole outstanding complaint. In seven of the 15 cases massive shadows were situated symmetrically in either lung field at the hilar level, while in

8 cases the principal shadows were somewhat smaller, more numerous and irregularly distributed. In 12 there were additional minute disseminated shadows compatible with silicotic nodulation. In 77 of the 116 patients with silicosis, complicating tuberculosis existed. The symptoms were predominantly those of the tuberculous disease. The constitutional reaction is not so pronounced when tuberculosis complicates silicosis as when tuberculosis alone is present. The chest roentgenogram presented widespread minute shadows similar to those observed in simple nodular silicosis together with larger mottled shadows, the latter usually being due to the intimately combined lesions of silicosis and tuberculosis. The presence of silicosis evidently predisposes the patient to progressive tuberculosis. Sixty-six of 77 died. — J.A.M.A.

352 A Note on the Occurrence of Silicosis in Bituminous Coal Miners.

M.J. Small. W. Va. Med. J., 42, 6 (Jan., 1946)

Ten cases of silicosis have occurred in the past four years in the author's private practice in an area of small bituminous coal mines, contrary to general experience. Investigation of the cases showed that all the patients "worked on the motor", that is, they operated the cars that hauled the coal from the pit to the surface. The grade being quite steep, sand is sprinkled on the wheels to increase traction, and is ground to a heavy cloud of dust of sufficiently small size to cause silicosis. This hazard has been recognized by the coal companies and in recent years masks have been issued to the miners thus exposed. However, new cases continue to appear, perhaps to some extent because the miners are delinquent in wearing their masks constantly. The author believes that many more such cases will be found on careful examination, and questions whether one case mentioned by Pandargrass in a recent paper (our Abst. 832, July, 1945) may not have the same cause.

353 A Health Survey of Pipe Covering Operations in Constructing Naval Vessels.

W.E. Fleischer, F.J. Viles, Jr. R.L. Gade and Philip Drinker. J. Ind. Hyg. and Tox., 28, 9-16 (Jan., 1946)

(1) The character of asbestos pipe covering industry on board naval vessels is such that conclusions drawn from other asbestos industries such as textiles, cannot be applied. (2) The operations of band saw cutting, grinding, cement mixing, and installation on board ship should be equipped with exhaust ventilation to keep the total dust concentration low. (3) The incidence of asbestosis among pipe coverers in the shipyards studied was low, 0.29 per cent or three cases out of 1074. In view of the nature of shipyard pipe covering work, this low incidence is not surprising. (4) Since each of the three cases of asbestosis had worked at asbestos pipe covering in shipyards for more than 20 years, it may be concluded that such pipe covering is not a dangerous occupation — Authors' conclusions.

354 Chronic Mercurialism. Queries and Minor Notes.

J.A.M.A., 130, 981 (Apr. 6, 1946)

A patient was exposed to mercury fumes four years ago, and her physician questioned whether a slightly enlarged spleen and aching in the left upper quadrant might be due to mercurial poisoning. A study of 102 cases of chronic mercurialism gives no instance of enlargement of the spleen. The syndrome of chronic mercurialism includes central nervous system disturbances and other symptoms which are easily recognized. Therefore, this case is probably not chronic mercurialism.

355 Casualties Following Exposure to Zinc Chloride Smoke.

E.H. Evans. Lancet, 249, 369-370 (1945)

Ten deaths and 25 instances of non-fatal injury occurred among 70 persons exposed in a tunnel to zinc chloride fumes resulting from the burning of a smoke generator 39 yards from the entrance. The generator contained hexachloroethane and zinc oxide, with small quantities of calcium silicide and an igniter composition; the smoke consisted mainly of finely particulate zinc chloride together with carbon and carbon dioxide. Near the generators, the zinc chloride smoke concentration was estimated at 0.5 lb. per cu. yard. The main effects were damage to the mucous membrane of the nasopharynx and respiratory tract, and a pale gray cyanosis that did not respond to venesection nor readily to oxygen. Morphine was useful in allaying restlessness and anxiety. — C.A.

356 Poisoning from an Encaustic Containing Lead Tetraethyl. Semimicro Determination of Lead Tetraethyl in Gasoline. G. Schuster. Ann. chim. anal., 25, 55-56 (1943) (French)

The term encaustic signifies a vehicle for painting in which wax is the chief ingredient. A case is described here of poisoning of a French artisan who handled a product containing lead tetraethyl. His symptoms are described and the quantities of lead found in the urine at different times are given. These analyses were made by determinations with hydrogen sulfide or with dithizone. For the rapid determination of lead in gasoline the following procedure is recommended: Take 20 ml. of sample, add 2 ml. of concentrated nitric acid and heat a few minutes. Pour off the acid and treat the gasoline three times more with 1-ml. portions of concentrated nitric acid. To the entire acid solution, add cautiously 2 ml. of concentrated sulphuric acid and boil gently for a few minutes. Cool, add 5 ml. of a saturated aqueous solution of ammonium tartrate, 1 ml. of 10% ammonium acetate solution, and 15 ml. of water. Saturate the solution with hydrogen sulfide or add some sodium bisulfide solution. Compare the brown color produced by the lead sulfide with that obtained with the known quantities of lead. — C.A.

357 Detection of Porphyrinuria in Lead Poisoning. Schein. Arbeitsschutz, pp. 336-339 (1943) (German)

The normal person eliminates in the urine up to 6 gamma % porphyrin. In lead workers values up to 15 gamma % are still normal, higher figures up to 50 gamma are significant for lead damage. — C.A.

358 Memorandum on Welding Processes and Their Hazards.

Leeds Joint Council on Industrial Medicine. (1945)

This Memorandum describes the various welding processes and their hazards, including shock, explosion, radiation effects, burns, eye injuries, the various metal fumes, heat effects and anoxemia. Precautions recommended include use of direct current under 60 volts, general and localized exhaust ventilation, and protective clothing, especially leather gloves. Regarding gloves, "a better material than leather is required but has not yet been discovered."

359 Formaldehyde. Controlling Chemical Hazards. Series 3. U.S. Dept. Labor, Div. of Labor Standards. 12 pp. (1945) For sale by Supt. of Documents, Washington 25, D.C. Price 5 cents.

This pamphlet is one of a series on common chemical hazards, and contains basic information on uses, properties and hazards. Figures on physiological response, tabulated from several sources, include: permissible

eight-hour working exposure for human beings, 10.0 ppm; least detectable odor, 0.8 ppm; least amount causing throat irritation, 5.0; coughing, 15.0; and irritations of the mucous membranes of the respiratory tract, 20.0 ppm. Its action is irritating and temporary, and fatal poisoning has developed only from ingestion of the solution and from massive exposure to the gas (above 500 ppm). Dermatitis often results from exposure to the dust. Protective equipment includes goggles (where dust or splashing may occur), respirators, oxygen or supplied air line masks, gloves, sleeves, aprons and underclothing, according to the conditions of exposure. General sanitary facilities and ventilating equipment are discussed briefly. First aid treatment for minor and serious exposures to vapors, dust and splashing is described briefly. In serious exposure the most urgent need is to call a physician. Workers exposed to formaldehyde should be examined monthly. A bibliography is included.

- 360 Anoxia Resulting from Methane. R.L. Pullen and W.A. Sodeman. New Orleans Med. and Surg. J., 92, 133-137 (Nov., 1945)

Pullen and Sodeman present this paper for the particular interest of those residing in areas that use natural gas with high methane content and no carbon monoxide. Danger arises from faulty apparatus or faulty use of such apparatus for burning the gas, so that effects are produced from methane alone or from methane and carbon monoxide, or carbon monoxide alone. Methane acts as an anesthetic agent at a concentration of 87% and as an asphyxiant at 90% concentration. This narrow safety range added to the explosive character of the gas, marks its lethal action. Physiologically methane exerts its action by reducing the partial pressure of oxygen by simple replacement. Prolonged sublethal asphyxia apparently produces central nervous system degeneration. Therapy consists of removing the patient from the methane atmosphere and supplying oxygen therapy. Other treatment is symptomatic and supportive, or as indicated by any complications. A case report illustrating these principles is included in the paper. -- J.I.H.&T.

