INDUSTRIAL HYGIENE DIGEST

Literature Abstracts

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

Industrial Health News

Issued Monthly By

INDUSTRIAL HYGIENE FOUNDATION

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INDUSTRIAL HYGIENE FOUNDATION

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.

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Four More Companies Join Foundation

Four companies have affiliated with the Foundation since the first of the year. They are: The Flintkote Co., Employers Mutual Liability Insurance Co., Pacific Coast Pulp and Paper Manufacturers Assoc., and Owens-Corning Fiberglas Corp.

Proceedings of Annual Meeting Available Soon

The Proceedings for the Foundation's sixth annual meeting, numbering 176 pages, are now running through the press and will be distributed to members in a few days. For your own benefit, please give bulletin "preference rating" in your organization. It is by far the most important Proceedings the Foundation has ever issued, replete with exhaustive material on such divers subjects in industrial health as:

Effect of arc welding fumes on susceptibility to tuberculosis, use of aluminum powder as a possible preventive in silicosis, statistical and economic studies of sick absenteeism, comments on the Mine Inspection Law, modern industrial hygiene methods in war industries, protection of men and machines against saboteurs, legal trends and new legislation, a rich informal discussion of employee health with respect to industrial relations and an analytical study of fatigue which is a bulletin in itself. Watch for the Proceedings and put it to work!

Sickness vs. Production

The Gallup Poll estimates that throughout the United States 24 million man-hours of work were lost because of illness in the four week period of November 24 to December 20. This is in approximate agreement with findings from studies of sick absenteeism made by the Public Health Service. This ruinous loss MUST be reduced! How can our staggering production demands be met with workers losing an estimated 400 million days each year through illness? What can be done about it? The first step is an inventory, an audit of sick absences. Through the Foundation, a number of member companies are now engaged in such a study.

Conservation of Materials

The Foundation has been asked by the Industrial Salvage Section, Bureau of Industrial Conservation, Washington, to help "enlist the active cooperation of every individual in every manufacturing establishment, mine, mill, etc., to reclaim or salvage critical commodities such as iron and steel scrap, non-ferrous metals, cotton and woolen rags, paper and rubber." The Bureau urges companies which have not already acted to institute the following simple program, NOW:

"1. Put some one responsible individual in charge of salvage throughout all departments of your business and give him authority to organize and start at once an emergency 'clean up' campaign, to be followed with a permanent salvage organization; 2. devise an effective method of bringing the message of conservation to all of your employees every day; build into your plan a program to keep it alive, don't let initial enthusiasm die. This is a continuous job."

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INDUSTRIAL HYGIENE DIGEST
Literature and News

News Items

1 Workers in Industrial Plants Told What to do in an Air Raid.
The plant protection division of the Office of Civilian Defense December 29 issued the following instructions for workers in industrial plants as to their conduct in the event of an air raid:

1. Keep working until our air-raid alarm is sounded.
2. Take cover.
3. Keep cool and help others to keep cool.
4. Don't phone or shout -- listen to your air-raid warden.
5. If you have a plant defense post, take that position at the sound of the alarm.
6. Others continue their usual tasks until the air-raid wardens give the signal to take temporary shelter.
7. Take the necessary safety measures for your machine and tools.
8. Do not show lights.
9. Fight incendiary bombs. Conflagrations are avoided by controlling such bombs at once.
10. Remain "alert" in the prescribed safe place until the "all clear" signal is given and then return to work.
11. Remember that this is a war of production and that production must continue. Your plant is taking every precaution for your safety.

2 The Seven-Day Week in New York State.
On the request of the War and Navy Departments, the first formulation was made for procedures to aid primary and subcontractors working on war orders to secure, where necessary, certain relaxations in hour regulations embodied in the State labor laws. Where legal restrictions can be shown to interfere with maximum production, applications will be considered for permission to work women seven days a week or on a three-shift basis or to waive other provisions of law restricting their hours of employment. Management and labor are concerned, as is the Labor Department, to prevent the excessive lengthening of hours to the point where output would actually be reduced through fatigue, industrial accidents and work stoppage. This happened in the last war and in England after Dunkerque and in Nazi Germany. The experience of many other countries as to what conditions make for maximum production will be considered in decisions on applications.
From News Release by Frieda S. Miller, Industrial Commissioner, State of New York.

