

INDUSTRIAL HYGIENE DIGEST

Literature Abstracts

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

Industrial Health News



Issued Monthly By

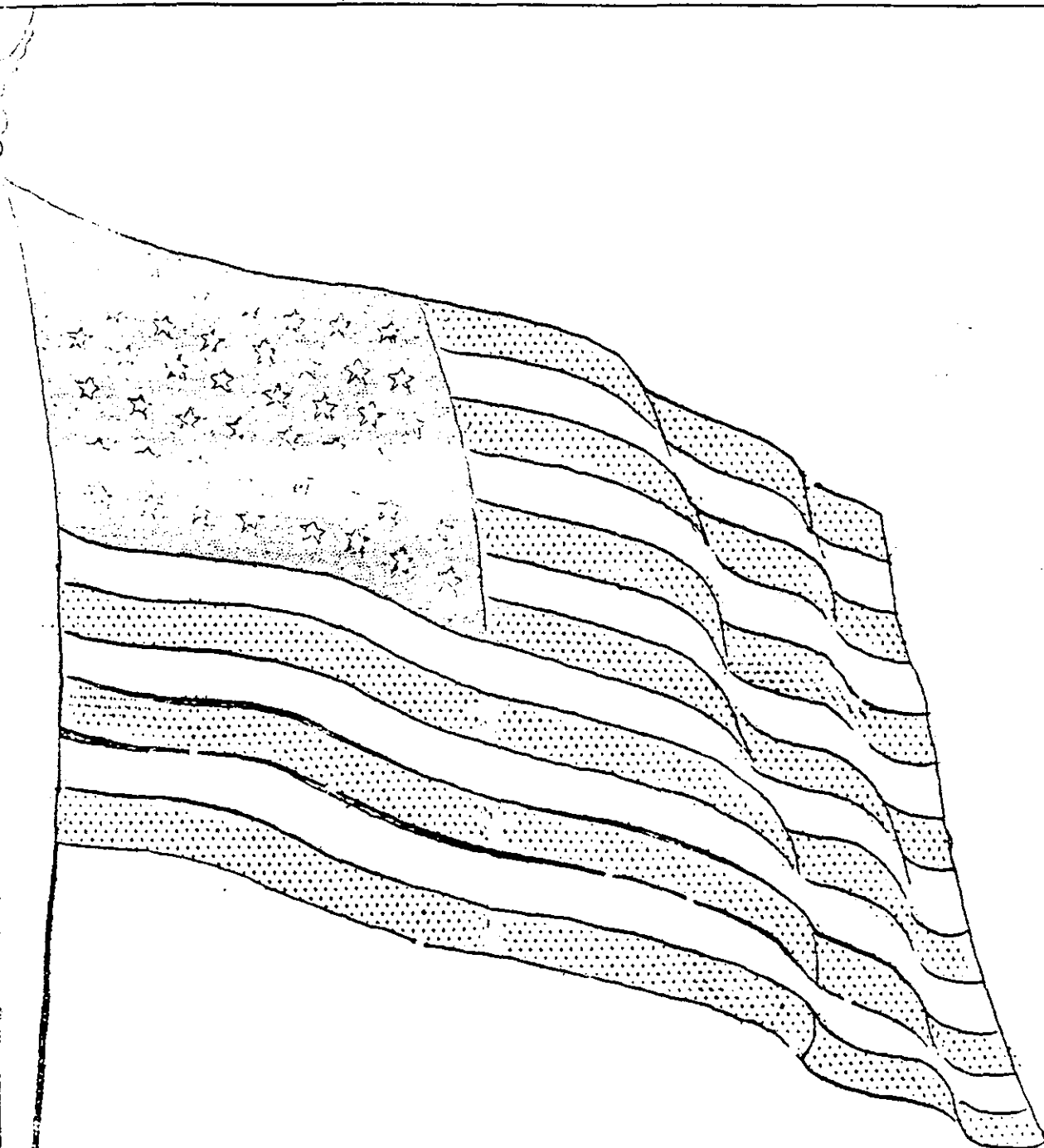
INDUSTRIAL HYGIENE FOUNDATION

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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 combined research and service institution to protect the health of workers in industry.



HEALTHY WORKERS WIN WARS

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INDUSTRIAL HYGIENE DIGEST
Literature and News

News Items

569 Arranging Shifts for Maximum Production.

The United States Department of Labor, Division of Labor Standards has issued a pamphlet entitled, "Arranging Shifts for Maximum Production." Our war effort requires more machine hours, but while machines may run around the clock, the men who operate them must operate by shifts. The pamphlet describes a shift arrangement plan which is designed to increase production while accidents are decreased and the health of workers protected.

570 Ointments to Prevent Ivy Poisoning.

The U. S. Public Health Service reports that two new formulas have been developed for the preparation of ointments that give considerable protection against poison ivy, poison sumac, and poison oak. Experiments have shown that when used properly, in a rather thick layer on the skin, either of these ointments serves effectively to prevent the poisoning. After exposure to poison ivy, however, it is important not to wash off the ointment until the contaminated clothes have been removed. Otherwise, if the skin is cleansed first, the unprotected skin may be exposed to the contaminated clothes. Washing will again make the clothes safe to wear. The two ointments are said to be equally effective as protectives against poison ivy.

Formula 1 (Greasy Ointment)

Castor oil	21.5%
Olive oil	21.5%
Lanolin, anhydrous	21.5%
Diglycol stearate	12.9%
Paraffin, refined	8.6%
Boric acid	2.0%
Sodium perborate	10.0%
Duponol WA pure	2.0%

Formula 2 (Must be Kept Cool)

Cetyl alcohol	35.1%
Stearyl alcohol	5.3%
Ceresin	3.5%
Castor oil	20.8%
Mineral oil	21.9%
Duponol WA pure	1.7%
Sodium perborate	10.0%
Boric acid	1.7%

571 Use of Nitro-Cellulose X-Ray Film Prohibited.

The Public Health Council of the State of New York has amended the State Sanitary Code by adding rules governing the storage of nitro-cellulose X-ray films in hospitals and other institutions, effective June 1, 1942. In effect it is unlawful for any nitro-cellulose X-ray film to be used or taken into any hospital, clinic, dispensary, school, college, home, asylum, or institution. Strict regulations for storage of nitro-cellulose film which is on the premises and

has already been exposed and developed before June 1, 1942 are provided to allow the saving of valuable medical records.

Legal Developments

572 Conjunctivitis.

Machine operator who worked on fabric and leather gloves suffered a marked conjunctivitis of both eyes which compelled her to stop work. Medical evidence indicated that this condition was due to contact with the fuzz and dye from the gloves. Finding of the Industrial Board that said operator was suffering from an occupational disease covered under the Workmen's Compensation Law, upheld. Miller v. VanRaalte Co., Inc., App. Div., March 11, 1942. Industrial Bulletin, (New York), (May, 1942).

573 Previously Existing Tuberculosis Reactivated by Exposure to Sulphur Dioxide. Sufficiency of Evidence to Sustain Award.

The question in this case is whether there was any substantial evidence that the inhalation of gas reactivated a previously existing tubercular condition.

The appellee, in checking a refrigerator unit, was exposed to sulphur dioxide in gaseous and liquid form. He became nauseated and began vomiting blood clots. He says that he has been continuously disabled. Physicians found that he was suffering from tuberculosis. Prior to the exposure, appellee was found to be suffering from tuberculosis. Appellee continued work, and did not take treatment. Three physicians, testifying for appellee, expressed their opinions that the gas reactivated the progress of the tuberculosis. The Board accepted this theory and attributed fifty per cent of the disability to the injury and fifty per cent to the pre-existing condition. It thus appears that there was some substantial evidence before the Board to sustain its finding. Judgment affirmed. Dixie Ice Cream Company v. Ingels, et al. Ky. Ct. of App. Decided June 5, 1942. (CCH).

574 Stone Cutter on Highway Injured by Heat Prostration. Non-Compensable as not Being Result of Accident.

Claimant sought an award of industrial compensation for heat prostration, which was denied by the Industrial Commission. On appeal to the Court of Common Pleas, the jury returned a verdict for defendant. Appeal upon questions of law followed. One question is here presented. Did the court err when it charged the jury that the only question for its determination was, "Did the plaintiff receive an accidental injury, incident to and in the course of his employment?" Claimant suffered heat prostration while performing his customary and usual duties as a stone cutter on a highway improvement. There is no evidence of any unusual happening in the performance of that work. To be compensable, an injury arising out of a claimant's employment must be accidental in origin and cause. Such an injury to be compensable must be the result of accidental means, and not an accidental result from the performance of the usual duties of the employment in the ordinary and customary manner. The record discloses nothing unusual about the manner of performing claimant's customary work. There was no accidental incident, no occurrence out of the normal routine of the employment. There was no error in the charge of the court. Judgment affirmed. Rosato v. Industrial Commission of Ohio. Ohio Ct. of Appeals, 9th Jud. Dist. Decided April 16, 1942. (CCH).

170 Death Occurring While Performing Strenuous Work. Whether Death Caused by Heart Disease. Award to Widow Supported by Evidence.

This is an appeal from an award for death benefits in favor of the widow of William Ward. Decedent was shoveling heavy snow, which was extra hard work and called for extreme exertion on his part, when he collapsed and shortly afterward died. The award is opposed upon the ground that the death was the result of cardiac disease. The medical testimony supports the award. A question of fact is involved and the evidence supports the award. Award affirmed. Ward v. Fifth Avenue Building Company et al. N.Y. Supreme Ct., App. Div., 3rd Dept. Decided May 6, 1942. (CCH).

576 Employee Incapacitated by Heat Stroke. Whether Disability Permanent. Sufficiency of Evidence.

Appellee Jones instituted this suit to set aside an award of the Industrial Accident Board and recover from appellant compensation for total, permanent incapacity, payable in a lump sum. Appellee alleged his incapacity was the result of heat stroke received while working as a common laborer for the International Creosoting and Construction Company, of which appellant was insurer. Judgment and verdict were for appellee. Appellant attacks the sufficiency of the evidence to support the jury's answers. In answer to the issues presented; the jury answered that appellee received an injury; that the injury was caused by heat stroke; and that at the time appellee received said heat stroke he was subjected to "a greater hazard from heat than applied to the general public." The evidence is sufficient to support these findings. Judgment affirmed. Travelers Insurance Co. v. Jones. Texas Ct. of Civil Appeals, Texarkana. Decided February 26, 1942. (CCH).

577 Typhoid Fever Contracted by Drinking Water Furnished by Employer. Accidental Injury Arising Out of Employment. Special Hazard.