- 361 Chronic Chlorine Poisoning and Tuberculosis F. Arloing, E. Berthet and J. Viallier. Presse med., no. 33/34, p. 355 (Apr., 1940) (French)

Groups of guinea pigs were exposed to prolonged inhalations of light concentrations of chlorine before and after infection with tuberculosis. It appears from the results obtained that chronic chlorine poisoning favors the evolution of experimental tuberculosis in guinea pigs. Individuals employed in industries where they may be exposed to chlorine fumes should be screened for any evidence of tuberculosis and should be followed clinically and radiologically during the period of employment. -- Am. Rev. Tuberc.

- 362 Exposures to Oxides of Nitrogen Accompanying Shrinking Operations. F.E. Adley. J. Ind. Hyg. and Tox., 29, 17-20 (Jan., 1946)

The use of large oxyacetylene shrinking torches, particularly in small, unventilated compartments can produce dangerous concentrations of oxides of nitrogen. Under the conditions encountered it was found that excessive exposures can accumulate within a period of a few minutes. Contact of the flame with cold water or cool metal was found to have no noticeable bearing on the production of oxides of nitrogen. A close correlation was found to exist, however, between the production of this gas and the rate of consumption of acetylene gas by the torches. Excessive concentrations were present in the breathing zone of the operators working in confined spaces with all sizes of torch tips investigated;

those of large capacity producing the highest concentrations. Contrasting tests obtained at shrinking operations in large, ventilated spaces showed that the resulting concentrations of oxides of nitrogen were noticeably less, although in some instances still excessive. Several tests for carbon monoxide failed to indicate the presence of any health hazard from this gas even in confined, unventilated spaces. -- Author's conclusions.

- 785 Transitory Anemia in Benzene Workers. D. Picard, J. Bourret and Mlle. M. Poillard. Arch. Malad. Professionnelles, 6, 137-142 (1944-1945) (French)

The authors insist that the present hematological criteria of early benzene poisoning must be adapted to a new and lower level, influenced by present conditions of diet and mode of living. They have observed, during a repeated examination of series of workers exposed to benzene, the fairly frequent occurrence of anemia, which is transitory, easily curable even without cessation of exposure, and which differs from true benzene anemia chiefly in the absence of leucopenia or even any considerable neutropenia. This transitory anemia is characterized by a low red cell count with a fairly high hemoglobin value so that the color index is usually above 1. The authors believe that it is not a manifestation of a specific benzene effect, but of an instability of the hemopoietic system, due possibly to the interaction of the two factors, benzene exposure and alimentary inadequacy. They agreed that systematic blood examinations of benzene workers are valuable in revealing latent blood disturbance, and are more than ever necessary in order to discriminate between workers who must be removed from exposure and those whose transitory anemia makes this unnecessary, but state that they cannot be used to distinguish susceptible individuals and that they may give rise to a false sense of security. -- Bull. Hyg.

- 786 Carbon Tetrachloride. A Report on its Use in Broaching Operations. R.H. Avery and L. Davis. Nat. Safety News, 55, 89, 138-140 (Oct., 1945)

Broaching is a method commonly used in machine shops for the finishing of square, rectangular or irregular shaped holes. It requires the generous use of cutting oils. In the authors' paper, air samples were taken when the cutting oil was diluted with 10% carbon tetrachloride and again with 15%. In the former case, air samples showed a maximum concentration of 44 ppm and an average of 22. With the use of 15% carbon tetrachloride, air concentrations rose to 71 ppm. with a peak value of 104. The 15% material also resulted in complaints by the workers. The authors recommended the use of the 10% mixture, but if higher concentrations are found necessary, special ventilation should be installed. -- J.I.H.&T.

- 787 Toxic Amblyopia After Inhalation of Methyl Acetate. A. Lund. Ugeskrift. Laeger, 106, 708-711 (1944) (Scandinavian)

An old man who was exposed to methyl acetate vapors developed general depression, headaches, and dizziness followed by blindness of both eyes caused by atrophy of the optic nerve. Possibly either methanol or formaldehyde is formed from methyl acetate in the organism. -- C.A.

- 788 Pathology of Methyl Bromide Poisoning. M. Duvour and L. Derobert. Arch. Malad. Professionnelles, 6, 143-154 (1944-1945) (French)

A description is given of the post-mortem findings in the two fatal cases of methyl bromide poisoning described by Michaux and others. Compared to a case recorded by the authors in 1937 the two

present cases showed less marked and less generalized hemorrhage and more intense leucocytic infiltration, amounting in the second case to an actual alveolitis. The kidneys, as in the 1937 case, showed lesions of the tubules only, the glomeruli being unaffected. The brain was congested, but only the cerebellum was examined microscopically; this showed intense pericellular edema, with no nerve-cell lesions. The liver showed little alteration beyond some dilatation of the biliary sinuses. -- Bull. Hyg.

- 367 Methyl Bromide Poisoning. J. Michaux, A. Clercy and G. Lechevallier. Arch. Malad. Professionnelles, 6, 143-148 (1944-1945) (French)

At a factory where ampoules were filled with methyl bromide, 13 women were affected, seven cases occurring on the same day, two of them fatal. An important step in the process was the storage of the sealed ampoules in the open air for 24 hours so that the faulty ones could be detected by self emptying. Under pressure of work this step was omitted and on the day following the mass intoxication, 30 empty ampoules were found, representing 640 gm. of escaped methyl bromide. The two fatal cases ended in coma, preceded by violent convulsions. The remainder showed symptoms similar to those recorded by other investigators. Preventive measures include adequate ventilation by windows and fans; care in the distribution of methyl bromide only to persons experienced in handling it; and, in view of a recent series of severe cases of poisoning during disinfection of premises, special attention to the carrying out of this process by experts only. -- Bull. Hyg.

- 368 Traumatic Calcifications: A Precipitating Factor in "Bends" Pain.

J.H. Allan. J. Aviation Med., 16, 235-241 (Aug., 1945)

Five cases of calcification susceptible to bends are presented. Calcification is favored by impaired blood supply. "Bends" tends to occur in areas of poor blood supply, high fat content, injury, and crystal formation. In one case where blood supply was great enough to permit ossification, the pain was no greater than in a fibrositis in the same subject. - J.I.H. & T.

- 369 Protection in Roentgenoscopy. J.F. Bacon and E.T. Leddy.

Med. Clin. N. A., pp. 1036-1041 (July, 1945)

Protection in roentgenoscopy (fluoroscopy) depends on the use of shielding and distance in keeping the X-ray worker's exposure below the safe maximum. The effects of overdosage include changes in hair and nails, keratosis, ulceration and malignant degeneration of the skin, and, perhaps, sterility, anemia, and leukemia. About 0.03 per cent of the skin erythema dose has been suggested by others as the maximum safe daily dose, but the authors found that two to four times this exposure produced no ill effect in 25 years experience at the Mayo Clinic. Careless roentgenoscopy by general practitioners and others who do X-ray work only occasionally is considered the chief source of X-ray injury to the X-ray operator. Frequent mistakes of inexperienced operators are discussed. -- J. I. H. & T.