3 Gas Gangrene.

A new kind of gas gangrene threatens workers in America's war industries unless care is taken to guard open cuts and wounds from magnesium splinters and dust, it appears from a report by Dr. Carey P. McCord, of the medical department of the Chrysler Corporation at Detroit. Metallic magnesium and some of its alloys, the newest widely used metal in war industries, have been found to produce a unique gaseous condition when they get into wounds. Unless the magnesium is properly and completely cleaned out of the wound, even trivial injuries may become serious and prolonged. The condition that results is similar to gas gangrene, a serious war wound danger, except that it is caused by the magnesium instead of by germs. According to reports received, this kind of chemical gas gangrene has been very prevalent in German industries with as many as 5,000 cases in 1939. The studies by Dr. McCord, Dr. Stuart F. Mock and Dr. Gordon C. Harrold, also of the Chrysler Corporation, are believed to be the first in the United States showing the danger of not cleaning out all metal particles or dust from a wound in which magnesium particles might be involved. "Early in our investigation," Dr. McCord reported, "we found that rat wounds in which small particles of magnesium had been introduced, unlike those contaminated with most metals, glass and wood, promptly lead to hydrogen gas formation in the tissues. The quantity of gas we found to be extensive and if neglected probably would produce a condition akin to a chemical gas gangrene. In the presence of magnesium particles it was discovered that hydrogen was evolved from the fluids of the tissues themselves and if the metal was not immediately extracted, would form a gaseous tumor. Thus it would seem that injuries resulting from not cleaning all magnesium particles from wounds may be much more serious than ordinary industrial injuries. The danger of this effect of magnesium calls, in the first place, for special preventive procedure against accidental injuries where magnesium particles might be involved, and in the second place, the availability of immediate proper medical care. The complete removal of all metallic magnesium apparently is vital." Science - Supplement 95, 10 (January 9, 1942.

Legal Developments

4 Lead Poisoning from Fumes Held "Accident."

The employee was engaged in painting a bridge. In this work he used a pressure spray gun. He was exposed to the vaporized lead paint discharged by the spray gun. The first day on the job he asked for a respirator. He was furnished with one, but he claimed that by reason of its age and condition it was only partially effective. After working about a week the employee became disabled. He was found to be suffering from lead poisoning. The defense against the claim for compensation was that the employee had not suffered an accidental injury, but was suffering from a non-compensable occupational disease. This defense was rejected.

The Court stated that an injury to an employee as the result of inhalation of vapor, gas or dust, may constitute an "accidental injury" as defined by the Compensation Act. In this case the acute lead poisoning was contracted in a short space of time, and the happening was sufficiently certain and definite in point of time so as to constitute an "accidental injury." C.K. Howard & Co. et al. vs. McKay et al. (Okla.) 117 Pac. 2nd 525 (September, 1941). Occup. Hazards 4 22, (December, 1941).

5 Death of Helper on Gravel Loading Machine from Rocky Mountain Spotted Fever. Receiving of Fatal Tick Bite During Course of Employment.
Prowse, husband of respondent, was employed by Salt Lake County, petitioner, as a helper on a gravel loading machine. While loading trucks for the County from the waste dump of the Maxfield Mine in Big Cottonwood Canyon in Salt Lake County, Prowse became ill on July 26, 1940, and subsequently died on August 2, 1940, of a disease diagnosed as Rocky Mountain spotted fever. There is no question here as to the cause of his death, nor that hard-shelled ticks, carriers of Rocky Mountain spotted fever, are to be found throughout the Intermountain region. The sole question to be determined by this court is whether the evidence is sufficient to sustain the findings of the Commission that Prowse received the fatal tick bite during the course of his employment. On July 22nd, Prowse had stated to his foreman that something had "bitten him on the finger." It appears from the testimony of Mrs. Prowse that Mr. Prowse had not felt well for a few days previous to July 26th. That he had been irritable and grouchy. Four witnesses for respondent testified that they had seen wood ticks in Big Cottonwood Canyon although none were seen within three miles of where deceased worked. In the cases of fulminating infections, as here, the period of incubation is determined as from two to five days. The Commission having granted an award, the court concludes that there is sufficient, competent, material evidence appearing of record to support the finding of the Commission that the biting tick was picked up by the deceased during the course of his employment. The period of incubation involved in this case articulates with the probability that the tick bite occurred while he was at work, and does not articulate with the dates he went on a picnic or went swimming. The award is affirmed. Salt Lake County v. Industrial Commission of Utah. Utah Supreme Ct. Decided December 29, 1941. (CCH).