The sole question is whether typhoid fever, contracted by Brown and St. Peter, employees of plaintiff in error, arose out of their employment, within the meaning of the Workmen's Compensation act. Brown and St. Peter were employed by plaintiff in error under a contract with the State of Illinois, on the grounds of the Manteno State Hospital. The only drinking water available was from a waterworks system maintained by the State. A typhoid epidemic occurred at the institution. Brown and St. Peter contracted the disease. Typhoid fever is accidental if the disease is contracted by accidental means. An injury arises out of the employment when there is a causal connection between the conditions under which the work is required to be performed and the resulting injury. If these employees, by reason of their employment were exposed to a greater risk of contracting typhoid fever than the risk to which the public in that vicinity was exposed, or if their employment accentuated the general hazard of contracting that disease, it was an injury arising out of the employment although unexpected and unusual. The employer elected to furnish water for drinking purposes to its employees. It must be said to have furnished the water in connection with its employees' work. By furnishing drinking water to its employees plaintiff in error put itself in the same position it would have occupied had it furnished the water from its own wells. When plaintiff in error elected to furnish water to its employees, it was incumbent on it to furnish water free from contamination. Under these facts the risk to its employees became a special hazard. Brown and St. Peter received accidental injuries which arose out of and in the course of the employment. The judgments of the circuit court confirming the awards are affirmed. Permanent Construction Co. v. Industrial Commission et al. Ill. Supreme Ct. Decided June 11, 1942. (CCH).

573 Occupational Disease Act. Disability From Tuberculosis Contracted as Incident to Occupational Disease. Disability Payments Made by Employer Under Agreement. Subsequent Death of Employee and Claim by Widow for Compensation. Sufficiency of Notice. Time of Filing Claim. Sufficiency of Evidence. Whether Claimant was Widow of Decedent.

This was an action before the Industrial Board for a claim for compensation under the Occupational Disease Act, wherein appellee claimed to be the wife and sole surviving dependent of Mose Slocum, deceased. From an award in favor of the appellee, the appellant has appealed. The finding of the Board was that Mose Slocum, the decedent of plaintiff, was an employee of defendant; that he was exposed to an occupational disease while in the employment of the defendant and that as the result he was totally disabled until the time of his death; that the disease was tuberculosis; that Mose Slocum and the defendant entered into a compensation agreement, which was approved by the Industrial Board; and that the agreement recited that the plaintiff's decedent was suffering from tuberculosis and the defendant agreed to pay compensation under the Occupational Disease Act.

Appellant contends that appellee failed to give notice to the appellant required by law. The agreement between appellant and the decedent conclusively shows that the appellant had notice of the disability of the said decedent. It was not necessary after the decedent's death for the appellee to give any further notice. It is next argued by appellant that the cause of action was not filed in time and that the statute of limitations had run against it. The claim herein was filed within a few months after the death of the decedent and was certainly filed in time under the statute. Appellant next argues that the evidence fails to sustain the finding of the Board that the decedent was last exposed to a disease while in the employ of appellant or that he was totally disabled as the result of such occupational disease. There is nothing in this contention for the reason that the appellant itself admitted by its agreement with him that he was entitled to compensation. Appellant contends that appellee has failed to show that she is the widow of the decedent. Appellee had been previously married to one Willy Thomas. She did obtain a divorce from Willy Thomas which divorce appears to have been conditional upon the payment of the costs which was not done until June 19, 1940. The conclusion of the Industrial Board that appellee is the legal widow of the decedent must be sustained. There was no evidence whatever introduced in the trial of the cause to show that Willy Thomas, her first husband, was alive at the time of the ceremonial marriages of the appellee to the decedent. On the contrary the evidence is that he disappeared and all trace of him was lost. The presumption is that the ceremonial marriage of the appellee to the decedent was valid. Award affirmed.

Continental Roll and Steel Foundry Co. v. Slocum. Ind. Appellate Ct. Decided May 8, 1942. (CCH).

579 Hernia Caused by Heavy Lifting. Operation for Hernia and Removal of Appendix at Same Time. Death from Peritonitis. Whether Death Caused by Hernia Repair or by Appendix Removal. Burden on Claimant to Show Proximate Cause of Death. Occupational Disease Statute.

Defendants appeal from an award granting plaintiff compensation of \$18 per week for 300 weeks, together with medical, hospital, and funeral expenses. Plaintiff's decedent told the personnel manager of the Clark Equipment Company that "he thought he had a rupture." Dr. Henderson operated on him for the hernia and during the operation removed his appendix. Infection developed, and plaintiff's decedent died of peritonitis. Plaintiff filed application under the occupational disease law for compensation. If the infection was caused by the hernia, plaintiff would be entitled to compensation, however, if the infection was caused by the appendix removal, plaintiff could not recover. It was incumbent upon her to prove that her decedent's hernia injury was the proximate cause of his

death. The department did not make a finding that the infection resulted from the hernia. It did make a finding that it could not determine the source of the infection. The medical testimony indicated that the source of the infection could not be determined. Plaintiff has failed to sustain the burden of proving that the hernia injury, through direct causal connection with the operation and infection, was the proximate cause of her decedent's death. Award vacated. Synga v. Clark Equipment Co. et al. Mich. Supreme Ct. Decided June 10, 1942. (CCH).

580 Silicosis of Foundry Worker. Old Tuberculosis Aggravated by Dust. Employment Lasting Only 61 Days. Whether Hazards of Employment were Proximate Cause of Disease.

Frank Lavell, a core maker, made a claim for compensation for disablement claimed to have been caused by silicosis. The Industrial Commission allowed compensation, but the circuit court set aside the award, finding that Lavell had failed to establish that he had sustained an occupational disease. December 27, 1939, Lavell commenced to work for Ferguson & Lange Foundries, Inc., as a core maker, and remained there until February 26, 1940, when he was laid off. Dr. Davis, who examined Lavell while he was working for Ferguson & Lange, reported him unacceptable for foundry work based on the fact that he had an old tuberculosis, but which did not show any evidence of activity. He considered it inadvisable to have a man with an old tuberculosis in a dusty industry and recommended that he be not kept in an employment where he was subject to the hazard of inhaling silica dust. Plaintiff in error is conclusively deemed to have been exposed to an occupational disease during the sixty-one days he was employed by defendant in error. Proof of exposure, alone, is not, however, sufficient to sustain an award of compensation. An award of compensation is without a legitimate basis where the evidence demonstrates it was impossible for the disease to have had its origin in the employment where the exposure occurred. There is no showing in the evidence from which it can be reasonably concluded that Lavell was afflicted with any disease fairly traceable to the hazards of his employment, or that such hazards are fairly traceable as the proximate cause of his condition. The affliction of which plaintiff in error complains, neither had its inception in nor is fairly traceable to the hazards of his employment during the sixty-one days' exposure as an employee of defendant in error. Judgment affirmed. Ferguson & Lange Foundries, Inc. et al. v. Industrial Commission et al. Ill. Supreme Ct. Decided June 11, 1942. (CCH).

Book Reviews

581 Optimum Hours of Work in War Production. Industrial Relations Section, Princeton University. Research Report Series: No. 65, (1942). Price 75¢.

In response to the obviously acute need for the clarification of the question of the maximum number of hours of work each day and week than an individual can perform efficiently, the report has been prepared. A 43-hour week of 8 hours per day for 6 days was found to be satisfactory as no ill effects to the workmen or production schedule occur. Schedules from 50 to 58 hours each week in many cases had adverse effects on efficiency, accidents and attendance. Schedules of 60 hours or more report a further increase in inefficiency but a 10 hour, 6 day week was considerably better than a 56 hour, 7 day week. If labor shortages exist a 60 hour week, two shifts per day for 6 days with a 10 hour shift is acceptable. Otherwise a 43 hour week, three shifts per day, six days

per week will provide maximum productivity. The booklet discusses special problems such as absenteeism and increase in accidents. Other important factors like the physical capacity of the workers and lunch and rest periods are also considered. A bibliography is appended.

532 Outline of an Industrial Hygiene Program. Div. of Industrial Hygiene, Nat. Inst. of Health, U. S. Public Health Service, Bethesda, Md.

The outline is based on careful studies and the practical experience of physicians, engineers and other industrial hygienists over a period of 25 years. The plan presented is practical and flexible and has been proven to contain the basis for an effective industrial hygiene program. The general considerations for improving employee health are: 1. Conditions in the working environment (the plant). 2. Conditions in the living environment (the home and community).

3. Personal conditions (the health of the individual and his ability to participate in the program). Four types of services are required in order to make the program operative: 1. Medical (physicians, dentists and nurses). 2. Engineering (industrial hygiene engineers and chemists). 3. Safety (safety engineers, first aid crews, shop safety committees). 4. Welfare (trained welfare workers, or personnel managers, union shop stewards, welfare committees, etc.).

The outline presents detailed recommendations for the application of the required services to the objective of complete health protection.

Industrial Health Hazards and Their Effects

533 An Analysis of Industrial Hygiene Activities in State and Local Health Departments, 1940-41. V.M. Trasko and J.J. Bloomfield. Pub. Health Repts., 57, 853 (June 5, 1942).

Three-fourths of the states are now engaged on a more or less limited scale in rendering practical health services to industry. The report represents a summary of industrial hygiene activities provided by 24 state and 4 city units which includes a labor population of approximately twenty-nine and one-half million workers, more than one-half of that for the whole country. A total of 215 persons (22 for the part-time periods), including physicians, engineers, sanitarians, a few nurses and clerks, carried on the activities which form the basis for the report. The divisions spent slightly more than one-half million dollars for their work representing three-fourths of the appropriations for all states with industrial hygiene units at that time. The field covered by industrial hygiene activities is so broad that cooperative working relationships are necessary and have been established between governmental and other health agencies. The impact of the war program has hugely multiplied the number of problems to be studied. One state reported that if no additional contracts were let and no other major problem arose, it would require 3 to 5 years to study the war industries alone. Six tables of data summarizing the activities of the reporting agencies are provided in the report. They deal with: Sources of Investigations, Industries investigated, workers affected by recommendations, extent of compliance with recommendations, industries in which cases of O.D. were investigated and the distribution of 1,536 cases of O.D. by exposure or agent and by cause. During the fiscal year of 1941 the reporting agencies were able to furnish services to 6,684 establishments involving 1,509,797 workers. The authors conclude that yearly reports summarizing governmental industrial hygiene activities are practical and desirable. They found from their present survey

need for increased programs to extend the services to a greater proportion of the working population. A need for more follow-up studies, for O.D. investigations and for absenteeism reporting were also evident.