The Plumbing and Heating Industries Bureau advises that radiators which are protected with a non-metallic paint emit more heat. The top coat should always be non-metallic but undercoats may be either

- 270 Studies on Bends. H.L. Motley, H.I. Chinn and F.A. Odell.
J. Aviation Med., 16, 210-234 (Aug., 1945)

A detailed statistical study of more than 9,500 cases of bends. Susceptibility to bends increases with age, body weight, height, obesity (weight divided by height). Bends occurred in Negroes less than in American Whites, and in the French less than in Negroes. Fifty per cent of cases were relieved by an increase in pressure of 100 mm. of mercury; 30 per cent, by an increase of 130 mm. of mercury. At higher altitudes, greater increases in pressure were necessary to relieve symptoms. Pain was most frequent in the shoulders, least in the fingers and feet. Recurrence of bends in a particular part of the body was more frequent than could be expected on the basis of random chance. Significance of the data is discussed. -- J.I.P.M.

- 271 An Experimental Investigation of the Effect of Change in Atmospheric Conditions and Noise Upon Performance. M.S. Viteles and K.R. Smith. Heat., Lighting and Air Cond., 19, 107-112 (Mar., 1946)

The following tentative conclusions may be drawn from a consideration of the results: (1) The findings suggest that there is no need to provide equipment for the reduction of effective temperatures below the 90 deg level where tasks of the type included in this investigation are to be performed. "These tasks are roughly analogous to operations carried on by personnel in the plotting and charting rooms of Naval vessels." There is some evidence that it may be undesirable to do this type of work at effective temperatures as high as 97 deg but further investigation, within this range of approximately 97 deg to 94 deg is required to determine more exactly the critical level of temperature. (2) The evidence suggests that it is unnecessary to undertake considerable expenditure of funds to reduce the noise involved in the cooling and circulation of air, at least if the noise does not rise above the 90 decibel level. In general it would appear that the effect of high temperature on performance is much more adverse than that of high level of noises of the type reproduced in this experiment. -- From Authors' summary and conclusions.

- Toxic Effects of 2,2 bis (p-Chlorophenyl) 1,1,1-Trichloroethane (DDT) in Man. R.A.M. Case. Brit. Med. J., 2, 842-844 (Dec. 15, 1945)

The only case of human intoxication by DDT previously reported was by Wigglesworth (Abst. 1243, Dec., 1945). An investigation was made on two men to determine the possible toxic effect of the use of a distemper containing 2% by weight of the dry film of DDT in circumstances where the paint would be covered with a thin film of oil. The ambient temperature would be such that personnel at risk would be largely unclothed, their skin would be oily and sweaty, because of cramped accommodations. Large areas of oily skin would come in contact with the paint and efficient washing of the body could take place only at relatively infrequent intervals. After exposure the symptoms included changes in reflexes and in auditory acuity, patchy peripheral anesthesia, tremor, fall in systolic pressure, and hematologic changes. It is emphasized that DDT may be a hazard to human beings but not in the amounts commonly used. -- J.A.M.A.

- 272 Fatal Case of DDT Poisoning in Child, with Account of Two Accidental Deaths in Dogs. K.R. Hill and G. Robinson. Brit. J. Med., 2, 845-846 (Dec. 15, 1945)

A case is reported in which a child, aged one year and seven months drank about one ounce of 5% DDT in kerosene. In 10 minutes he began to cough and vomit, then became comatose and had convulsions. Death was due

to pulmonary edema, probably from paralysis of respiratory center. The lethal dose was approximately 150 mg. per kilogram of body weight - an amount somewhat less than that found for experimental animals. Two fatal cases of chronic DDT poisoning are described. -- J.A.M.A.

- 774 The Health of Workers. A Study of Health Hazards in the Industries of Quebec F.J. Tourangeau. Can. Med. Assoc. J., 54, 352-358 (Apr., 1946) (French, with English summary)

The paper summarizes an investigation of health hazards in the industries of Quebec, including 3,384 industrial establishments with 146,463 workers. Over 22,000 were exposed to excessive noise and 3,000 to excessive heat. Dust is one of the most common hazards, especially silica and asbestos. Over 6,000 were found exposed to dust. About 75% of claims on the Workmen's Compensation Commission of Quebec are based on industrial dermatitis, and over 16,000 were found exposed to irritants. Among the poisonous substances encountered, lead, benzene and mercury were most important. It is felt that the amount of illness due to occupation is greater than generally supposed, especially if the conditions bringing about ill health gradually are considered. The paper deals with a varied list of occupational hazards, including some of munition plants. It concludes with an appeal for cooperation between the doctor in the plant, the family physician and management. -- From Author's summary.

- 775 Control of Occupational Tuberculosis in Hospitals L. Brandy. J. Ind. Hyg. and Tox., 27, 234-237 (Oct., 1945)

Tuberculosis may be considered an occupational disease for physicians, nurses, orderlies, clerks, technicians and all others who have contact with patients. Tuberculosis case finding within hospitals varies from non-existent to complete, intensive programs. Student nurses are at the age when tuberculosis is most common, and although a high percentage of nurses have pre-employment chest X-rays, many nurses are assigned to care for the sick without determining if they themselves have communicable tuberculosis. Among other hospital employees there is a surprisingly great lack of pre-employment X-ray examinations, which should be made on all staff members, students, cooks, porters and on all personnel employed by the hospital. Likewise, there should be periodic X-ray check-ups. Also, all hospitals should have chest X-rays on all admissions.

- Immersion in Cold R.G. Park. New Zealand Med. J., 44, 159-164 (1945)

The abnormal physiology and treatment of vascular disorders resulting from exposure to cold are described in outline form. Tissues affected by cold are considered to pass through four stages: vasoconstriction, triple response, inflammation and necrosis. Necrosis, however, due to actual freezing of tissues, is much rarer than supposed. In such conditions as chilblains, "trench foot" or "immersion foot", inflammation rather than true frostbite is the important lesion. Hence treatment of these conditions should aim at the reduction of hyperemia, and warmth should not be applied. In Reynaud's disease, on the other hand, vasoconstriction is the principal change, and the application of heat is advisable. -- J.I.H. & T.

Skin Diseases and Burns

- 377 Rubber Products as Widespread Cause of Eczema: Report of 80 Cases.
P. Bonnevie and P.V. Marcussen. *Acta-Dermato-Venereologica*, 25, 163
(Sept., 1944) (Swedish)

A systematic investigation at the department of dermatology of the Finsen Institute, Copenhagen, showed that eczema caused by rubber is of rather widespread occurrence and not confined to certain occupations as previously supposed. Of the 80 reported cases, representing about 2 per cent of the cases of hypersensitivity eczema, only 25 were occupational. Rubber footwear and articles of clothing were the dominating causes of the eczema (about 74 per cent). Eruptions on the feet caused by rubber were in most cases difficult to differentiate from mycotic eczema. Etiologically the rubber itself was subordinate in relation to the accelerator agents used in manufacture. Of these mercaptobenzothiazole was the most frequent cause of sensitization. The prophylaxis of rubber eczema is sometimes difficult on account of the widespread use of rubber, its indispensability in certain garments and the penetration of the accelerator agents. Cold-vulcanized rubber can often be tolerated in cases in which there is only accelerator hypersensitivity. — J.A.M.A.