6 Injury to Hand While Employed on a Piston Grinding Machine. Continued Favored Employment. Supplemental Agreement. Later Development of Leprosy. Compensation for Partial Disability.
The following is a digest of the opinion for affirmance filed in a 4-4 decision rendered in this cause. Defendant appeals from award granting plaintiff further compensation for partial disability. On about August 14, 1929, while employed on a piston grinding machine in defendant's plant, plaintiff, an experienced workman, sustained accidental injury to his right hand. He lost no compensable time and continued at favored work until he was discharged several months later. In October, 1932, plaintiff filed application for compensation. He was awarded compensation. Payments were made until February 23, 1934, when the parties entered into a supplemental agreement. In pursuance of such agreement plaintiff returned to work at defendant's plant and continued at favored work until June, 1937, when he was found to have leprosy. On about February 3, 1939, plaintiff filed petition for further compensation, which claim is now disputed. The fact that plaintiff is confined in the leper colony by health authorities and is thereby prevented from working at "favored employment," does not defeat his right to compensation for his continuing hand injury. Defendant could introduce proof that the condition of plaintiff's hand was due to his leprosy and not to the accidental injury. However, the department, after hearing proofs of the leprous condition, determined that the continuing disabled condition of plaintiff's hand was due to the injury; and such determination of fact is final. Defendant contends that plaintiff, by failing to report in Detroit on February 28, 1939, for physical examination, forfeited his right to further compensation, and that the failure of the department to require plaintiff to submit to an examination deprived defendant of a full and complete hearing and of "its day in court." The record indicates that on about February 25, 1939, while confined in the leper colony, plaintiff received notice or citation from defendant to report in Detroit on February 28, 1939,

for physical examination. It was apparently a physical impossibility for plaintiff to report for the examination on February 28, 1939, and he should not be penalized for his failure to do so. The award is affirmed. Sotomayor v. Ford Motor Co. Mich. Supreme Ct. Decided January 5, 1942. (CCH).

7 Burns from Muriatic Acid. Duty of Employer. Assumption of the Risk. Contributory Negligence.

Defendant brought this appeal from a judgment rendered against him, in an action for damages for personal injuries which plaintiff claims to have sustained, during the course of his employment by defendant, as a result of burns caused by muriatic acid used in cleaning the outside brick walls of a building. Plaintiff testified that he had had no prior experience washing brick; that no one had told him the kind of acid used; that he did not know the danger of burning his skin in washing those walls; and that he had asked the defendant about the danger and defendant said there was nothing to it. It is a general rule of law that an employer is under an obligation to inform himself of those matters of scientific knowledge relative to the dangers and hazards involved in the use of substances and processes used in his employment. The jury would have been justified in finding that defendant should have foreseen that plaintiff might receive burns from this solution of muriatic acid. Nor can the court say as a matter of law that plaintiff assumed the risk of the danger or was guilty of contributory negligence. The danger to plaintiff was latent and not open to the observation of one not learned in the science of chemistry. The evidence of contributory negligence coming from the plaintiff was not sufficient to justify the court in directing a verdict against him. The judgment is affirmed. Marsanick v. Luechtefeld. Mo. St. Louis Ct. of App. Decided December 2, 1941. (CCH).

8 Hydrophobia Prevention Compensated.

In this case the claimant, a farm hand, had filed application for the payment of medical fees of $54.50, incurred for Pasteur treatments. In his application he alleged that he had been handling sheep which developed rabies and on the advice of a physician and his employer took the treatments as a preventive against hydrophobia. On recommendation of the medical investigator, the claim had been denied on the ground that there was no proof of trauma on which to base an accident claim and since the disease had never been contracted, it could not be considered as a compensable occupational disease claim. Later, the Commission voluntarily reopened the case and the claims referee recommended its allowance as an occupational disease claim, on the reasoning that the medical expense involved may have saved the Commission from paying a death claim. In his opinion, contact with a rabid animal is sufficient to justify the Commission in accepting jurisdiction in the case. The Commission approved the claim and ordered that medical bills be paid. Ohio Ind. Comm. Monitor 14, 185 (December, 1941).

9 "Snap Finger" Compensated.

The claimant in this case applied for the payment of medical fees incurred as the result of a finger condition which was due, he alleged, to his employment. The claimant is a chipper and his duties consisted of chipping the heads off a boiler by means of an air hammer. As a result of the constant jar and contact of the air hammer he developed a "snap finger," which is the balling up of a tendon over a joint. The medical investigator reported that the condition was very unusual and that it was evidently peculiar to claimant's employment, since it cleared up when he temporarily took up other work. The claims reviewer was of the opinion that the claimant should be given the benefit of the doubt and the medical bills be paid. The Commission so ordered and also that such treatment be provided as is authorized by the medical section. Ohio Ind. Comm. Monitor 14, 186 (December, 1941).