- 564 Stone Dusts of High Dispersability. R.H. Hattersley and F.V. Tideswell. Colliery Guardian, 164, 407 (May 1, 1942).
The optimum dust sizes for use in rock dusting coal mines have been determined by experimental means. A general process for the manufacture of dispersable stone dusts is indicated to stimulate further experimentation on such lines. A combination of careful grinding and separation by air borne suspension will probably provide best results as it is the fineness and not the nature of the dust which controls dispersability. However, dusts vary considerably in the ease of removing ultra fines from them. The ultra fines are undesirable.
- 565 Coal Dust -- Self-Electrification and Explosion. S.C. Blacktin. Colliery Guardian, 164, 431 (May 8, 1942 and 164, 453 May 15, 1942).
Prior to 1884 explosions in coal mines were attributed to firedamp and dust explosions were unrecognized. The concept of self-electrification as a factor in dust explosions was confirmed by Blacktin from 1923 onwards. The factors involved are (a) the particle size and (b) the physical and physico-chemical functions of particle size which are of course related to the chemical nature of the coal. The danger of self-electrification varies directly as the total surface area. The ability to self generate electricity is provided by movement of the dust particles through some gas or gases. There are three major steps in the possible explosion of a dust cloud by self generated electric charges. They are: 1. The generation by the circulating dust of a sufficient electrical discharge. 2. The manifestation of the charge in some form capable of promoting a rapid chemical change either in the dust particles or in any combustible gas associated with them. 3. The ignition and explosion of the dust, directly or indirectly, by such electric manifestation. Blacktin has produced coal dust explosions in the laboratory by the above three steps using many different coals. Many times the necessary minimum energy value for dangerous sparking (0.002 joule) is generated. Blacktin claims that the lower explosive limit of methane is modified downward by coal dust to place it in the order of 2 per cent.
- 566 Zinc Dust Explosion. Th. Bauer. Reichsarbeitsblatt. (N.F.), 19, III, 371 (1939)
No definite cause could be found for the explosion in a zinc dust refinery which resulted in the death of one workman. The explosion could not be ascribed to iron particles or tobacco residues. Possible causes and protective measures are discussed. (Chem. Abstracts).
- 567 Pneumoconiosis Encountered in Bituminous Coal Miners. R.H. Jones. J.A.M.A. 119, 611 (June 20, 1942).
Anthracosilicosis should be suspected in all soft coal miners with cough and dyspnea, usually referred to as "miners' asthma." In a series of 86 cases of anthracosilicosis the stage of involvement has been recorded as stages 1, 2 and 3. Thirteen of the men were disabled. Disability is not necessarily in proportion to the number of years of employment in the mines but depends more on the occupation. Further group medical studies and engineering surveys should be made in the bituminous coal industry, with correlation of the findings.
- 568 Morbidity and Mortality Among Cement Workers. A Review. E.H. Schiotz. Nord. Hyg. Tid., 31, 89 (1940). (Chem. Abstracts).
Since the dust formed in the manufacture of cement contains considerable calcium oxide, which is corrosive, diseases of the upper respiratory tract, skin eczema and connective tissue inflammation are especially common among cement workers.

Because of the size of the dust particles (over 10 microns) there is no danger of silicosis. The mortality of cement workers is of the order of magnitude of that of the entire population. These statements are based on a series of statistics from Germany and apply only to ordinary cement. Acid fast cements and others which may contain quartz, asbestos and litharge are excepted.

- 589 Acid Fast Organisms in Sputum with Normal or Questionable Roentgenographic Findings. F.B. Trudeau and R.L. Yeager. J.A.M.A., 119, 706 (June 27, 1942). One hundred cases with reported positive sputum and negative or questionable roentgen ray findings were followed for one to thirty years after discharge. In this series 12 patients had relapses during this time and there have been 7 deaths, only one of them being reported as pulmonary tuberculosis. Although it is possible that in a small number of these cases the acid fast organisms found were non-pathological or due to laboratory error, the very favorable prognostic significance of negative or doubtful roentgen ray findings in cases of suspected pulmonary tuberculosis, even though the sputum is reported as positive, seems to be clearly demonstrated.
- 590 Tetryl and Lead Azide Poisoning. Queries and Minor Notes. J. A. M. A. 119, 603 (June 13, 1942). Tetryl is another name for "furan" or "furfuran," a relatively innocuous substance. It is not known that this material is used in fuse priming. Tetryl is picryl-methylnitramine or for short nitramine. In its manufacture several opportunities arise for poisoning, burns and dermatitis from various intermediate products. When in the dry, powder form, as well as when mixed, with diluting materials, such as acacia, it is a well known cutaneous irritant and discolorer of the skin. Tetryl produces the yellow characteristic of picric acid as well as an orange staining. As described by Schwartz, the lesions are erythematous and papular with vesication. Lesions are commoner at points of contact including the elbow fold and neck area. Patch tests with 0.5 tetryl in alcohol may yield positive results in 12 to 24 hours. Exposure to tetryl is fully capable of inducing systemic disease, as best described by Noro (reviewed J.A.M.A., 2109 December 13, 1941). Exposure both to lead azide and lead styphnate may lead to systemic disease as well as dermatitis. The dermatitis from the azide is rare but possibly more severe than that from the styphnate. The styphnate has the property of turning the skin and the hair yellow. The exposure should be brought to the prompt attention of whatever military agency is concerned with the enterprise and in addition to the state department of health.
- 591 Lead Poisoning from Dental Braces. Queries and Minor Notes. J.A.M.A., 119, 686 (June 20, 1942). Lead poisoning from dental braces has not been reported as far as is known, and braces would be a most unlikely source of the disease. It would be particularly unwise to ascribe any absorption to such braces without knowing whether they contained a high proportion of lead. The concentration of lead in the urine which may imply pathological changes in some cases is considered to be above 0.15 mg. of lead per liter of urine.
- 592 The Velocity of Intestinal Absorption of Lead. C. Poggato and E. Antonioli. Med. lavoro., 31, 14 (1940). (Chem. Abstracts). The absorption of lead from the digestive tract is especially rapid during the first 20 minutes. It then falls rapidly and only after about 1 hour does it again attain the high initial values. Lead determinations in the circulating blood and in the blood of the right ventricle indicate that considerable amounts are retained in the liver.

- 593 Alteration of the Leucocytes in Lead Poisoning. F. Nicoletti. Arch. Antrop. Crimin., 60, 897 (1940). (Chem. Abstracts).
Eleven guinea pigs of 250-350 g. body weight received perorally a suspension of lead acetate in distilled water for 3 months. The first month they were given 0.5 cc. of a 10% suspension every other day, the second month 0.5 cc. of a 15% suspension every other day and the third month 1.0 cc. of a 20% suspension daily. In chronic lead poisoning there was a distinct increase in the number of leucocytes which gave the peroxidase reaction (method of Fouin and Fiessinger) and in the azurophile granules, the increase in the latter beginning first. The increase was most distinct in the third experimental month. These alterations are considered to be an expression of a defense mechanism of the organism. In the guinea pigs with the most severe symptoms of poisoning, the number of azurophile elements and of the peroxidase-positive leucocytes diminished markedly up to complete disappearance. This is considered to have value as a prognostic sign, as an early symptom of lead poisoning.
- 594 Solubility of Two Lead Salts in Dilute Solutions with Special Reference to the Lead Hazard in Drinking Water. J. Am. Water Works Assoc., 34, 85-93 (1942).
In order to determine the extent to which the protective coatings in lead pipes were dissolved or eroded by the common ingredients of water, investigations were made on the solvent action of dilute solutions on basic lead carbonate and lead sulphate. The solvent action of sodium chloride (100 p.p.m.), ammonium nitrate (100 p.p.m.), calcium hydroxide (1-25 p.p.m.), aluminum sulphate (1-5 p.p.m.), and ferrous sulphate (1-5 p.p.m.), equalled that of distilled water. Concentrations of 1000 p.p.m. of calcium hydroxide (as calcium carbonate) increased the solubility considerably. Higher concentrations of ferrous sulphate and aluminum sulphate increased the solvent action on the basic lead carbonate but decreased on the lead sulphate. The solubility of the basic carbonate was unaffected by chlorine (1-100 p.p.m.) but the sulphate was less soluble. Sodium meta phosphate and sodium pyro phosphate decreased the solvent action at 1-10 p.p.m., but increased the solubility at 1000 p.p.m. This latter fact shows that there is no danger of solvent action by using phosphates in water treatment.
- 595 Clinical and Subclinical Lead Intoxication. A.E. Abraham and J.A. Baird. War Medicine, 2, 450 (May, 1942).
In a group of men exposed to the fumes of tetraethyl lead for about four weeks, 5 to 11 excreted significant amounts of lead. Clinical intoxication developed in 2 men and the other 3, although symptom free, definitely excreted amounts of lead signifying subclinical intoxication. It is especially imperative at the present time that medical officers assume protection of the men under their supervision.
- 596 Poisoning and Immunity Protection. I. The Influence of Lead Poisoning on Anthrax Immunity. F. Neri and A. Miceli. Giorn. Batteriol. immunol., 25, 186 (1939). (Chem. Abstracts).
The administration of lead exerted no essential influence on the natural resistance of the rabbit to the anthrax bacilli. In addition to the reticulo-endothelial system, which is damaged by the intake of lead, the remaining tissues may also play a role in the natural resistance.
- 597 Lead Poisoning in Children -- Report of an Epidemic Due to the Burning of Storage Battery Cases as Fuel. A.J. Alexander and R.E. Downing. New Intern. Clinics, N.S., 4, 2, 229-42 (1941). (Chem. Abstracts).
X-ray determination of the deposition of lead in the bones in conjunction with calcium deposition was a valuable diagnostic procedure.

- 593 The Physiologic Action of Metallic Magnesium. S.F. Meek, J.J. Prendergast, G.C. Enfield and C.P. McCord. J. Ind. Hyg. & Tox., 24, 142 (June, 1942).

A continuation of previously reported animal experiments confirms the facility with which macroscopic gas tumors may be induced by the implantation of particulate magnesium and high magnesium alloys. Aluminum and low magnesium alloys do not possess this property when similarly introduced into animals. Larger pieces of magnesium introduced as spicules, turnings, or slugs beneath the skin or deeply into the muscles produce vacuoles but no gross tumors -- thus reflecting the increased surface area of magnesium in minute particle form. The severe necrosis with occasional gangrene is limited to the locality of the gas tumors formed. This necrosis is not caused by the heat incident to the chemical reaction. At least no high temperatures were recorded on implanted thermometers. The introduction of gases (hydrogen, oxygen, nitrogen) in the absence of magnesium creates no equivalent necrosis. Superficial skin-abrading with light metal powders leads to proteolysis in the instance of magnesium and high magnesium alloys. Lesions are not grossly more severe, and healing is not profoundly delayed. From tissue implantation, an occasional tubercle-like structure appears, in keeping with the emphasized feature of some European observations. Equally, large-sized tumors are not anticipated in clinical experience from injuries from magnesium spicules and shavings. This is due to the much larger surface area from the masses of fine particulate metal introduced experimentally. Apparently as little as 10 mg. of powdered magnesium is capable of creating macroscopic gas tumor masses.