- 378 A Skin Eruption Due to Mite-Infested Tobacco. I. Rokstad.
Nordisk Med., 27, 1545-1548 (1945) (Norwegian)

Twelve women working in a Norwegian tobacco factory developed an itching red papular eruption; in one case it covered face, neck, thorax and flexor aspect of arms, while in the remaining cases it was limited to the face and neck or between the fingers. The work, which was very dusty, consisted of emptying cases of tobacco spoilt during storage. The eruption appeared on the first day of exposure to the dust, and passed off from two to seven days after the work was discontinued. The general clinical picture resembled a previous outbreak which had been traced to figs infested with mites, and examination of samples of the spoilt tobacco showed that it contained mites in large numbers. When mites were rubbed into the skin of 22 subjects (eight cases of eruption and 14 normal persons) a red papular eruption appeared after 48 to 72 hours in seven of them (three eruption cases and four normal subjects). The author was able to show that the eruption was not due to sensitivity to tobacco, but was probably due to some unknown toxic substance in the mites. It was not possible to identify the mites; two kinds were present in the tobacco. — *Bull. Hyg.*

- 379 Dermatitis Among Workers Employed in the Citrus By-Product Industry.
M. Seidmann. *Harefuah (Jerusalem)*, 29, 125-128 (Sept. 18, 1945) (Hebrew)

"Dermatitis among workers employed in the citrus by-product industry is studied. Factories and groves were visited. Patch tests were performed and 40 cases were under clinical observation for about two years. The following observations were made: Crude citrus oil is a primary irritant. Diluted solutions, as used in industrial manipulations, cause dermatitis among sensitive persons. The clinical picture is of a recurrent dermatitis on the hands and arms with acute, subacute, and eczematous symptoms. Devices were proposed to protect workers." — *Bull. Hyg.*

- 380 Dermatitis From Wearing Army Spectacles. W.O.G. Taylor, A.G. Fergusson and W.R.G. Atkins. Brit. Med. J., 2, 40-42 (July 1, 1945)

Six cases of dermatitis related to the contact area of nickel silver spectacle frames were observed during a three-month period and presented in this paper. History of onset of the skin lesion, prompt recovery when glasses were not worn, and skin test response to the frames and similar alloys indicate that the condition represents a sensitivity reaction. Nickel silver contains copper, zinc and nickel. Skin tests indicate that nickel is the offending substance. References to other cases of nickel sensitivity are quoted. The mechanism of development apparently involves the production of an electrolytic action between the alloyed metals with subsequent nickel salt formation whenever perspiration supplies the necessary electrolytic, conductive solution. "Silent sensitization" does not appear necessary to explain the development of the sensitivity. — J.I.H.&T.

- 381 Percutaneous Photosensitization Due to Handling of Parsnips. Vera Starck. Acta Dermato-Venereologica, 25, 179 (Sept., 1944) (Swedish)

Thirteen persons working in a factory which produced dried vegetables complained of an unusual looking skin change on the hands. Investigations revealed that the dermatitis was due to sensitization to light caused by work with parsnips. The author demonstrated in experiments that the parsnip root contains some substance liable to render the skin sensitive to a certain kind of radiation, which will remain for some time after the exposure. The effect is not due to the parsnip juice alone. — J.A.M.A.

- 382 Contact Dermatitis Due to Contact with Chrome 17 Per Cent Steel Identification Tags of the U.S. Navy. M.C. Harris. J. Allergy, 16, 299-301 (Nov., 1945)

Coleman reports one case of contact dermatitis caused by contact with chrome 17 per cent steel identification tag used by the navy. No generalized symptoms of chrome poisoning were noted. The cutaneous lesion was preventable only by use of a leather pouch impermeable to sweat. — J.I.H.&T.

- 383 Benzidine as Cause of Occupational Dermatitis in a Physician. R.L. Baer. J.A.M.A., 129, 442-443 (Oct. 6, 1945)

A physician suffered from a severe recurrent eczematous dermatitis of the hands and a milder dermatitis on the face. Patch tests with a series of materials to which he had been exposed in the course of his work showed that he was strongly hypersensitive to benzidine powder. A recheck of the dates of the various attacks of dermatitis revealed that each attack had started on a day when the patient had performed a benzidine test for blood in a stool specimen. — Author's summary.

- 384 Chlorophyll and Adrenal Cortical Extract in the Local Treatment of Burns. G.H. Collings, Jr. Am. J. Surg., 70, 58-63 (Oct., 1945)

A new material is proposed for local burn therapy. It is composed of desoxycorticosterone and chlorophyll in a base of bismuth ointment. The bismuth ointment is suggested to relieve pain, give comfortable dressings, and give ease in application and removal of dressings. The desoxycorticosterone is suggested to reduce or prevent increased fluid passage from capillaries. The chlorophyll is suggested to stimulate tissue repair and to prevent infection. This combination is reported to be compatible and fairly stable. When used in a small series (91 cases) of industrial

burns, the results from this material in the third degree and "second degree spot" burns indicate a soothing effect of an ointment, reduced infection, decreased fluid loss, and accelerated repair. Wider trial is desired for this material. -- J.I.H.&T.

- 335 The Treatment of Eye Burns with Albucid. A.Z. Goldenberg.
Vestnik Oft., 23, 42 (1944) (Russian)

Very encouraging results are reported from use of a 30 per cent Albucid ointment in 45 cases (half of them severe) including chemical and thermal burns and one due to an explosion. -- Am. J. Ophth.

- 336 A Case of Burns Associated with Bilateral Retinitis. A.L. Newson and K.B. Armstrong. Med. J. Australia, 1, 459 (May 5, 1945)

A soldier received an extensive second-degree burn by accidental ignition of low-octane gas. Toxic symptoms developed on the second and third days. On the second day of illness the patient complained of blurred vision, and this persisted. When the vision was tested two weeks later he could count with each eye merely fingers at four feet distance. In each eye the macula was surrounded by a large white area somewhat similar to that seen in malignant hypertension. In the center of the area was a dull-red spot. Five to six smaller patches were scattered over the posterior portion of each fundus, but only one small hemorrhage was seen. A month later vision had improved to 6/36 in each eye. The peripheral patches had been largely absorbed and those around the macula were in course of absorption. -- Am. J. Ophth.

- 337 Cleansing of Oil-Covered Skin and Burns. L. Schwartz and H.S. Mason.
Arch. Surg., 51, 55-58 (July-Aug., 1945)

[In this investigation of the cleansing of oil-covered skin and burns, 165 surface-active agents manufactured in the United States and commercially available were systematically studied.] Some 350 mixtures of single surface-active agents in combination with both light and heavy liquid petrolatum (purified mineral oil) were the subjects of approximately 700 tests of comparative activity in removing heavy fuel oil and tar from the skin. The test oils employed were heavy and light fuel oils. [Three mixtures of surface-active agents were found capable of completely removing heavy fuel oil without ostensible mechanical action in the course of three fifteen minute applications on surgical gauze but were also found to have poor detergency. Dioctyl sodium sulfosuccinate in 10 per cent light liquid petrolatum solution had good detergency and high activity as an oil remover in dressing form.] -- Authors' summary.

Industrial Medical Practice

- 338 The Relationship Between the Industrial Physician and the Community Practitioner. C. Leggo. Ind. Med., 15, 137-138 (Mar., 1946)

Nine situations are described where the plant physician should be expected to initiate the referral to community physician; such cases include certain types of surgery, tuberculosis, heart conditions, syphilis, eye or dental defects, communicable diseases, and others. On the other

side, six cases are discussed in which the community practitioner should initiate a referral to the industrial physician; these cases should cover those suspected to be of occupational origin, or where working conditions or hours are concerned, and those in which claims for compensation might be involved. In all cases the relationship between the industrial physician and community practitioner must be free and not strained in any way.

- 389 A Comprehensive Mental Hygiene Program at Caterpillar Tractor Company - Improving Human Relationship in Industry. H.A. Vonachen, B. Mittelmann, M. H. Kronenberg, A. Weider and H.G. Wolff. Ind. Med., 15, 179-184 (Mar., 1946)

This paper describes a project devoted to the development of an industrial psychiatric program. The main points developed are: (1) a new interviewing technique; (2) an induction talk fortifying the employee against the stress of industrial work; (3) shortly after employment, a psychiatric interview to discover each individual's personal assets and liabilities; (4) a lecture series to train foremen to recognize and manage the minor emotional problems of men under him; (5) routine personality evaluations by means of psychological tests; (6) psychiatric counseling and brief therapy for those with personality disturbances; and (7) technique for insuring the readjustment of the veteran to industrial situations. Each point is discussed and illustrated by reports of actual cases. The procedures described are useful in placing persons in positions which use their capabilities to the fullest and in furnishing ready counsel and therapy to combat situations which arise, and they should be carried out with complete understanding, caution and tact.