10 Injury from Inhaling Impure Air. Board's Finding as Contrary to Expert Testimony.

In 1937, Marcum filed his application for compensation with the Workmen's Compensation Board alleging that on the 3rd day of February, 1937, he was permanently and totally disabled by breathing impure air and gases in the course of his employment as a coal miner in one of appellant's mines. The board rendered an opinion adjudging Marcum to be totally and permanently disabled and awarded him the maximum compensation for 400 weeks. Appellant has prosecuted this appeal, contending, (1) that the evidence fails to establish that Marcum became ill from the inhalation of impure air; (2) the evidence establishes conclusively that his disability was caused solely by pre-existing disease. Marcum appeared as a witness. He testified that the ventilation was very bad and smoke created by explosives used in shooting the coal was caused to remain in the room by improper ventilation. After becoming sick and weak on February 3d, he quit work at 2:30 P.M. His evidence concerning the bad ventilation and noxious gases was corroborated in full by a fellow workman. There is sufficient evidence to support the findings of the board in respect to the presence of impure air and gas in the room where Marcum worked on the day he claimed to have been injured. Appellant's second contention merits serious consideration, and is: That since the uncontradicted medical evidence shows Marcum's disability could not have been caused by the inhalation of impure air or gas, and, since the cause of his disability is necessarily one beyond the realm of common knowledge and exclusively within the domain of expert opinion, such testimony is conclusive of the fact that the disability was not caused by inhalation of impure air or gas. Although the opinions of physicians, skilled in their profession, will be given great weight by the courts, neither the medical nor any other of the sciences has yet reached the stage of infallibility; and, where circumstances are shown which, if true, would tend to cast some doubt as to the correctness of the opinion of the experts as here, the issue resolves itself into one of fact to be determined by the board. Opinion or expert evidence is neither conclusive, nor controlling as against evidence of facts. The judgment is affirmed. Consolidation Coal Co. v. Marcum's Admr. Ky. Ct. of App. Decided November 25, 1941. (CCH).

11 Dust from Rock Crushing. Silicosis with Superimposed Tuberculosis. Injury as Accidental Rather Than an Occupational Disease.

Notice of injury to respondent was given the board by respondent, stating he was a rock crusher operator and the accident happened by dust from rock crushing operations which has affected his right lung. The attending physician gave his diagnosis as silicosis with superimposed tuberculosis. Appellants resisted compensation on the ground that no proper notice had been given in time, and that the proceedings were barred by sec. 43-1202, contending in substance that respondent was not even entitled to recover under the occupational disease statute, 1939 Sess. Laws, chap. 161, because he had not been subject to conditions conducive to silicosis for a sufficient length of time to entitle him to compensation thereunder. Giving full effect to chapter 161, 1939 Sess. Laws, p. 286, because of the defenses interposed herein, it was initially incumbent upon the board to determine whether respondent was afflicted with disabling or non-disabling silicosis or accidental tuberculosis. The onset of the tuberculosis herein, according to the evidence, was brought about by the action of silica dust, which was sudden and unexpected, and would be regarded as accidental. Nor was the injury in any real sense an occupational disease. It is apparently true that silicosis often results in tuberculosis. Respondent's affliction with incipient tuberculosis or his prodispostion or susceptibility to the same does not bar compensation. Tuberculosis is not by the statute declared to be an occupational disease. Therefore, it is unnecessary to consider whether or not a claim for disability because of silicosis, disabling or non-disabling, as

such, where a sufficient time has not intervened to make applicable the occupational disease statute, is nevertheless or for any reason compensable. The order of the board is affirmed. Dobbs v. Bureau of Highways et al. Idaho Supreme Ct. Decided December 5, 1941. (CCH).

12 Automobile Repairman. Carbon Monoxide Poisoning. Injury as due to an Accident. Plaintiff brought suit against his employer, the Marshall Company, its sales manager, Calkins, and its store manager, Cowan, to recover for injuries alleged to have been caused by carbon monoxide poisoning suffered by plaintiff in his employment. Plaintiff took an involuntary nonsuit as to Calkins. The jury returned a verdict in favor of Cowan, and against the Marshall Company for $10,000. The Marshall Company appealed and plaintiff appealed from the judgment rendered in favor of Cowan. Plaintiff's petition alleged that he was employed to install parts and accessories on automobiles; that Cowan was employed by the Marshall Company as its store manager; that, as a necessary incident to plaintiff's work, motors were caused and permitted to run thereby emitting poisonous gases, so as to poison the air in plaintiff's place of work; that plaintiff inhaled and absorbed such gases, and as a result thereof "did contract a severe form of occupational disease incident and peculiar to plaintiff's employment"; and that plaintiff's injury was caused by defendant's negligence. The Marshall Company claimed that if plaintiff was injured in the manner alleged, the same was governed by Workmen's Compensation Act and the circuit court was without jurisdiction.