- 599 Magnesiogenous Pneumogranuloma. R. Z. Schulz and C.W. Walter. J. Ind. Hyg. & Tox., 24, 148 (June, 1942).

The reaction of magnesium with water or body fluids produces hydrogen and magnesium hydroxide. The gas tends to remain localized and accumulate in discrete locules which are not crepitant as long as metallic magnesium is present. The alkali causes necrosis of tissue which stimulates fibroblastic proliferation. When such injury and repair continues over a long period of time, a pneumogranuloma develops. Secondary degeneration of organs and tissues occurs due to pressure of the adjacent pneumogranuloma. After the magnesium metal has undergone dissolution, the gas is gradually absorbed, leaving dense scar tissue. This reaction of tissues to metallic magnesium should not be confused with gas gangrene caused by micro-organisms. Magnesiogenous pneumogranuloma is a descriptive term which includes the causative agent, as well as the resulting type of inflammatory reaction. Bizarre symptoms following injury by fragments of magnesium should prompt early exploration of the wound.

- 600 Light Metal Injuries. F. Marquardt. Med. Welt., 1517 (1939). (Chem. Abstracts).

No severe inflammatory reaction or symptoms of hypersensitivity were noted after rubbing pure light metal filings or a filing petrolatum mixture into the shaved intact or eroded skin of 21 guinea pigs, even if the light metal slivers or a Dural-Ringer suspension had previously or subsequently been introduced into the subcutaneous connective tissue. Rubbing Dural filings on the skin of a man for 14 days or introducing a sliver into the area of the previously treated skin likewise produced no signs of sensitization. Experiments on subcutaneous implantation of Elektron and Dural (slivers, filings, light metal Ringer solution) in 14 guinea pigs confirmed earlier reports that both metals can form purulent infections. While Dural reactions usually disappear after 2-4 days, frequent abscesses or at least inflammatory swellings of rather long duration are produced by Elektron. It is doubtful whether light metals can cause severe sensitization in the form of eczema.

- 601 Metal-Fumes Fever. F.W.A. Fosbery. J. Roy. Nav. Med. Service, 25, 282 (1959). (Chem. Abstracts).

The inhalation of metal fumes of zinc, lead, mercury, manganese, cadmium, arsenic, antimony, copper, magnesium and others can produce an acute attack which resembles grippé or pneumonia. This fever has nothing to do with a specific acute or chronic poisoning, but is considered to be due to shock caused by the products of protein destruction. No fatal cases have been described. Recovery is quite rapid.

- 602 Effect of Mercury Vapor on Man. Queries and Minor Notes. J.A.M.A., 119, 601 (June 13, 1942).

A person exposed to 500 micrograms of mercury per liter of air would take into his body approximately 5 mgs. during a working day on the basis of 10 cubic meters of air inhaled. Such an intake represents 5 times that believed to be the maximum tolerable amount. Some investigators believe that as little as 60 micrograms per cubic meter of air may lead to poisoning. The absolute upper limit should be 100 micrograms per cubic meter of air. The spilling of mercury and other opportunities for the evaporation of the metal should be avoided. Scrupulous oral and cutaneous hygiene should be practiced and the use of alcohol by exposed persons is inadvisable. Constipation may aggravate poisoning and exposure to mercury should be terminated at the first sign of absorption. For chronic poisoning no known drug therapy of known value is available, although the use of sodium thiosulphate in doses of 1 gram administered intravenously every second day has been advocated. In cases of chronic poisoning the manifestations resemble parkinsonism and the drugs used for that disease may be of some value. The use of amphetamine sulphate in a dose of 1/2 grain (0.03 gram) twice daily has been suggested. Mouth washes are usually desirable and among others may be mentioned potassium permanganate (1:3000), tincture of myrrh 2%, thymol and potassium chlorate. Physiologically the patient may benefit from some of the following measures; removal from all exciting environmental influences; living in the open air with sunshine if possible; frequent periods of exercise or work; the promotion of perspiration; a high intake of water or milk; the promotion of high urinary output and frequent stools; frequent hot baths; massage of parts showing tremors; and abundant use of foods with a known content of vitamins, particularly egg and milk.

- 603 Symptomatology of Industrial Mercury Poisoning. A. Leischner. Med. Welt., 716 (1940). (Chem. Abstracts).

Mercury poisoning has recently increased in Germany from the Slovakian mercury mines. A brief survey of the literature and a detailed description of two cases of mercurialism are given. One of the men, who had worked with amalgams, had general ~~neurasthenic~~ difficulties. Because of a simultaneously existing anemia and toxic blood changes as well as high urinary mercury excretion (74 micrograms per liter), the disturbances were charged to mercurialism. High mercury values in the urine are favorable prognostically as low values may indicate a greater mercury fixation in the nervous system. Only the mercury content of the cerebrospinal fluid is related to the severity of the damage in the central nervous system.

- 604 Pathological Anatomy in Chronic Poisoning with Mercury Vapor. G. Menesini. Laecchia II S., 3, 538 (1939). (Chem. Abstracts).

Almost all the organs, but especially the central nervous system, were affected in rabbits and guinea pigs which had inhaled mercury vapors at ordinary temperatures or from 34 to 36°C. A new conception of mercury poisoning is given. A comprehensive survey of the literature and 36 photomicrographs are included.

- Nickel Carbonyl Pneumonias. E. Krafft. Ber. 8. intern. Kongr. Unfallmed. u. Berufskrankh., 2, 1054, (1939). (Chem. Abstracts).
The pneumonia which occurs in nickel carbonyl poisoning does not resemble ordinary pneumococcal pneumonia. It is believed that upon inhalation nickel, a known allergen, reaches the large surface of the lung and there produces a reaction similar to that caused on the skin.
- 606 Manganese Pneumonia as an Occupational Disease. H.E. Büttner. Arztl. Sachverst. Ber. 48, 257 (1939). (Chem. Abstracts).
A detailed critical discussion of the problem of manganese pneumonia is given. Apparently, manganese increases the sensitivity to pneumococci. Unfavorable environmental factors also play a role as contributing factors but a regulatory action should be ascribed to the manganese. Manganese pneumonia should be recognized as an occupational disease.
- 607 Manganese Poisoning. E.W. Baeder. Arch. med. Soc. et Hyg., 2, 776 (1939). (Chem. Abstracts).
In addition to 5 cases of manganism observed in Berlin, 6 cases from manganese miners are presented. Three brain sections of persons with manganese poisoning are shown and these like the lung sections, reveal deposition of manganese in depot form. Atropine treatment gave favorable results.
- 608 Mechanism of the Antidotal Action of Methemoglobin in Hydrogen Sulphide Poisoning. I.A. Oivin and A.I. Gunina. Farmakol. i. Toksikol., 3, 69-72 (1940). (Chem. Abstracts).
Dogs given 3 times the lethal dose of sodium sulphide do not die if also given 0.02 gram of sodium nitrite per kg. of body weight intravenously. A prompt rise in methemoglobin content follows the sodium nitrite injection. The antidotal action of methemoglobin is exerted not as an acceptor (no sulfmethemoglobin could be detected spectrographically) but as an oxidizing agent.
- 609 The Dangers of Nitrous Gases. O. Muntsch. Med. Welt., 714 (1940). (Chem. Abstracts).
A brief comprehensive statement of known facts on the occurrence, mechanism and clinical picture of poisoning by nitrous gases is given. The liver damage observed with a group of injurious substances (aromatic nitro and amino compounds) is also included.
- 610 Acute Pulmonary Edema as a Result of Occupational Injury. L. Riedl. Cas Lek Cesk. 357, (1940). (Chem. Abstracts).
Occupational injuries from substances, such as nitrous gases, which can cause pulmonary edema are discussed.
- 611 Dangers of Welding in the Interior of Boilers and Tanks. C. Hase. Anz. Maschinew., 61, 58 (1939). (Chem. Abstracts).
The serious accidents during welding in the interior of boilers and tanks are for the most part the result of ignorance. Upon reaction of crude acetylene with a cleaning agent (primarily calcium hypochlorite) very poisonous gases are formed. Possibilities of poisoning by various gases are discussed with accident statistics showing that carbon monoxide and oxides of nitrogen being the main cause of fatalities. The use of fresh air appliances is recommended as furnishing the best protection against the poisonous gases.
- 612 Is the Increase in Copper Content of the Liver of Value as an Indication of Lead Poisoning? K.W. Jøtten, C. Vedmarwyck and H. Replon. Arch. Hyg. Bakt., 44, 1-32 (1940). (Chem. Abstracts).
The normal value for copper in the liver of cattle is approximately 80 mg. per 100 g. of liver. Values greater than this are considered pathological.

- 613 Attack of the Skin by Hydrofluoric Acid. A. Jordi. *Gesundheit u. Wohlfahrt.*, 20, 233-43 (1940). *Chimie & Industrie*, 45, 563 (1941). (Chem. Abstracts).
The burns appear only after an hour or more, then the skin becomes white and after several hours gangrenous in appearance. The necrosis can reach the bone; in x-rays the latter appears strongly decalcified. Recovery is slow. Rubber gloves are adequate protection in handling small quantities of hydrofluoric acid.
- 614 Fatal Carbon Dioxide Poisoning in a Grain Bin. Ronicke. *Zentr. Gewerbehyg. Unfallverhüt.*, 27, 89 (1940). (Chem. Abstracts).
The air of a concrete grain bin contained 4 volume per cent of carbon dioxide the day after the death of a workman who had entered the bin. Methods for the prevention of poisoning and suffocation in grain bins are discussed. In order to prevent dust explosions and fires, a safety lamp must be used in testing the atmosphere of bins for oxygen.
- 615 Some Recent Observations on Phosphorus Toxicology. R.B.L. Fleming, J.W. Miller and V.R. Swayne, Jr. *J. Ind. Hyg. & Tox.*, 24, 154 (June, 1942).
Very definite bone pathology was observed in animals receiving phosphorus by subcutaneous injections. It was more marked in the rats than in the guinea pigs, and was absent in the control animals of both species. Some of the control guinea pigs were observed up to 1,160 days and they failed to show bone pathology. In the two species of animals used, with the quantities of elemental phosphorus regularly administered up to 720 days, significant changes were produced in the bones without causing liver or kidney damage. As a result of the investigations the authors conclude that, by subcutaneous injection of elemental white phosphorus there is a narrow limit of physiological tolerance of about 0.8 mg. per Kilo of body weight per day; above which rapidly lethal effects occur. In dosages similarly administered at the rate of 0.05 mg. of phosphorus per kilo per day, significant bone changes are observed after the administration of 50 mg. of phosphorus. Between these limits no significant damage to the organs was observed. Those animals fed equal amounts of phosphorus reacted to a less extent to bone changes but showed greater retardation of weight.
- 616 Cobalt Poisoning. Experimental, Anatomic-Pathological Contribution. C. Seghini. *Clin. med. ital. (N.S.)*, 71, 355 (1940). (Chem. Abstracts).
Rabbits received subcutaneous injections of 1% cobalt chloride in doses of 1 cc. each for a few days up to 1 month. On the 30th day they were given a large toxic dose (10 cc. 10% solution) subcutaneously. A few minutes later tachypnea and tachycardia appeared. Death occurred 10-12 hours after the last injection. A detailed description of the section findings and the changes noted microscopically is given. Animals died 10 hours after the peroral administration of 1.5 gs. of cobalt chloride. The toxic picture was the same as in the subcutaneous administrations. A detailed review of the literature is given.
- 617 Illness Traced to Cadmium Food Containers. H.O. Calvery. *Metal Finishing*, 40, 134-5 (1942). (Chem. Abstracts).
A brief review is given. Symptoms are violent acute gastritis with nausea, cramps, vomiting, diarrhea and weakness. The containers at fault most commonly have been cadmium plated ice cube containers. Because of its high toxicity cadmium should not be used in food containers of any kind.
- 618 Recent Investigations on the Problem of Radium Poisoning. A. Krebs. *Forschungen u. Fortsch.*, 15, 93 (1940). (Chem. Abstracts).
The following methods can reveal the early absorption of radioactive substances and indicate when a change in occupation is necessary: (1) Estimation of the emanation content of the expired air; (2) Detection of radiations from the body, and (3) Determination of the radium content of the blood.