- 390 Aluminum Therapy at Parral, Mexico. Anon. Mining World, 8, 10-12 (Mar., 1946)

The Parral Unit of A.S.&R.'s Mexican subsidiary is the first in any Latin American country to adopt aluminum prophylactic and therapeutic treatment for silicosis, in addition to 85 in Canada and 19 in the United States now using it. According to Mexico's silicosis law, in effect since 1932, eight degrees of silicosis are recognized; the first three, normal to slightly fibrous, call for no indemnity. Beyond the third stage, indemnity depends on the extent of disability, as determined by the company doctor and the union doctor. The stage at which indemnity begins is well below that which would be considered any disability in the United States. Acceptance of prophylactic or therapeutic treatment is voluntary. For the former, aluminum powder is dispersed into the change rooms, during shift changes, with controlled ventilation, at about 30,000 particles per cc., and the employees breathe normally. For the therapeutic treatment, higher concentrations are inhaled through a special hose inserted in the mouth, and the number and time of treatments vary with the severity of the disease, ranging from 30 treatments of six minutes to 60 of 10 minutes. The theory of the effect of aluminum on silicosis is discussed and details of the treatment are given.

- 391 Metatarsal March (Fatigue) Fractures. A.L. Leveton. Am. J. Surg., 70, 49-57 (Oct., 1945)

Dr. Leveton treats the disease of metatarsal march fractures on a statistical basis from experience with 259 cases among army personnel. The condition, although extremely rare in civilian life, is an occupational disease of soldiers, especially those undergoing the rigorous training and marching programs after induction. Dr. Leveton discounts many previous explanations of this condition to propose fatigue of the peroneus longus

and the tibialis posterior as the cause. Physical findings and X-ray serve to diagnose the condition. In the army, patients were kept three weeks at bed rest without a cast and then returned to duty after a 2-4 week reconditioning program. Approximately 99% of the patients made a good recovery without residual symptoms. — J.I.H.&T.

- 392 A Medical Service Plan Suitable for Chemical Industry - In "Current Developments in Plant Management." W. von Pechmann. Ind. and Eng. Chem., 38, 97-99 (Mar., 1946)

The "Bloom plan", from its experimental stage in 1929 to a full-grown industrial service in 1945 was developed in the Ansco Division of the General Aniline and Film Corporation. For the first four years a group of physicians was selected to provide the necessary medical service under contract but in 1933 it was reorganized to permit employees to choose their own physicians, which plan was far more successful. Since family physicians could be retained, all practitioners had a stake in the success of the enterprise, and all were assured of their pay. The fees are \$1.20 a month and the company pays 75¢ for each member. Benefits include teeth extraction, X-ray, laboratory, and sickness insurance for hospitalization. Wives and dependent children under 13 pay \$1.50 a month and are entitled to operation, hospitalization for 30 days a year at \$2.00 a day, care of fractures, and maternity care. The great advantage of the "Bloom plan" is that it can readily be adapted for any kind of industry and the cost can be set at a figure to ensure success. Also, in cooperation with the medical society, this type of service can be provided to industrial workers on the basis of freedom of choice of physicians.

- 393 The Copper Ionization Treatment of Fungous Infections. W.J. Lahey and J.E. Burns. Naval Med. Bull., 48, 554-557 (Apr., 1946)

This report covers 154 cases over a period of six months. (1) Our experience indicates that the copper ionization bath is a safe and valuable method of treatment of fungous infection of the types described. (2) An appreciable number of cases shows persistent scaling or fissuring of the skin despite disappearance of all acute signs. These require the supplementary use of keratolytic agents to complete the healing process. (3) The method possesses certain advantages over the usual forms of therapy. Chronic cases are generally benefited. The vexing problem of "overtreatment" is by-passed. The procedure is simple and uniform in its application. The apparatus necessary is easily constructed from scrap material and requires little servicing. The over-all cost of treatment is minimal. These factors are of particular significance in military medicine. — Authors' conclusions.

- 394 Epidemic Keratoconjunctivitis. Clinical Aspects and Successful Treatment O. Glantz. Klin. M. f. Augenh., 106, 561-571 (May., 1941) (German)

A report about 312 cases of epidemic keratoconjunctivitis treated in Glantz's practice during 1938-1940. The majority (190) were spontaneous and of undetermined etiology. The rest occurred after: removal of corneal foreign bodies, other corneal lesions, chemical burns, lid abscesses, and removal of chalazion or lime concretion or pterygium. The main treatment was with optochin hydrochloride 1 per cent solution, which the author regards as a specific for the condition. The average duration was seven days. -- Am. J. Ophth.

- 395 Prevention of Oral Disease of Occupational Origin. L.D. Heacock.
Ind. Med., 15, 184-187 (Mar., 1946)

Within the medical services of an industrial plant should be dental services including: (1) preplacement and periodic oral examination of all employees; (2) emergency treatment, including the care of occupational injuries and disease; (3) treatment and eradication of oral sepsis; (4) adequate recording of findings and recommendations; and (5) education in dental health and follow-up of individuals to encourage complete and regular dental service. The pathological oral conditions may be classified as: (1) abrasion from dusts; (2) decalcification by acid fumes; (3) caries caused by deposits of flour or sugar; (4) pigmentation of enamel caused by fluorides, copper, chrome or dyes and pigmentation of gingivae, from the ingestion of minerals such as mercury, bismuth, lead and nickel; (5) inflammation from many factors, including the halogens or ammonia; (6) circulatory disturbances shown by alteration of the blood supply to gingival tissues; (7) degeneration due to radium poisoning; (8) neoplasms caused by tar, pitch or irritation by foreign bodies; and (9) lesions which are manifestations of systemic diseases such as are found in the stomatitis of mercury, and in poisoning by lead, bismuth, radium or benzene.

- 396 France Provides Health Services for Small Industries. F.B. Pedley.
Can. Med. Assoc. J., 53, 493 (1945)

Industrial health programs for small industries that collectively employ the greatest number of workers has become a problem. Because these industries cannot alone support an adequate health program, attempts have been made to organize them regionally into units of 1000 to 3000 employees and to supply full time medical and nursing services. These attempts have not been notably successful. In France, and particularly near Paris, this type of organization has proceeded apace. Impetus for this growth has in large measure arisen from the work of the system of family allowances which has been operating in France for a number of years. These programs supply a full time doctor, medical social worker, and secretary in central office and examination station. Here pre-employment and periodic examinations are given as well as special consultative service. At present in one such group the operating cost is said to be 150 francs per employee per year, with a charge of 100 francs to the plants served. The number of employees in the particular service described is about 3000. — J.I.H.&T.

Industrial Relations, Personnel

- 397 Industry and Medicine - What Each Expects of the Other.
H. Strong. Ind. Med., 15, 194-196 (Mar., 1946)

The article discusses several qualifications which industry should expect in the industrial physician. They include special training in industrial medicine, familiarity with plant environment and possible hazards and an understanding of psychiatry and preventive medicine. Above all he should be a health educator. On the other hand, medicine should expect industry to give to the industrial physician a rightful place in the plant organization, with adequate salary and time for his job, and also a growing understanding of his value to the successful operation of the plant.

- 398 The One-Eyed Worker. J. Minton. Brit. J. Ophth., 29, 472-476 (Sept., 1945)

One-eyed people fall into two groups: (1) those who have been without one eye since childhood and (2) those who have lost the vision of one eye as the result of injury or sickness. The first group are not handicapped. In the second group the degree of depth perception acquired depends on (1) intelligence and experience; (2) age - young workmen adjust more quickly; (3) sex - women adjust more slowly; (4) the loss of the dominant or master eye produces greater disability. Factors in the length of the period of absence from work are: fear, compensation and litigation difficulties, and unwillingness of certain firms to employ one-eyed workers. The safety of the good eye should be the first consideration in the employment of these workers. -- From J.I.H.&T.