If plaintiff's injuries were due to an accident, or series of accidents, rather than to an occupational disease, the primary exclusive jurisdiction would be in the Compensation Commission and not in the circuit court. Plaintiff filed a claim under the Compensation Act, and after receiving several payments, voluntarily withdrew the claim and brought suit. There was abundant evidence that carbon monoxide gas is generated by the operation of automobiles and that such gas is common in garages. There was substantial, though disputed, evidence that plaintiff's injuries were due to the inhalation of such gas, but the evidence in this case fails to establish that plaintiff's injuries constitute an occupational disease. The evidence shows that when such gases do exist in harmful quantity it is due to shutting off the flow of air from the outside. That constitutes an unforeseen event, happening more or less suddenly and violently and producing objective symptoms of an injury within the meaning of the Compensation Act. The exclusive original jurisdiction is vested in the Commission. The judgment against the Marshall Company is reversed and the judgment in favor of Cowan is affirmed. Tindall v. Marshall's U.S. Auto Supply Co. Mo. Supreme Ct. Decided December 12, 1941. (CCH).

13 Silicosis. Gypsum Mine. Safe Place to Work. Failure to Furnish Proper Protection. Contributory Negligence.

The plaintiff Galeota, an employee of the defendant, United States Gypsum Company, brought this action to recover damages for injuries he claims to have suffered because the defendant neglected to provide him with a safe place to work, or to furnish him with devices that would prevent him from inhaling particles of silica from which he contracted silicosis. He sought to recover for negligence of the defendant in failing to observe its common law obligations and also in failing to observe certain provisions of the Labor Law of the State of New York. In order to prevail, the plaintiff must show (1) that he had a condition of his lungs known as silicosis, and (2) that the condition was caused in whole or in part by negligence of the defendant occurring during the six months when he worked for the defendant. The plaintiff received a judgment. Plaintiff's evidence indicated that when working in the gypsum mine he used an electric drill to remove the gypsum, and a jackhammer, to dislodge ash rock and roof

rock. In each case dust was created. The defendant attacks the verdict mainly on the ground that there was no proof of the amount of free silica present in any dust which the plaintiff inhaled. The testimony was, however, sufficient to go to the jury and to justify the verdict for the plaintiff. The defendant contends that the plaintiff was barred from recovery by his own contributory negligence and by his assumption of risks inherent in his employment. There was nothing to show that the defendant instructed this employee that inhaling the dust would result in serious danger to him. This was its duty to a day laborer of no apparent education. There likewise was no showing that defendant furnished him with proper appliances to avoid exposure to silica dust or with a safe place to work. Judgment affirmed. Galeota v. United States Gypsum Co. U.S.C.C.A., 2nd Cir. Decided December 8, 1941. (CCH).

14 Workmen's Compensation Silicosis Fund, Charleston, W. Va., Seventh Annual Report, Year Ending June 30, 1941. C.L. Heaberlin. 15 pp. 1941.
In West Virginia the Workmen's Compensation Silicosis Act provides compensation benefits for silicosis only. An employer may or may not elect to have its provisions apply. As of June 30, 1941 there were 29 employers, with 48,648 employees, operating as self-insurers under the Act. The report includes a financial statement, an account of activities of the Silicosis Division, a table of premium rates, a list of functions of the Silicosis Division, a brief description of silicosis, and a claim record. According to this law, $500 is awarded claims for first stage silicosis, $1000 for second stage, and for third stage, compensation for life at a rate of $8 to $16 per week. From 1935 to 1941, 85 cases of silicosis or alleged silicosis have been reported to the Department. Of these 32 were awarded and 33 denied, the remainder being claims still pending and 6 in which no application was filed.