- 619 Morphological and Functional Injury of the Urinary Passages by Chromium. F. Gallizia. *Lavoro umano.*, 1, 33 (1940). (Chem. Abstracts).
Five rabbits of about 2 kg. body weight were poisoned by subcutaneous injections of 2-4 cc. of 0.5% potassium dichromate every 3-5 days. Four animals died in 2-46 days after total doses of 40-235 mg. of $K_2Cr_2O_7$. One animal survived the administration of 235 mg. in 71 days. The course of the body weight; the amount, the urea concentration and the specific gravity of the urine; the behavior, in concentrated and dilute tests; and the histological findings are described in detail.
- 620 The Influence of Radioactive Substances on the Nervous System. L. Van derHorst. *Deut. Z. Nervenheilk.*, 151, 83 (1940). (Chem. Abstracts).
Radium D is found in the breakdown of radioactive substances in the human body. The blood damage was studied in rats and cats after the administration of radioactive water for long periods. Microscopically, damage of the nerve cells was found which resembled that in plumbism. Injuries of the central and peripheral nervous system through radioactivity or by lead are, however, not to be expected from radioactive water of normal strength. The amount of lead was not large enough to cause an injury to the brain.
- 621 Occupational Injury of the Upper Air Passages in the Preparation of Substances for Refining Steel. H. Symanski. *Zentr. Gewerbehyg. Unfallverhüt.*, 27, 154 (1940). (Chem. Abstracts).
The technical processes in the preparation of vanadium oxide (V_2O_5) are described. Serial studies in a plant revealed smarting of the eyes, coryza, pharyngeal dryness, cough, pulmonary disturbances and dyspnea. Other changes, as blood and kidney damage, which have been described in the literature, were not found. Vanadic acid is a pronounced irritant of the mucous membranes. Protective measures are discussed.
- 622 Benzene Poisoning in Immersion Lacquering Plants. G. Bauer. *Arch. Hyg.*, 124, 147 (1940). (Chem. Abstracts).
A severe case of poisoning from benzene used as solvent in immersion lacquering of wooden articles is reported. There was extensive destruction of the red and white blood corpuscles and the hemopoietic apparatus. Recovery was slow. A detailed review of the literature on benzene poisoning is given.
- 623 Occupational Benzene Poisoning and Legislation. P. Guye. *Helv. med. Acta.*, 6, 647 (1939). (Chem. Abstracts).
Benzene poisoning has been observed in the Swiss watch industry. The measures for the prevention of benzene poisoning in various countries are discussed. It is recommended that all products which contain benzenes should be so labeled and that all workers exposed to benzene should be given periodical physical examinations.
- 624 Occupational Benzene Poisoning. Vesco. *Zentr. Gewerbehyg. Unfallverhüt.*, 27, 52 (1940). (Chem. Abstracts).
A compact literature survey of occupational benzene poisoning.
- 625 Fatal Carbon Tetrachloride Poisoning. T. Romeling. *Ugeskr. Laeg.*, 337 (1940). (Chem. Abstracts).
A 43 year old man worked for 2-1/2 hours with CCl_4 in a large, well ventilated machine room. Symptoms of poisoning involving the digestive tract, liver and kidneys developed 4 hours later. Subsequently pneumonia developed which terminated in death on the 9th day. The microscopic study revealed central acinus necrosis and degeneration of the peripheral portions of the acini in the liver, and edema and nephrotic changes in the kidneys.

- 626 Hormonal Reactions in Poisoning with Carbon Tetrachloride, a Cirrhogenous Poison, Which Can Be Detected by the Stathmokinetic Method of Dustin. C. Cavallero. Arch. intern. med. exptl., 14, 15 (1939). (Chem. Abstracts).
The endocrine glands of animals poisoned with CCl_4 were studied by the Dustin stathmokinetic method which reveals irritation in the endocrine system through alteration in the sensitivity to colchicine (appearance of mitoses). This study revealed injury to the parathyroid glands, adrenal glands, hypophysis and the islands of Langerhans. The rest of the endocrine system was either unaffected or the disturbances were not revealed by the method used.
- 627 Experimental Methyl Chloride Poisoning. I. Introduction and Results of the Histological Investigation. G. Montemartini. Ann. med. nav. e. Colon., 43, 526 (1940). (Chem. Abstracts).
In acute poisoning from pure methyl chloride in dogs, the methyl chloride exerted a toxic action on the tissue elements of the lungs, which consisted principally in an increase in permeability of the walls of the pulmonary vessels. Leucocyte infiltrations occurred peribronchially and perivascularly. The capillaries were dilated, congested and in part surrounded by small extravasations of blood. The liver showed congestion of the central nerves and turbidity of the cell protoplasm. The kidneys exhibited signs of congestion and degenerative alterations of the tubular epithelium as well as swelling of the glomeruli with diminution of the interstice between glomerulus and Bowman's capsule. These changes explain satisfactorily the anuria or oliguria regularly observed in the poisoned animals.
- 628 Methyl Chloride Poisoning. A.M. Jones. Quart. J. Med., 11, 29-43 (1942). (Chem. Abstracts).
A severe case of methyl chloride poisoning in a refrigerator repairman is fully described, and 6 other case histories are given. The mere detection of formic acid in the urine is not diagnostic of methyl chloride poisoning.
- 629 The Role of Impurities in Trichlorethylene Poisoning. D. Matruchot. Ber. 8. intern. Kongr. Unfallmed. u. Berufskrankh., 2, 910 (1939). (Chem. Abstracts).
Old trichlorethylene is more poisonous than the freshly prepared product. Of the numerous impurities in the aged substance, asymmetrical dichlorethylene possesses a special toxicity as shown by guinea pigs inhalation experiments. It is concluded that the dichlorohydrocarbon exerts an effect not only from its own toxicity but also by catalyzing the decomposition of trichlorethylene.
- 630 Injuries Through Solvents and Their Control. O. Klimmer. Therap. Gegenwart., 80, 526 (1939). (Chem. Abstracts).
A review of the state of present experience with the definition and classification of the solvents, followed by an explanation of their physiological action is given. Directions for treatment and prophylaxis are also included.
- 631 Poisoning by Solvents. H. Symanski. Gesundh. f"uhr. 4, 143 (1940). (Chem. Absts.)
The fundamental properties, principal groups and specific and non-specific actions of the solvents are discussed. The most important solvents are arranged chemically. Dermatitis from solvents is described. The effect of ammonium hydride and ammonium acetate, acetone and methanol, and other pairs are also considered. The dangers of the use of solvents even in small plants, must be considered where the principal symptoms are suggestive of gastritis, beginning pulmonary tuberculosis and neurasthenia. The toxic action of benzene and carbon disulphide are described in detail. Compulsory reporting of O.D. cases is regarded as of paramount importance.

- 632 Peripheral Occupational Neuritis. J. Teisinger. Cas. lek Cesk. 301 (1939). (Chem. Abstracts).
Neuritis was found in 6 lead glass grinders and 1 brass grinder. No signs of lead poisoning were found in the clinical investigation. The action of lead was detected only after a study of the basophilia and blood lead content. In two cases an increased blood lead (0.129 and 0.233 mg.%) was found only after mobilization with potassium iodide. In 4 of the cases the blood leads were normal and no mobilization could be produced. The form of the disease is explained by the peculiar method of working. The workmen support themselves on a board with the elbow so that the N. ulnaris is subject to constant pressure. In the wet grinding of lead glass, a mist containing lead, is formed which is inhaled. Prophylactic measures are discussed.
- 633 Peripheral Neuritis in Industrial Poisoning and a Contribution to the Question of the Exposition. F. Lüthy. Z. Unfallmed. Berufskrankh. (Bern.) 34, 34 (1940). (Chem. Abstracts).
Industrial polyneuritis is rare but is most frequent after plumbism and to a lesser degree after carbon monoxide poisoning. Of 33 cases from lead poisoning, 31 were of industrial origin. An encephalopathy was noted 4 times and a neuritis 6 times. Peripheral injuries are rare in mercury poisoning. Only a few of the 33 cases of carbon monoxide poisoning showed peripheral nerve injuries. Only sporadic neurological disturbances were found after poisoning with carbon tetrachloride, trichlorethylene, dimethyl sulphate, a mixture of benzene, toluene and xylene, dichlorobenzene, benzene, benzine, trichlorethane and tritolylphosphate. Amaurosis, which lasted only one day, appeared after dimethyl sulphate poisoning. Later continued exposure caused a blurring of the vision, unconsciousness and confusion. A syndrome resembling schizophrenia appeared after exposure to a mixture of benzene and its homologues. A motor and sensory neuritis of the right arm appeared after tritolyl phosphate poisoning.
- 634 Respirator Dermatitis. J. Petro. British Med. J., No. 4246 (May 23, 1942).
Respirator dermatitis was observed in 16 patients and was traced to the accelerators and antioxidants in the rubber parts of the mask. The dermatitis is classified as a sensitization dermatitis which occurs in pre-disposed individuals. The etiology, symptoms, signs, complications and treatment of the cases are described. Photographs of the normal and pathological appearance of the patients are included.
- 635 Contact Dermatitis from Exposure to Dyes -- Case Report. E. Schwartz. J. of Allergy. 13, 417 (May, 1942).
A case of contact dermatitis to scarlet red and to dyed fabrics is presented. The patient having osteomyelitis and cellulitis was treated with scarlet red ointment. A dermatitis developed and patch tests with pieces of his clothing including sweaters, overcoats and pants were positive.
- 636 The Action of Organic Liquids on the Skin. H.J. Oettel. Ber. 8. intern. Kongr. Unfallmed. Berufskrankh., 2, 1228 (1939). (Chem. Abstracts).
The action of simple organic liquids on the intact skin was studied by the method of reflection measurement, with a pulfrich step-photometer. The pure saturated hydrocarbons produced an extraordinarily severe irritation. The poisons which are absorbed most poorly react most intensely with the human skin. This is probably because they remain longest on the skin and, therefore, react at the highest concentration. These organic liquids with non-specific action on the skin represent concentration poisons.