- 399 Teamwork for Industrial Health. J.J. Bloomfield. Am. J. Pub. Health, 36, 261-268 (Mar., 1946)

We have learned that we must bring the benefits of modern medicine and hygiene to industrial workers and to provide a safe and healthful environment, adequate medical and nursing service, preplacement and periodic health examinations, general health education, proper feeding facilities, and essential welfare services. During the war we accomplished much which seemed impossible. For example, in 1945, there were only three deaths from TNT poisoning among approximately 100,000 employees engaged in TNT operations; in World War I there were 230 deaths for every billion pounds of explosives manufactured as compared with only five deaths during this war. Assistance in developing such medical services is available in our communities but in order to have a well coordinated program, all of the people, not only employers and employees, must take an active part. We have the brains, the man power and natural resources to build the healthiest nation in the world. -- From Author's summary.

- 400 Three-Cornered Cooperation - How the Safety, Medical and Personnel Divisions Fit into the Industrial Picture. J.S. Felton. Nat. Safety News, pp. 26-27, 102,106 (Feb., 1946)

For the successful operation of any industrial health scheme there must be unified cooperation among all departments and each member of the operating staff must follow certain basic principles such as knowing his workers, going into the shops and understanding all phases of the work and working conditions, learning and using the workers' vocabulary, and avoiding a "superior" attitude. Likewise, all plant agencies should cooperate with other medical, employment and social service organizations of the community.

Putting the Disabled Veteran Back to Work

- 401 A Discussion of the Psychiatric Aspects of Rehabilitation. J.E. Finesinger and E. Lindemann. Dis. Nerv. System, 6, 149-155 (May, 1945)

The role of the psychiatrist in helping veterans to readjust to civilian life is discussed. Psychological factors which enter into the problem are the effect of army life changes in home setting, and readjustment

at home. Psychiatrists must cure manifest neuroses and psychosomatic disorders and also be alert to the potential threat to mental health inherent in the crises of readjustment. Suggestions which are deemed helpful in the solution of these problems are listed.

- 402 Psychiatry: Rehabilitation. Y.P. Williams. New England J. Med., 233, 64-68 (July 19, 1945)

The contribution to rehabilitation which the civilian physician must make is discussed. Apparent complete restoration to mental or emotional health before discharge does not preclude difficulties in making the transition back to civilian life. The attitude of the community and employers, in making the veteran feel that he is an asset to the community, is important. Psychiatric training is of great value to personnel directors in industry. Each case should be handled on an individual basis. -- J.I.H.&T.

- 403 Motor Industry Reports on Status of Driving Aids for War Veterans. Anon. Automobile Facts, 5, 6 (Mar., 1946)

Progress has been made in getting ready for volume production, car driving aids for disabled World War II veterans. Such aids include hand-operated throttle control, brake and gear-shift levers for right-hand or left-hand operations, special steering knob, electric signaling lever, control buttons for lights and starter, a flip switch to throw the clutch to manual or automatic control, and a hill-holder unit. The parts are being made to fit all cars produced by an organization, and free exchange of manufacturing facilities between producers of the kits will speed up distribution.

- 404 Detection and Management of Personality and Psychosomatic Disorders Among Industrial Personnel. B. Mittelman, A. Weider, H.A. Vonachen, M. Kronenberg, Norma Weider, K. Brodman and H.G. Wolff. Psychosom. Med., 7, 359-5 (Nov., 1945)

Group of 574 veterans seeking employment or reemployment were given psychiatric interviews, and many of them were given either the Cornell Selectee Index Test or the Cornell Word Test. Men found to have personality disturbances but considered employable, were assigned jobs with a minimum of noise, smoke and demand for speed. They were allowed to leave work when fatigued, gradually assuming full time duties. With selective placement and psychotherapy, those with personality disturbances held their jobs as long, on the average, as normal workers. A similar series of interviews and tests was undertaken for a group of employees and prospective employees that had not seen military service. Most of these who required psychotherapy were benefited. -- J.I.H.&T.

- 405 Selective Placement for the Handicapped. War Manpower Commission, United States Employment Service, Washington, D.C. Revised Feb., 1945. 138 pp., index.

In this pamphlet a simple logical plan is presented for the placement of the so-called physically handicapped individuals in industry on an even footing with their more fortunate competitors. This is accomplished by focusing attention upon the capabilities of an individual for performing specific tasks, rather than upon physical abnormalities which have no direct bearing upon efficiency in doing them. A simple check form for analyzing any type of work is illustrated which indicates working conditions and physical activities required. A similar form with identical check items evaluates the capacity of an individual for performing those

activities and indicates restrictions as to working conditions. Space is provided on each form for brief explanatory remarks. The forms are accomplished independently by trained personnel. The problem then becomes merely one of fitting the individual to the job, and in this respect those with physical abnormalities are considered on the same basis as those without. A large part of the pamphlet is devoted to the description of specific physical disabilities and their evaluations which will prove of great value in standardizing physical appraisal. — J.I.H.&T.

- 406 The Physically Impaired Worker in Industry. R.L. Brown and R.L.C. Butsch. Ind. Med., 15, 189-192 (Mar., 1946)

Emphasis in this paper is placed on a simple, workable formula for the analysis of the physical requirements of jobs. It describes the method of examining, limiting and coding physically impaired workers by the use of tabulating cards. The results of a study of 1,757 physically impaired individuals hired at a large aircraft plant during the year 1944 are presented. It is concluded that with proper placement the physically impaired worker is an asset and not a liability in industry. — From Authors' summary.

- 407 The Present and Future Effects of War Neuroses. C.C. Burlingame. J. Nerv. and Ment. Dis., 101, 429-433 (May, 1945)

Besides a large number of neurotics among service men, there is another large group among workers who are faced with new strange problems concerning their jobs, their domestic affairs, and their social relationships. There are too many of these cases for psychiatrists to handle on a personal and individual basis. Psychiatrists must work through social organizations — especially industrial management and labor groups. The author believes that proper adjustment to a job is a cardinal factor in rehabilitation, and that therefore, supervisory personnel and foremen should receive particular training from psychiatrists. — J.I.H.&T.

- 408 Physical Capacity for Work. V.K. Harvey and E.P. Luongo. Occ. Med., 1, 1-47 (Jan., 1946)

Examination of a human being to find what work he is fit for involves knowledge of a method not yet possessed by medical science, namely, a method of estimating reserve compensation. Present technique of measuring job requirements and physical capacities are only reasonable guides. They have value only as guides since there is a substantial margin of error both in the determination of the requirements of the job and in the physical evaluation and selective placement of the applicant. In the final analysis, regardless of what systems of job analysis and of evaluation of working capacity are used, the two most important factors in estimating physical capacity for work is the diagnostic acumen of the examining physician and his knowledge of industrial conditions. In this connection, the future of the physically impaired in government or private industry will be as good as the type of preventive industrial medical service which management is willing to provide. The future of industrial medicine is closely allied to "human engineering" in the promotion of individual physical and mental hygiene, nutritional guidance, physical training and control of fatigue and in the aiding of management in the selection of employees for specific types of work. In this connection, periodic reexamination of employees and jobs probably should be mandatory, especially in the case of the physically impaired. The "must" in dealing with the applicant for work who presents an impairment, whether he is a veteran or a non-veteran, is to give him a fair chance to make good under his own

power plus whatever assistance or special benefits are provided by law --- state, municipal or federal. The general risk that an employer takes in hiring seemingly normal persons without being able to measure the large number of success factors involved in work is considerable. It may exceed any risk he takes with physically impaired persons whose capacities have been evaluated and matched with the requirements of the job. Mistakes in placing the worker with an impairment are inevitable, as in the case of the able-bodied, but the failure of a person with a particular type of defect to do a particular job should not prejudice an employer against considering another person with the same defect for the same job unless it has been definitely substantiated that there is a physiologic or a psychologic contraindication in the requirements of the job. In cases in which there is a doubt whether the remaining capacities of the person with an impaired function are adequate for successful performance of the job, the doubt should be resolved in favor of the applicant, with the understanding that if he does not prove successful in the job, he may be referred to appropriate rehabilitation authorities or reassigned, and that if this is not possible, his employment may be terminated. -- Authors' conclusions.