15 Reports of Committees and Resolutions Adopted by Eighth National Conference on Labor Legislation, November 12, 13 and 14, 1941. U.S. Dept. of Labor, Div. of Labor Standards, Bull. No. 52-A. 23 pp. (1941).
The Committee on State Labor Laws and National Defense reported that comparatively few requests for relaxation of labor laws have been received and that many of such requests have come from non-defense firms. The Committee has considered action under two types of state laws, those which grant no discretionary power and those which allow for administrative exceptions. Certain restrictive regulations were recommended for use with the latter type. The report of the Committee on Safety and Health Program and National Defense contains these general workmen's compensation standards: (1) that the acts be compulsory as to type and apply to all employments; (2) that such acts should provide benefits for all occupational disease disabilities; (3) that necessary medical and hospital care should be provided without specific limits as to cost and time; (4) that administration of the acts should be kept informal and non-technical, and that adequate provision should be made to protect the interest of claimants whenever agreement settlements are permitted; (5) that appeals to the courts from awards and decisions should be allowed only on questions of law; and (6) that cost of workmen's compensation administration should be pro-rated among insurance carriers and self-insurers, and that the operating cost of State funds should be paid out of premium income. The conference also recommends the extension of workmen's compensation coverage to include all interstate commerce operations. Relaxation of physical requirements for employment during the present emergency should not decrease the extent of medical control programs. In fact the data now gained on the otherwise unemployable will be of great value. The conference strongly recommends that industrial hygiene departments be established in all State labor departments. Priority classifications should be adjusted so that an ample supply of personal protective equipment can be made available. (The abstract is confined to the reports of these

two committees on points which have a direct bearing on industrial hygiene. The other Committees are on Education and Training, Labor Supply and Training and Priorities, Industrial Relations, and Resolutions.)

16 Workmen's Compensation Act in South Africa. Anonymous. Int. Lab. Rev., 44, 96-98 (1941).
An Act of May 5, 1941, establishes a State Fund to administer compulsory insurance, and the value of benefits is increased by about 35%. To the compensable occupational diseases are added ankylostomiasis (hookworm disease) anthrax and illnesses caused by arsenic, benzene, halogen derivatives, phosphorus, radium and x-rays. The Act eliminates insurance companies and establishes an exclusive State Fund, except that two existing mutual associations are permitted to function.

17 Social Insurance in Latin America; Its State and Standards. M. Stack. Int. Labor Rev., 44, 1-29 (1941).
Closer collaboration of the Latin American Countries with the International Labor Office began in 1934. Conferences of the South American Countries were held in 1936 and 1939. At these conferences, social insurance standards were determined for the execution of long term policies. Every Latin American country has workmen's compensation laws, but in most of the states the only guarantee for the workmen's claim is a privileged position in the employer's assets. Most of the laws cover occupational diseases in a schedule. In some states compensation is paid by a lump sum which has a low maximum. Most of the countries have compulsory insurance providing long service or old age pensions and invalidity pensions for large or small groups. Legal care for sickness and maternity is secured in a few states, but often in such a way as to impose upon the employer. Broad schemes of compulsory sickness insurance exist in 5 countries. Detailed information is presented about the insurance systems of the various countries.

18 Prevention and Compensation in Silicosis in Spain. Anonymous. Int. Lab. Rev., 44, 99-100 (1941).
An order dated March 7, 1941, makes silicosis compensable in the most important industries. It also prescribes ventilation, medical pre-examinations and a yearly examination.

Industrial Health Hazards and Their Effects

19 The Intra-tracheal Inoculation of Anthracite Dust Mixed with Dead Human Tubercle Bacilli into Rabbits. S.L. Cummins. J. Hyg., 41, 101 (September, 1941).
Experiments are described showing that the collections of cells around anthracite dust mixed with dead human tubercle bacilli are quite different in nature from those that occur around dead tubercle bacilli alone or anthracite dust alone. In the last two cases the absence of any large lesions in the lungs, is very noticeable, whereas in lungs exposed to the mixture the areas marked out by the collections of epitheloid and giant cells are extremely large and definite. It appears probable that the fatty and lipoid materials in tubercle bacilli may be held by some substance attached to the tuberculin portion which is, as has been demonstrated, adsorbed by the dust, or that there may be an adsorption by the dust of these constituents as well; however, the results of additional experiments with fatty and lipoid elements must be awaited.