- 637 Skin Burn and Rheumatoid Arthritis. Queries and Minor Notes. J.A.M.A., 119, 100 (June 20, 1942).

A white man aged 61 was burned on his face, the upper part of the chest and both hands and arms with strong sodium hydroxide solution. Three weeks after the accident he began to suffer from generalized rheumatoid arthritis and the question of the relationship to the sodium hydroxide burn is raised. Among the precipitating causes of rheumatoid arthritis are acute infections of the respiratory tract, acute chilling, shock and worry. By producing shock and worry the caustic burns might conceivably have precipitated the disease in a person who was "about ready" to have it, but if so the occurrence is indeed rare and unusual. As far as is known, rheumatoid arthritis is not a recognized complication of any other type of cutaneous burn, even when the burn is extensive.

- 638 Occupational Dermatoses. E. Bizzozero. Rass. med. ind., 10, 655 (1939). (Chem. Abstracts).

A discussion of the pathological, anatomical forms of occupational skin diseases is followed by a brief statement on the individual causal factors, as the mechanical, thermal, chemical and infectious influences on the skin. The importance of the disposition is shown. The prophylaxis and treatment of occupational diseases is briefly described.

- 639 Occupational Dermatoses. G. Caso. Rinasc. med., 17, 523 (1940). (Chem. Absts.)
A brief discussion of the subject of occupational dermatoses.

- 640 Dynamics of Antidote Effects Exerted by Sodium Bicarbonate. A.A. Gavriljuk. Farmakol. i. Toksikol., 3, 57-63 (1940). (Chem. Abstracts).

Intravenously injected sodium bicarbonate (6 cc. of 8% solution per kg. of body weight) in rabbits increases resistance to arsenic, potassium cyanide, quinine and strychnine. Response of the vegetative nervous system to adrenaline is also altered. Similar effects with the use of sodium bicarbonate were also observed in dogs.

- 641 Medical Progress. Industrial Hygiene. S.S. Pinto and Manfred Bowditch. New Eng. J. Med., 225, 949-52 (1941). (Chem. Abstracts).

A review of recent studies on poisoning by benzene, carbon disulphide, T.N.T., tetryl, lead, mercury, and radium with methods of treatment and precautionary measures. 32 references.

- 642 Chronic Toxicity of Derris. A.M. Ambrose, F. DeEds and J.B. McNaught. Ind. & Eng. Chem. Ind. Ed., 34, 684 (June 2, 1942).

In the search for effective substitutes for lead arsenate and fluorine compounds as insecticides, the investigation of potential health hazards traceable to spray residues is an essential and indispensable part of the program. Existing data on the acute and chronic toxicity of derris are summarized. The study of the chronic toxicity of derris is extended to include a different strain of albino rats maintained on a different basic diet from that formerly used. The quantity of total extractives and the qualitative and quantitative composition of the extractives are more important factors in the chronic toxicity of derris samples than is the rotenone content. Evidence of liver injury has been found in albino rats receiving daily in the diet a concentration of derris or cubé corresponding to 75 parts per million parts of diet. Variations in composition of derris and cubé necessitate caution in making sweeping generalizations regarding the toxic properties of derris and cubé on the basis of studies on a few samples.

- 643 Explosion of Carbon Monoxide in Compressed Air Ranges. W.B. Brown. Colliery Guardian. 164, 383-5 (April 24, 1942).
The article gives a review of explosions which have occurred in and adjacent to air compressors and air lines in mining operations. Injuries to workmen from burns, the force of explosions, and gases formed by explosions are described. Precautions for the prevention of carbon monoxide poisoning are given.
- 644 Influence of Arsenic on Selenium Poisoning in Hogs. A.L. Moxon. Proc. S. Dakota Acad. Sci., 21, 34-6 (1941). (Chem. Abstracts).
Disodium hydrogen arsenate when fed at the rate of 5 p.p.m. in the drinking water of pigs will counteract the toxicity of selenium when fed at a rate of 9 p.p.m. in the ration. Results show that arsenic prevents at least a part of the selenium from entering the muscle tissues of the hog. The liver of an animal fed both selenium and arsenic contained more selenium than the liver of one fed only selenium.
- 645 Pneumoconiosis from Earth Colors. J. Hagen. Arch. Gewerbepath. Gewerbehyg., 9, 621 (1939). (Chem. Abstracts).
Although reported analyses of the dust of earth colors show a relatively low content of silicic acid, yet under hygienically unfavorable working conditions lung changes can be produced in those working with earth colors. Cases of workmen in such plants are reported, in which roentgenological studies revealed 2nd and 3rd degree silicosis. Dust control in the various steps of the work and regular roentgenological examination of the workmen should be carried out.
- 646 Enamel Pneumoconiosis. E. Gaubatz. Fortschr. Gebiete Röntgenstrahlen., 61, 233 (1940). (Chem. Abstracts).
Pneumoconiosis was studied in enamel workers. The principal findings were that the silicates were deposited in the paratracheal lymph nodes until they are blocked. Then the silicates are stored in the lungs themselves.
- 647 Occupational Poisoning of Workers on Rotation Presses. G. Castrovilli. Med. lavoro., 30, 225 (1939). (Chem. Abstracts).
The work on rotation presses is described and the toxic substances encountered are reported. Two cases of benzene poisoning, used in printing inks are given. The necessary precautions for the prevention of poisoning are discussed.
- 648 Some Case Reports of Occupational Diseases in Sweden. G. Rundberg. Zentr. Gewerbehyg. Unfallverhüt., 27, 66-7 (1940). (Chem. Abstracts).
A report on poisoning from arsine, carbon monoxide, chromium and various organic substances including carbon tetrachloride and petroleum distillates is given.
- 649 The Occurrence of Bronchial Asthma in Electrochemical Factories. S.N. Meyer. Nord. Hyg. Tid., 20, 329 (English Summary 345). (1939). (Norwegian). (Chem. Abstracts).
Bronchial asthma was found in 8.8% of 387 workers in 4 aluminum plants. The asthma was accompanied by eosinophilia, but there were no other pathological findings. It appeared chiefly in those who had worked at the cells for rather long periods (more than 10 years). Asthmatic attacks appeared in one workman upon inhalation of cryolite fumes. No asthma was found, however, in 94 workers in 2 ferrosilicon plants. In order to determine whether the asthma was caused by tar gases from the electrodes, 76 workers with tar in 2 electrode factories and one tar distillation plant were examined; no evidence of asthma was found. Tar fumes vary with temperature; the temperature was much higher, however, in the aluminum cells than in the other plants.

- 650 Influence of the Neural Component in the Mechanism of Chronic Occupational Poisoning. IV. Effects of Benzene and Carbon Tetrachloride on the Organism When Given Simultaneously. P. Mytnik. Farmakol. i. Toksikol., 3, 39-46 (1940). (Chem. Abstracts).
In rabbits given both benzene and carbon tetrachloride the response to both poisons is altered. The effect resembles the action of either poison when given after applying a prior stimulus, which fact supports the idea that the action of these poisons is indirect. Hence their combined action may be regarded as coming from two stimuli. Susceptibility to benzene poisoning is considerably diminished by carbon tetrachloride, which suggests the possibility of prophylaxis against chronic benzene poisoning.
- 651 The Influence of the Neural Component in the Mechanism of Chronic Occupational Poisoning. V. Influence of Administration Sequence on the Effects of Two Poisons. P. Mytnik. Farmakol. i. Toksikol., 3, 47-52 (1940). (Chem. Abstracts).
Transition from benzene poisoning to carbon tetrachloride poisoning increases the toxic effect in rabbits, death coming earlier than in benzene poisoning alone. The reverse transition decreases the toxic effect of benzene; rabbits survive longer in spite of receiving larger benzene injections. The morphological changes in the blood in passing from carbon tetrachloride poisoning to benzene poisoning resemble those occurring in chronic carbon tetrachloride poisoning, presumably because of the trace reaction of carbon tetrachloride poisoning. In changing from one solvent to another under industrial conditions, allowance should be made for the trace effect as part of the occupational hazard.
- 652 Tar Cancer as an Occupational Disease. J. Firket and A. Malter. Arch. med. soc. et hyg., 2, 797 (1939). (Chem. Abstracts).
In 126 workers handling tar in the province of Liege, precancerous findings, as hyperkeratoses and warts, increased with age and duration of exposure. Skin cancer was found in only two of the men. Spectrographic studies revealed that the tar contained benzopyrene and benzanthrane, known to be carcinogenic agents. The cancer frequency was not significantly different from that of the unexposed population. Tar cancer no longer possesses the significance that was earlier attributed to it. Work on the carcinogenic properties of substances using animals is not directly applicable to human beings without further experimentation.
- 653 The Examination of Dimethylantracenes for Carcinogenic Properties. E.L. Kennaway, N.M. Kennaway and F.L. Warren. Cancer Research, 2, 157-9 (1942). (Chem. Abstracts).
1,2; 1,3; 1,4; 2,3 and 9,10 dimethylantracene were tested for carcinogenic activity by application to the skin and by subcutaneous injection and implantation in mice. The 9,10 compound alone produced epithelioma of the skin, and adenomas of the lung were most abundant in the mice receiving this compound. None of the 5 compounds produced tumors of the subcutaneous tissues. The results indicate (1) the importance of substitution in the 9,10 positions as a source of carcinogenic activity and (2) the inadequacy of subcutaneous injection as a sole test for carcinogenic power.
- 654 Inhibition of the Autoxidation of Aldehydes of Carcinogenic Chemicals and Related Compounds. W.L. Wasley and H.P. Rusch. Cancer Res., 2, 422 (June, 1942).
The autoxidation of benzaldehyde and heptaldehyde was inhibited by anthracene, 3,4 benzpyrene, 1,2,5,6 dibenzanthracene, 20 methylcholanthrene, dimethylaminoazobenzene and hydroquinone. Evidence from the absorption spectra indicated that the inhibition of the autoxidation of benzaldehyde by 3,4 benzpyrene involves the induced oxidation of the latter to one or more quinones.

- 655 The Effect of Solvents in Methylcholanthrene Epidermal Carcinogenesis. A Comparison of Benzene and Acetone. R.E. Stowell and W. Cramer. Cancer Research, 2, 193-7 (1942). (Chem. Abstracts).