Absenteeism, Hours of Labor, Etc.

- 409 Effects on Industrial Production of the Administration of Delta 5 Pregnenolone to Factory Workers. I. G. Pincus and H. Hoagland. *Psychosom. Med.*, 7, 342-346 (Nov., 1945)

Two groups of workers, one with fixed wages and the other on piece work, were studied. All workers were told they were receiving a "vitamin-like" substance for colds. Control placebos were identical in appearance and taste to the 45 mgm. pregnenolone tablets. Each worker received one tablet per day. The group with fixed wages worked on a daily quota basis, cutting sole leather from hides. Pregnenolone did not produce a significant change in efficiency as measured by per cent of scrap leather. The group on piece work was making bayonets for army rifles. Pregnenolone increased production above the placebo level by 8.2% (statistically significant). Reduction in amount of waste was 32.7% greater with pregnenolone than with the placebo, but this figure is not significant statistically. -- J.I.H.&T.

- 410 Effects on Industrial Production of the Administration of Delta 5 Pregnenolone to Factory Workers. II. G. Pincus, H. Hoagland, C.H. Wilson and N.J. Fay. *Psychosom. Med.*, 7, 347-352 (Nov., 1945)

Described are two series of tests on skilled workers handling spectacle frames and cases. In the first series, some were given 50 mgm. per day of pregnenolone, some were given lactose placebos, identical in appearance and taste, and a few were given nothing. Earnings by those taking pregnenolone were 1.32% above the placebo level (statistically significant). There was a saving in waste of 5.7% over the placebo level (barely significant statistically). In the second series, the effect on production of pregnenolone dosage was investigated. Group (1) received 0.1 mgm. per day; group (2) 25 mgm. per day; and group (3) 70 mgm. per day. All tablets looked and tasted the same. Production in group (3) was significantly greater than in group (1), but production in (2) was not significantly greater than in (1) -- J.I.H.&T.

Insurance and Medical Economics

- 411 Occupational Dermatoses: Disability and Compensation. C.G. Lane.
New Eng. J. Med , 233, 711-715 (Dec. 13, 1945)

Data on compensation paid during disability due to occupational dermatoses, medical expenses, amount of wages lost, and duration of disability are presented. Although incomplete, the figures show a steady rise in the incidence of dermatoses adjudged compensable, and falls in the average number of days lost, average indemnity, and average cost of medical care. More adequate data on these points are greatly to be desired; adoption of uniform criteria for compensable occupational dermatosis is also desirable. The criteria published in 1942 by the National Committee on Occupational Dermatoses are to be recommended for this purpose. — J.I.H.&T.

Laboratory Toxicological Studies

- 412 Toxicology of 1,2-Dichloropropane (Propylene Dichloride). I. Studies on Effects of Daily Inhalations. L.A. Heppel, P.A. Neal, B. Highman and V.T. Porterfield. J. Ind. Hyg. and Tox., 28, 1-8 (Jan., 1946)

Various species of animals received simultaneous inhalation exposures to 1,2-dichloropropane. Many deaths occurred among rats, guinea pigs and rabbits receiving less than eight exposures to 2200 ppm. At a concentration of 1000 ppm, deaths occurred among dogs after 24 exposures, among guinea pigs after 22 exposures and among rats after as few as seven exposures. Some of the animals survived over 100 exposures. The animals were exposed seven hours daily and nearly always five days a week. Animals dying after less than 12 exposures often showed marked visceral congestion, fatty degeneration of the liver, kidney and less frequently the heart, and areas of coagulation necrosis in the liver. The adrenal cortex showed marked lipoid depletion in several rats and extensive necrosis in the guinea pigs. In general, except for marked splenic hemosiderosis particularly noted in rats and subcortical fibrosis of the adrenal in guinea pigs, animals killed after 35 or more exposures showed no significant or occasional minimal lesions. Hematological studies of dogs and rabbits revealed no abnormalities. The liver was not damaged to any extent. Determinations of the concentration of dichloropropane in the blood of exposed rabbits and dogs were made. Exposed rats, mice, and guinea pigs excreted a substance in the urine that produced a red color when the urine was dried on wood shavings. — From Authors' summary.

- 413 Degeneration of the Basal Ganglia in Monkeys from Chronic Carbon Disulfide Poisoning. R. Richter. J. Neuropath. and Exper. Neurology, 4, 324-353 (Oct., 1945)

(1) Four monkeys (*Macaca mulatta*) were chronically poisoned with carbon disulfide by exposing them to inhalation of the vapor for periods of from 12 to 21 months, when marked symptoms of intoxication appeared.

(2) In all of the animals the essential and constant pathological changes consisted in extensive, bilateral and symmetrical necrosis of the globus pallidus and the zona reticulata of the substantia nigra. (3) The monkeys presented in common profound motor disturbances characterized by reduction and slowness of all types of movement without paralysis, incoordination of locomotion and climbing, plastic cog-wheel rigidity of the skeletal muscles, flexor postural attitudes of the trunk and extremities and severe action and tension tremor. (4) It is believed that the data justified the conclusion that the motor syndrome observed in the animals is attributable to the destruction of the globus pallidus and substantia nigra and that there are close similarities pathologically and physiologically to the Parkinsonian syndrome of man. — Author's summary.

414 Danger of Inunction with DDT. E.L. Taylor. Lancet, 249, 320 (1945)

A 5% solution of DDT in acetone, liberally applied to the ears, head, and feet of rabbits eight weeks old and eight months old, caused severe poisoning, generally fatal. A 0.5% solution caused non-fatal poisoning in the younger rabbits, although it apparently did not affect the older ones. Muscular tremors, paralysis, nervous excitability, and convulsions were among the poisoning symptoms; blood magnesium was normal in the single instance in which it was determined (4th day after inunction). Taylor has previously observed that 2% DDT in liquid petrolatum is fatal when applied to the ears, nose, feet and tail of rats. These observations emphasize the danger of attempting to apply DDT by inunction for treatment of mange in rabbits or scabies in man. — C.A.

415 Metabolic Factors in Oxygen Poisoning. I. Gersh and C.E. Wagner. Am. J. Physiol., 144, 270-277 (July, 1945)

The cellular pathology underlying oxygen poisoning has been suggested to be the oxidation of cellular components related to enzyme activity; this oxidation should vary with the metabolic rate of the animal as well as with the oxygen tension. Findings from experiments on cats support this theory. Marked differences between cats and rats in the response to increased oxygen tensions are pointed out. The applicability to humans of data obtained by studying animals exposed to increased oxygen tensions is thus limited. — From J.I.H.&T.

416 Tolerance to Arsenic Trioxide in the Albino Rat. E.R. Norris and H.W. Elliott. Am. J. Physiol., 143, 635-638 (May, 1945)

(1) Rats have been shown to acquire a true systemic tolerance to arsenic trioxide in solution, injected intraperitoneally as sodium arsenite. (2) The toxicity of a dosage of arsenic trioxide and the progress of adaptation has been shown by following the hypothermia after injection. (3) The tolerance to injected arsenic trioxide was shown not to be due to decreased rate of absorption from the body cavity. — Authors' summary.