20 Pulmonary Diseases in the Mining Industry. H.R. Sayers. U.S. Bur. of Mines Inf. Circ., No. 7146. 26 pp. (February, 1941). Obtainable from Div. of Information, U.S. Bur. of Mines, Washington, D.C. free.
The principal pulmonary diseases to which the miner is subject are bronchitis, influenza and pneumonia, pulmonary tuberculosis, anthracosilicosis, and silicosis. The sickness and death rates from these diseases are much higher in dusty than in non-dusty industries, especially where silica dust is used or produced. Anthracosilicosis was found in 23% of 2,711 employees of three anthracite-mining companies studied by the U.S. Public Health Service in 1933, with 63% of the anthracosilicotics showing evidence of disability. The principal pulmonary disease in metal mines is silicosis, and the chief menace in silicosis is tubercle infection. Analysis of data collected by the Public Health Service to determine safe limits of dust exposure indicate that employment in an atmosphere containing less than 50 million dust particles per cubic foot produces a negligible number of silicosis cases when the quartz content of the dust is less than 5%; when the silica content is about 13%, 10 to 15 million particles seems to be a safe limit. The dustiest operations in mining are dry drilling, blasting of dry rock or ore, shoveling or mucking, loading and hauling, and machine coal cutting. The dustiness is determined by sampling, customarily with the impinger in the United States. The principal method of preventing pulmonary diseases is elimination of the dust; if not completely, at least within the safety limits given. The principal methods of control are ventilation, wet methods, proper blasting practice, personal respiratory protection, and physical examination of workers. The efficiency of these methods is shown especially in South Africa, where they have been in use for the longest period. The liability to contract silicosis was less in 1936-37 by 65% than it was in 1920-23. Among the "new miners" who have entered the industry since 1916, and who constitute 77% of the total number of miners, the liability to contract silicosis has been decreased by 87% over the same period. Statistics are presented in a number of tables.

21 The Question of Silicosis as an Occupational Disease in France. Etienne-Martin. Méd. du travail. 13, 1-4 (January-July, 1941).
This paper introduces the January-July issue of Medecin du travail, which is devoted entirely to the struggle to have silicosis recognized as a compensable disease. The employers, relying on the opinion of Policard and other members of the Academie de Medicine, deny that silicosis is an occupational disease, and so no progress has been made.

22 Dust and Disease. C.S. Chubb. Colliery Eng., 18, 125-128 (June, 1941), 150-152 (July, 1941), 173-175 (August, 1941), 198-200 (September, 1941), 255-258 (November, 1941).
The author presents a general review of "dust fibrosis," a term which he believes to be more satisfactory than pneumoconiosis, which is cumbersome and leads to the use of silicosis to include other dust diseases. The first installment deals with dust fibrosis in general. In the second, he discusses fibrosis in coal mines and concludes that coal dust is not harmless as some believe, but that in the absence of proof on either side, coal dust must be considered as a cause of fibrosis. In the third installment silicosis is discussed and in the fourth, asbestosis, anthracosis, infection with silicosis, and siderosis. In the fifth compensation laws of various countries, prevalence of dust fibrosis in Great Britain, and treatment are discussed. Other installments are to follow.

23 Influence of Body Size on Gaseous Nitrogen Elimination During High Oxygen Breathing. A.Cournand and others. Proc.Soc.Exp.Biol.Med., 48, 280-284 (October, 1941).
The nitrogen physically dissolved in body tissues can be eliminated by breathing a gas mixture with low nitrogen content. Approximately 220 cc. of nitrogen are

eliminated during 7 minutes of breathing pure oxygen. The investigation dealt with the relation of amount of nitrogen excreted to body size. A close correlation was found between nitrogen excretion, surface area and body weight.

24 Pigment of Anthracosis. F.A. Taylor. Proc. Soc. Exptl. Biol. & Med., 48, 70-72 (October, 1941).
It has been a matter of controversy whether the pigment found in anthracite lungs is the soot originally deposited therein or a product of hemorrhage and inflammation. Treatment of the lungs with concentrated hydrochloric yielded a product high in nitrogen, which led some authors to take the latter view. In the author's experiments uncontaminated calf lung gave on acid treatment an insoluble residue containing 8 to 10% nitrogen. However, on treatment with alkaline hypochlorite or by papain digestion followed by hypochlorite there was only a trace of residue. When an anthracotic lung was given the hypochlorite treatment, a pigment was isolated, and three samples contained 0.4 to 0.8% nitrogen, compared with 0.4% for soot. The results leave no doubt that the pigment is of external origin.