Epidermal carcinogenesis was obtained somewhat more rapidly with acetone than with benzene as a solvent for 0.3% methylcholanthrene. Mice painted with a 0.3% solution in acetone three times a week and with pure benzene on alternate days developed cancer even more rapidly. Of 123 mice painted with methylcholanthrene in these experiments, 56% had multiple malignant neoplasms of the skin. The hyperemia of the skin of a rabbit ear after the application of methylcholanthrene in benzene was a combined effect of the carcinogen and of its solvent. The less pronounced hyperemia after the application of methylcholanthrene in acetone was caused by the carcinogen alone.

- 656 Experimental Tar Cancer in Man. J. Körbler. Mischr. Krebsbekpfg., 8, 155 (1940). (Chem. Abstracts).

Application of a mixture of equal parts of tar and lard for about a month to the anal orifice and intestinal entrance of a woman suffering from severe constipation and anal bleeding resulted in initial improvement followed by marked aggravation of the disease through narrowing of the intestinal canal. This is considered to be experimental proof of the production of tar cancer. However, the patient had been previously operated upon for intestinal cancer. The tar treatment may have stimulated new proliferations about old, unhealed sections.

- 657 The Significance of Chemical Examination in the Diagnosis of Silicosis. L. U. Gardner and A.J. Redlin. J. Ind. Hyg. & Tox., 24, 125 (June, 1942). See Abstract No. 362, April, 1942 Digest.

Methods of Detection and Determination

- 658 Limits of Inflammability and Ignition Temperature of Styrene in Air. G.W. Jones, G.S. Scott and W.E. Miller. U.S. Bur. of Mines, Rept. of Investig., No. 3630, Washington, D.C. (March, 1942).

The extensive use of styrene, a combustible liquid, in the manufacture of synthetic rubber has made it necessary to study its limits of inflammability. It is a colorless liquid having density of 0.9074 at 20°C. compared to water at 4°C. and a boiling point of 146°C. It has an odor resembling that of a mixture of benzene and naphthalene. When heated to around 200°C. it polymerizes very rapidly to the solid metastyrene. The limits of inflammability of styrene by volume in dry air at laboratory pressures and temperatures ranging from 29.3° to 65.2°C. are 1.10 per cent for the lower and 6.10 per cent for the upper limit. All mixtures falling within these limits are inflammable. Styrene has ignition temperatures of 490°C. in air and 450°C. in oxygen. The method employed to establish the limits of inflammability and ignition temperatures are described.

- 659 Prevention of Lead Poisoning in Glazers. Zweiling. Keram. Rundschau, 48, 155 (1940). (Chem. Abstracts).

No plumbism has occurred in recent years among glazers since the introduction of the following preventive measures: spraying in isolated locations with good spray removal, wearing respirators, careful oral and body hygiene, wearing of protective clothing (smocks) and improving nutrition.

- Determination of the Concentration of Benzene and Toluene in Air by a Spectroscopic Method. P.A. Cole. J. of Optical Soc. of Amer., 32, 304 (May, 1942). A convenient spectroscopic method for the qualitative and quantitative analysis of air samples for benzene and toluene is described. The method is sufficiently precise (± 10 per cent) for application in the range of toxicological importance when only a 500 cc. sample is used. The method is limited to those vapors which have discrete band spectra in the near ultraviolet region of the spectrum. A convenient sampling bulb is described which is useful for air samples containing inflammable solvents. Working curves relating intensity of absorption to concentration are shown for benzene and toluene.
- 661 Electrochemical Method for the Detection of Lead in Foodstuffs. M.I. Zotova. Voprosy Pitaniya, 1, 71 (1941). (Chem. Abstracts). The method requires carbonization with a mixture of aluminum and calcium nitrates with subsequent ashing in a muffle furnace at 450-500°C. The ash is dissolved in nitric acid and the lead is removed electrochemically as lead dioxide on the anode. The lead is finally determined colorimetrically. The method is effective for 0.05 to 1.0 mg. of lead and requires 8 to 9 hours for a determination. An accuracy of 95% of the actual amount of lead is claimed. Tin does not interfere.
- 662 Phenol Studies. I. Review of Literature. II. Quantitative Spectrophotometric Estimation of Free and Conjugated Phenol in Tissues and Fluids. III. Phenol Content of Normal Tissues and Fluids. W. Deichmann and L.J. Schafer. Am. J. Clin. Path., 12, 129-43 (1942). (Chem. Abstracts). Normal human blood has a free phenol content of 0.0 to 0.08 and a conjugated phenol content from 0.0 to 0.08 mg. per cent. Sweat was found to contain: free 0.09 to 0.44, conjugated 0.04 to 0.11 and total phenol 0.16 to 0.55 mg. per cent. Saliva contains: free 0.11 to 0.23, conjugated 0.07 to 0.15 and total 0.23 to 0.37 mg. per cent. Urine contains: free 0.0 to 3.8, conjugated 10.0 to 39.0 and total 13.0 to 42.0 mg. per cent. Feces contain 1.9 to 4.2 total phenol. Organs contain: free 0.0 to 0.09, conjugated 0.0 to 0.56 and total 0.0 to 0.56 mg. per cent. There are 39 references to the literature.
- 663 The Use of Dichloroethane in Industry from the Standpoint of Industrial Hygiene. N.D. Rozenbaum. Khim. Referat. Zhur., No.3, 141 (1940). (Chem. Abstracts). Poisoning by dichloroethane is usually mild. Concentrations below 0.1 mg. per liter do not produce chronic intoxication. Under production conditions the concentration of dichloroethane in the air usually does not exceed 0.03 to 0.06 mg. per liter. Dichloroethane is best determined by the method of S.L. Ginsburg based on its absorption in alcohol and the reaction of the solution with sodium ethylate. The chlorine content is then determined nephelometrically. A number of cases of poisoning and their causes are described.
- 664 Polarographic Determination of Arsenic in Biological Material. Karl Bambach. Ind. Eng. Chem., Anal. Ed., 14, 265-7 (1942). Although arsenate ions are apparently not reduced by the polarograph, arsenious ions yield a step with a half wave potential of -- 0.35V. in 1.5 normal HCl and -0.5V. in 0.5 normal HCl. The potentials were taken against the 1 normal calomel electrode. With quantities of arsenic below 10 gammas the error is ± 10 per cent; above 10 gamma it is ± 3 to 5 per cent. Antimony has a step with a half wave potential of -0.16V. in 1.5 normal HCl and -0.22V. in 0.5 normal HCl and it does not interfere even if added directly to the solution before electrolysis.

- 660 Prevention and Control of Hazards in the Radium Dial Painting Industry. L. F. Curtiss. *J. Ind. Hyg. & Tox.*, 24, 131 (June, 1942).
The rapid increase in the manufacture and application of radium luminous paint as a result of the war requires special watchfulness on the part of those charged with protecting the workmen in this industry. The information now available was accumulated through expensive and disastrous experiences, a repetition of which is inexcusable. The radium family of elements is described and a diagram of the radioactive series is presented. The effects on the body of each member of the series and the alpha, beta and gamma rays which they generate are discussed. Preventive measures fall into three groups, corresponding to the three methods by which radium may be introduced into the body. Ingestion is caused primarily by the practice of pointing the brushes between the lips and secondarily by untidiness and carelessness. The second hazard is the inhalation of radon, a gas, or radioactive dust. The third source of poisoning is the gamma radiation. Methods of measurement and control of the hazards are described in detail. Extremely sensitive methods of detecting hazardous exposures are available. They include the use of an ionization chamber for obtaining a photographic record of the amount of radon present and the Geiger-Muller tube counter for determining gamma ray intensity. The maximum allowable concentration of radon is 10-10 curie per liter. The tolerance limit of gamma ray intensity is 0.1 roentgen per 8 hour day.
- 666 Colorimetric Microdetermination of Arsenic. M.B. Jacobs and J. Nagler. *Ind. & Eng. Chem., Anal. Ed.*, 14, 442 (May 15, 1942).
The combined arsine generation and molybdenum blue method for the micro-determination of arsenic is simple and convenient. It is more sensitive than the official Gutzeit test, for accurate determinations of as little as 1.5 micrograms of arsenious oxide can be made. The apparatus required is inexpensive and available in most laboratories. The relative hazard in arsine generation is less than that of other methods which generate relatively large amounts of hydrogen chloride. The time involved is comparatively long but the analyses may be run in banks similar to the Gutzeit estimations.
- 667 Spectrophotometric Estimation of Pentachlorophenol in Tissues and Water. W. Deichmann and L.J. Schafer. *Ind. Eng. Chem., Anal. Ed.*, 14, 310-12 (1942).
A new, dependable and accurate method is described which is based on the formation and spectrophotometric determination of a reddish yellow pigment formed by the action of nitric acid on pentachlorophenol. Deichmann followed the compound which is toxic, through the body in amounts below harmful levels. The method is applicable to 0 to 9 mg. per 10 grams of biological material (except fat) and to 0 to 50 mg. in 5 cc. of water. Some other substances give a false positive reaction.
- 668 Estimating the Toxicity of Toxic Industrial Dusts. N.S. Pravdin. *Farmakol. i. Toksikol.*, 3, 17-19 (1940). (Chem. Abstracts).
A method of estimating the toxicity of dusts can be based on detoxification of nearly insoluble dusts by the cells of the reticulo-endothelial system. These cells act as a physiological barrier, but are probably themselves impaired in their enzymic secretory functions, as evidenced by greater incidence of infectious diseases in some dust exposed occupations. The method can be used for estimating toxicity of dusts before the symptoms of slow chronic poisoning begin to appear.
- 669 Detection of Radon by Means of a Proportional Counter. S.C. Brown, L.G. Elliott and R.D. Evans. *Rev. Sci. Instruments*, 13, 147 (1942). (Chem. Abstracts).
The construction of a counter and amplifier is described. The radon is either condensed in a liquid air trap before transferring it to the counter or it is swept into the counter with an inert gas.