417 In Vitro and In Vivo Studies of the Effect of Arsenite on the Respiration of Rat Tissues. H.W. Elliott and E.R. Norris. Am. J. Physiol., 143, 639-643 (May, 1945)

By tissue respiration studies, arsenic trioxide action-concentration curves have been prepared for cerebral cortex, diaphragm, kidney cortex and liver in the albino rats. Fatal doses of arsenic trioxide administered either subcutaneously or peritoneally in vivo have no effect on cerebral cortex respiration and cause reduction of diaphragm and kidney

cortex respiration. Liver respiration is stimulated in subcutaneous and reduced in peritoneal administration. The absence of effect on the cerebral cortex respiration, while the respiration of the muscle tissue of the diaphragm is reduced, would suggest that the hypothermia of arsenic poisoning is influenced more by a decreased rate of energy metabolism of the individual tissues than by a direct effect on the temperature regulating center in the central nervous system. — Authors' summary.

Public Health

- 418 Britain's National Health Act. Editorial.
J.A.M.A., 130, 958-959 (Mar. 30, 1946)

The proposal for the nationalization of medical services in Great Britain is condemned by the writer as "one of the most backward steps ever conceived for a civilized nation" and a proposal "to enslave its own medical profession" to the "whims of bureaucrats" and the encumbrances of red tape. Further fear is expressed that standardization will rob the medical profession of its scope for individuality and will halt the tremendous advances that have been made in scientific medicine. The proposal that the government take over the private hospitals is deplorable, as it would remove the spiritual motive in the care of the sick. Hope is expressed that the long debate in the British parliament, which is inevitable, "will develop some means for retaining in Great Britain the spirit and the tradition that have earned for British medicine up to now the respect of scientists throughout the world".

- 419 Water-Borne Outbreak of Gastroenteritis in an Industry. L. Louis.
Monthly Bull. Ind. State Board of Health, 49, 35, 43 (Feb., 1946)

An outbreak of water-borne gastroenteritis occurred in January, 1946 in an industry in a small town in north-central Indiana. Approximately 30 out of 100 employees were affected. There were three sources of water supply, with cross connections, and the cause of the epidemic was traced to failure to close the proper valves when changing the source of some of the water supply. The water was later purified by thorough flushing, and the cross-connections will be eliminated in accordance with State regulations.

- 420 Industrialization of India and Its Likely Effect on Tuberculosis Problems.
P.K. Sen. Indian Med. Gaz., 30, 35-41 (Jan., 1945)

Concern is expressed that the imminent large-scale industrialization of India and the employment of workers from rural areas may be attended by a heavy toll of tuberculosis. Control of new entrants is given as the key point. Placements or rejections should be made on the basis of tuberculin tests. Crowded living conditions, feeling of insecurity on the part of the workers, and insufficient wages are problems to be dealt with by the Planning Committee. — From Bull. Hyg.

- 421 Pathogenic Action of Calcium Cyanamide Used in Agriculture as a Fertilizer. R. de Gaulejac and P. Dervillee. Arch. Malad. Professionnelles, 8, 323-327 (1944-1945) (French)

Calcium cyanamide for use as a fertilizer in agriculture contains about 30 per cent of quicklime, and a heavy oil is incorporated in it to make it less powdery, but in damp conditions the oil becomes altered and the substance again becomes powdery. Before the war it was sold in a granulated form in closed containers. It has a local caustic action on the skin and mucous membranes, due to the contained quicklime, and, if absorbed, as from mucous membranes or in the food, it may produce dyspnea, faintness and a feeling of suffocation, attributed to the action of free cyanamide on the respiratory centers. The authors give notes of cases, and state that the effects are well-known; they are not fatal. The following precautions are recommended: use the granulated form and, as it usually contains some powder, moisten it slightly before use; choose dry weather with little wind for spreading the fertilizer and mix it well into the soil; protect the skin, especially moist regions, by light, close fitting clothing; if a burning sensation is felt or contact seen, wash at once, and after the work is done, bathe, change the clothing, and wash out the mouth and nostrils. — Bull. Hyg.

- 422 The Presence of Copper and Lead in Some Human Tissues. P.R. van der Riet Copeman. Clin. Proc. of J. Cape Town Post-Graduate Med. Assoc., 4, 473-482 (Oct., 1945)

This South African study shows that both copper and lead are widely distributed in human tissues, and that copper is present in larger amounts than lead. Copper appears to be present as a catalyst in the formation of hemoglobin while lead present in the tissues is derived from incidental absorption because of its wide distribution as a contaminant in daily life. — J.I.H.&T.

Nutrition

- 423 The Eye as a Guide to Latent Nutritional Deficiency Diseases. A.A. Knapp. Bull. N.Y. Acad. Med., 22, 217-222 (Apr., 1946)

In a group of patients in the armed forces suffering from faulty food intake, certain eye conditions have been demonstrated -- axial myopia, vernal catarrh (also called allergic conjunctivitis), hazy fundus oculi, chorioretinitis, and optic nerve disease. These findings further substantiate earlier animal and human research. When there are no other clinical signs or symptoms of inadequate feeding in a patient, examination of the eyes may reveal the only evidence of malnutrition. Hence, the eye may serve as a guide to latent nutritional deficiency diseases. — Author's conclusion.

- 424 Industrial Canteens in Australia - An Experiment in Central Planning. M.G. Rouse. Ind. Welfare and Personnel Management, 27, 56 (1945)

The Australian experiment in industrial feeding is described. Under the Food Service Branch the government planned, built and equipped cafeterias in war industries. It trained the key staff and managed the feeding

programs. Centralized control and complete standardization were established for all war industries. A hot meal, which conformed to the best nutritional principles was served in 20 minutes on all three shifts at a cost which the worker could afford. In addition to these cafeterias, the government gave encouragement and advice to employers in private industry to establish cafeterias which would carry on beyond the war period. These works cafeterias are considered a better means of nutrition education than propaganda. --
From Can. Med. Assoc. J.

Miscellaneous

- 425 Psychological and Psychiatric Reactions in Diving and in Submarine Warfare.
A.R.-Behncke. Am. J. Psychiat., 101, 720-725 (May, 1945)

The author describes certain objective measures, outside of physiological and psychomotor tests, which have proved useful in the selection of submarine personnel. These measures include the darkened hood, confinement in a sealed chamber, and subjection to anoxia and nitrogen narcosis. The first two are tests for claustrophobia, and anoxia and exposure to nitrogen under pressure bring to light any undesirable emotional reaction. The author stresses the importance of prevention of psychological failure in normal individuals as the result of extreme fatigue. Apart from the matter of proper rest, the individual can be aided by knowledge and insight as to the nature of normal reaction to stress.

- 426 Amenities in War Time Factories. Australia Dept. of Labor and National Service, Ind. Welfare Division. Bull. No. 5. 32 pp. (1945)

"Amenities" is used to cover those parts of the factory that are necessary for the accommodation of employees — toilets, wash rooms, change-rooms, mess room and provision for first aid. The standards described are broadly consistent with requirements contained in regulations applying to industrial premises, such as those of State Factories and Shop Acts and local government ordinances and by-laws. The descriptions of installations in the various amenities rooms are accompanied by photographs and diagrams.

- 427 Let There be Light - at Least Enough for Reading in Libraries.

R.M. Stecher. Bull. Med. Library Assoc., 33, 270-280 (Apr., 1945)

Considerable improvement is desirable and possible in the conditions of artificial lighting commonly found in libraries. Generally diffused lighting is recommended, with a level of illumination at least as high as 25 foot candles, where continuous reading or study may be carried on for periods of an hour or more. For the study of poorly printed material, old manuscripts, fine or unfamiliar writing or printing, as well as sustained reading for several hours, and for the use of people with impaired vision, the general level of illumination should be increased, or supplementary lighting should be employed.

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