- 670 Orthonitrosophenol as a New Reagent in Colorimetric Analysis -- Determination of Cobalt. George Cronheim. Ind. Eng. Chem., Anal. Ed., 14, 445 (May 15, 1942).
O-Nitrosophenol as a new reagent in colorimetric analysis offers many possibilities for the estimation of small amounts of cobalt, palladium, iron, copper, mercury and nickel. It is possible to estimate 5 micrograms of cobalt in 50 ml. with an error not exceeding 1 per cent. The only interfering metals are trivalent iron and palladium. The trivalent iron interference is eliminated by forming complex iron compounds which do not react with O-nitrosophenol. The interference of palladium can be removed by the use of suitable color filters.
- 671 Industrial Health Defense -- Dust Counts and Their Significance. N.R. Bernz. Heat., Pip., & Air Cond., 14, 361 (June, 1942).
The methods employed in the evaluation of dust exposures are described in this series of articles which began in March, 1942. The present article is devoted to a discussion of the midget impinger, the microprojector, the Owens jet, the Bausch & Lomb dust counter and the konimeter.
- 672 Relative Merits of Large and Small Sampling Nozzles for Dust Determinations. H.H. Bubar. Combustion, 13, 39 (June, 1942).
The article presents a discussion of the determination of the dust load in exhaust flues. A modification of the A.S.T.M. Code is suggested to provide a 1-1/2 inch nozzle in place of the present 1/4 inch diameter sampling nozzle. By means of specially devised apparatus it is demonstrated that more accurate results will be obtained by the modified procedure.
- 673 Signaling Apparatus for Dangerous Concentrations of Benzene in Air. I.B. Kogan. J. Applied Chem. (U.S.S.R.) 14, 662-5 (1941). (Chem. Abstracts).
An automatic apparatus is described for signaling the appearance of dangerous concentrations of benzene vapor in air (0.2 mg./liter or higher). Air is drawn into a porcelain tube where it is burned with the CO₂ produced being absorbed in a calcium hydroxide solution. The electrical conductivity of the solution is used to actuate a light or bell through an electrical relay. The apparatus is not specific and must be calibrated for each organic substance to be measured. The instrument cannot be used in the atmosphere being analyzed as an explosive mixture would be detonated by the electric muffle heater used.
- 674 Apparatus for the Detection of Poisonous and Explosive Gases and Vapors. E. Heering. Zentr. Gewerbehyg. Unfallverhüt., 27, 11 (1940). (Chem. Abstracts).
Methods for the detection and estimation and commercial apparatus for the recognition of poisonous or explosive gases and vapors are described. The fields of application and the supply houses are tabulated.

Control Methods

- 675 Better Dust Control Needed in Food Plants. Max Levine. Food Industries, 12, 50-2 (1940). (Chem. Abstracts).
Much spoilage occurs in beverage plants as a result of microbial contamination from dust. Improved designs of equipment together with strict cleanliness and either air filtering or air conditioning are recommended.

- 672 Industrial Code Rule No.34 -- Relating to the Control of Silica Dust in the Stone Crushing Operations. N. Y. Dept. of Labor, Board of Standards and Appeals, effective July 1, 1942. 18 pp.
- The rules apply to all stone crushing and associated operations involving exposure to dust containing free silicon dioxide. Failure to comply with the rules of this industrial code are punishable by fine or imprisonment or both. The maximum allowable dust concentrations, the methods of determining the free silicon of the stone, the methods of determining the atmospheric dust concentration and the methods of dust control are described. The general requirements for plan examinations for the issuance of approval of equipment for dust control are also included. The possibility of there being practical considerations which would cause unnecessary hardships in some instances is recognized. The Board of Standards and Appeals will consider claims for variations on the basis of the following factors: (1) The free silicon dioxide content of the air-borne dust particles; (2) The quantities of suspended particles of free silicon dioxide dust less than ten microns in size and (3) The presence and character of inhibitor substances. Section 65 of the Workmen's Compensation Law - Articles 1 and 2 apply to these rules. They state that legislative intent is to prohibit by every lawful means available any requirement as a prerequisite to employment which compels a candidate for employment to undergo a medical examination. Copies available from the Printing Bureau, Labor Department, State Office Building, Albany, N. Y. (10 cents).
- 677 Industrial Code Rule No.10 -- Relation to the Equipment, Maintenance and Sanitation of Foundries and the Control of Dusts, Gases and Fumes in Foundries. N. Y. Dept. of Labor, Board of Standards and Appeals. Effective February 1, 1942. 39pp.
- The rules are known as "The Foundry Code" and they have the force and effect of law. Penalties for failure to comply with the rules are provided and they include fine or imprisonment or both. The Foundry Code is comprehensive and is intended to cover by regulation all operations, processes, equipment and environment which might adversely effect the health or well-being of employees. Copies of the bulletin may be secured through the Printing Bureau, Labor Department, State Office Building, Albany, N.Y. (10 cents).
- 678 Ventilation for Control of Fumes in Wartime Welding Work. W.C.L. Hemeon. Heat., Pip., & Air Cond., 14, 341 (June, 1942).
- The control of fumes from electric welding is of immense importance in keeping men on the job, by avoiding the otherwise inevitable days off for sickness and for maintenance of worker efficiency and morale. Necessity for such control is especially apparent in the shipbuilding industry, but it is just as essential in all plants and shops employing welding for production for victory. Local exhaust systems, the characteristics of the safety zone, limitations and specifications are discussed. Hose size, the possibilities in static pressure regain and other general ventilation methods are applied to floor and bench welding operations.
- 679 Guarding Against the Flammable Liquid Fire Hazard. C.L. Griffin. Ind. Eng. Chem., Ind. Ed., 34, 664 (June 2, 1942).
- The flammable liquid fire hazard is chief among the threats which menace the process industries. The way to extinguish a fire is to smother it, take away its oxygen. In most cases, it is vital to control the fire in a hurry. Modern equipment for the early detection of fires and an automatic high pressure carbon dioxide system are described. The carbon dioxide system has been used for multiple protection of more than one hazard and for a number of special purposes.

- 680 Protecting Life, Property and Production. Ind. Hygiene Codes Committee, Amer. Foundrymen's Assoc., Foundry, 70, 60 (June, 1942).
Part II of ~~the~~ series started in May, 1942. See Abstract No. 469, May, 1942. The complete code may be purchased through the American Foundrymen's Assoc., 222 W. Adams St., Chicago, Ill. (\$1.50).
- 681 A Quantitative Vaporizer. W.F. Wells. Science, 95, 609 (June 12, 1942).
A means of regulating a quantitative dosage of disinfectant for air disinfection is described. A sketch of the apparatus which provides a cell with an immersed heating element is given.
- 682 Workers' Clothing -- A Production Factor. C.P. Yaglou. Occup. Hazards, 4, 13 (June, 1942).
The type of clothing worn by workers bears considerable significance in the determination of air conditioning standards. There is at the present a double standard of comfort for men and women due primarily to the difference in the amount of clothing worn. If women would dress in winter with clothes comparable in warmth to those of men and if men would dress in the summer with clothes comparable in warmth to those worn by women, the problem of air conditioning would be greatly simplified. The expense of heating and cooling buildings also would be reduced.
- 683 Salivation Hazard Lessened in Quicksilver Mining. Thomas Soule. Eng. Mining J., 143, 51-3 (1942). (Chem. Abstracts).
The remedy is found in spraying a lime-sulphur solution on all places and objects that can harbor the native mercury. (See abstract No. 555, June, 1942).
- 684 New Cadmium Standard Protects Worker's Health. Cyril Ainsworth. Ind. Standardization, 12, 317-18 (1941). (Chem. Abstracts).
An allowable concentration of cadmium or its compounds of 1 mg. per 10 cubic meters of air has been prescribed by the American Standards Association. The sampling procedure and analytical methods are given in the standard.
- 685 Chemical Engineering Aspects of Centrifugal Fan Design. C.V. Herrmann. Trans. Am. Inst. Chem. Engrs., 38, 365-76 (1942). (Chem. Abstracts).
The factors of centrifugal fan design which are of particular importance when handling corrosive or erosive gases are discussed. The ways in which these factors can modify the more standard details of the regular ventilating fan designs are reviewed.

Industrial Medical Practice

- 686 Progress Report on Industrial Hygiene in the National Defense Program. Div. of Ind. Hyg., Nat. Inst. of Health. War Medicine, 2, 497 (May, 1942).
The report describes the progress in the training of new personnel, the services to industrial military establishments, the assistance to state and local industrial hygiene bureaus, the laboratory research and the miscellaneous activities of the Division of Industrial Hygiene, National Institute of Health as a part of the National War effort.

637 Testimony Before Commission and Court. W.A. Bishop. J. Ind. Hyg. & Tox., 24, 139 (June, 1943).

1. Be dignified, but not pompous.
2. Use simple, understandable language and if technical terms are used, explain their meaning.
3. Remember your oath and adhere to the truth.
4. Render sound and reasoned opinions which agree with the best medical thought.
5. Do not be led into hasty or ill-considered opinions on insufficient knowledge or evidence.
6. Be sure that your examinations of claimants are comprehensive enough to cover all the reasonable contingencies, in order that your statements may be based as fully as possible upon your own investigations.
7. Refuse to answer categorically, if such a response is only a half truth, and this applies just as much to the questions of your own attorney as to those of the opposition.
8. Do not be afraid to say you don't know.
9. Do not be averse to agreeing with the opposing attorney, if his question calls for such a response.
10. Refuse to allow him to anger you. Remember that may be what he hopes to accomplish. If he does, it is poor strategy to play into his hands; and, if he doesn't you mark yourself as a touchy, irate individual.
11. Do not endeavor to try the case yourself. Your attorney can do it better.
12. Do not give the appearance of trying to win the case. That also is the attorney's job.
13. Be reasonable.
14. Direct your remarks not to your questioner, but to the most important listener: the jury, the auditor, or the commissioner as the case may be.
15. Stick to your opinion -- if it is worth anything, it deserves your adherence. Do not let yourself be jockeyed out of it.
16. Try to appear human and humane, and above all things, be honest.

638 Ultraviolet Burns of the Eye. Queries and Minor Notes. J.A.M.A., 119, 764 (June 27, 1942).

A method for treating workmen whose eyes have been burned by flashes of ultraviolet light is described. The treatment has been applied to several hundred cases of shipyard workers without a single failure.

639 Fitness, Fatigue and Recuperation -- Survey of Methods Used for Improving the Physical Performance of Man. F.A. Hellebrandt and P.V. Karpovich. War Medicine, 1, 745 (1942). (Chem. Abstracts).

Ergogenic aids can be used to delay the onset of exhaustion, to hasten recuperation or to dull the awareness of fatigue. The effect of carbohydrates, gelatin, vitamins, alkali, ammonium chloride, phosphates, sodium chloride, drugs and hormones are discussed.

690 Patch Test for Antimony. Queries and Minor Notes. J.A.M.A., 119, 764 (June 27, 1942).

The handling of antimony and its compounds is an occasional cause for contact dermatitis. All workmen who are exposed and all new applicants who will be exposed should be tested by the patch or contact method. Patch testing with a 3% antimony chloride solution on a clear spot on the arm or back is recommended. The patch is removed at the end of 48 hours or sooner if a positive reaction is received. A control test should be made on someone not exposed to the metal. Sulzberger (Dermatologic Allergy, Springfield, Ill., C.C. Thomas, 1940, p.442) states that a 3% solution of antimony chloride is not a primary irritant and that it will cause dermatitis only on those who are allergic to it.

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