25 Experimental Air-Borne Disease. Quantitative Natural Respiratory Contagion of Tuberculosis. W.F. Wells and M.B. Lurie. Am. J. Hyg., 34, 21-40 (July, 1941).
Apparatus and methods for the study of quantitative, natural, air-borne contagion which have the following characteristics as applied particularly to respiratory infection in tuberculosis are presented: (a) they estimate with constancy and considerable accuracy the "dose" of naturally inhaled infection units; (b) the survival period, the preallergic interval, and the type and prognosis of the ensuing disease are functions of the dose of naturally inhaled microorganisms; (c) with exposure to small, known doses, the disease reproduces that occurring in rabbits of different inherited natural resistance when exposed to infected cagemates. This disease in the susceptible rabbits has the characteristics of a first infection, and resembles progressive primary tuberculosis in man. In the resistant rabbits, it pursues a more chronic course, resembling reinfection tuberculosis, or adult pulmonary phthisis in man. When pure cultures of tubercle bacilli suspended in the air are exposed at an average distance of 5 centimeters (120 millimicrons per sq. cm.) for 3 seconds, to ultraviolet light of 2537-A° waveband, 94% are killed.

26 Silicosis in Stourbridge Fireclay Miners. S. Doaner. Lancet 241, 417-420 (October 11, 1941).
Three cases of silicosis were found among fireclay miners at Stourbridge, England, where the hazard was not previously suspected. Samples of the two types of clay contained 7.2 to 36.1% of free silica. One of the cases was diagnosed as silicoanthracosis; the other two were typical of silicosis.

27 Critical and Experimental Contribution to the Study of Pneumoconiosis from Sulfur. G.P. Schiavina. Rass. med. ind., 12, 173-185, 244-266 (1941). (Italian).
The author criticizes earlier publications on the effect of sulfur on the lungs and the findings in workers in sulfur mines, which are often contradictory and inexact. In his own experiments, he used aqueous suspensions of quartz, carborundum, calcium oxide, precipitated pure sulfur and crystalline sulfur. The histologic effect was studied after various time intervals ranging from 37-102 days. He found a specific reaction to sulfur in the pleura, an exudative reaction prevalently fibrotic with only a slight tendency to organization. This reaction is entirely different from that of any other dust, especially silica.

28 Effect of Barium Carbonate Fumes on Respiratory Tract. Queries & Minor Notes. J. Am. Med. Assoc., 117, 1221 (October 4, 1941).
Several patients employed in a factory where bombs are heated in barium carbonate, fused electrically in a tank complained of a persistent cough. There is no special ventilation for removal of fumes, and the question is whether the fumes are responsible for the irritation. The barium ion is always toxic when absorbed, but the answer is difficult because it is not known what barium compounds are present in the air. Barium oxide may have a caustic action. Nascent oxygen, a respiratory irritant, may be evolved. If the bomb casings are covered with oil, fumes from the heated oil may be responsible. Barium carbonate reaching the stomach may be changed to barium chloride, which is very toxic. Good ventilation should be supplied under such conditions as described.

29 Two Hundred Cases of Silicosis. The Initial Forms. M. Conrozier and J. Magrin. Med. du trav., 13, 5-56 (1941). (French).
This paper contains many good roentgenograms and case histories of typical silicotics from the coal district of Gard. The silica (presumably quartz) content of the rock is 87%, and protective measures are lacking or inadequate. Therefore silicosis is wide-spread. No miner working more than 3 years is free from fibrosis; and more than half the men in their sixth year of work have definite silicosis. Tuberculosis is rare. The x-rays show many men with nodules, but without fever or bacilli, in seemingly good health, but short of breath and unable to work. The point of much of the authors' description and argument is that silicosis may exist without tuberculosis, a point on which French industrial physicians and some scientists are still unconvinced.

30 The Roentgen Picture of the Lungs and Mediastinum in Lymphogranulomatosis Benigna. [illegible]gnusson. Acta.Med.Scandinav., 103, 511-525 (1940). (Scandinavian).
After a brief survey of the literature, the author presents 5 case histories of lymphogranulomatosis benigna, with lung roentgenographs and one autopsy. The x-ray picture is similar to that of pneumoconiosis; hilar glands are enlarged and chronic interstitial fibrosis is present, especially in the latter stages. The localization of these changes in the anterior parts of the lungs and the close relation to the hilus are valuable signs for differentiating the condition from pneumoconiosis.

31 Rouge for Buffing and Pulmonary Tuberculosis. Queries & Minor Notes. J. Am. Med. Assoc., 117, 1492 (October 25, 1941).
A young man working with two dusty materials both known as rouge for buffing, presented signs of tuberculosis and had an infiltration of the upper chest as revealed by a roentgenogram. One of the materials is slate colored and the other the color of ordinary rouge. Without knowledge of the composition of the particular materials it is impossible to prognosticate their effects on the lungs. Rouge used for buffing is ordinarily composed of iron oxide, which does not produce serious pulmonary reaction unless contaminated by a high percentage of free silica. The roentgenogram is more suggestive of an infectious than a silicotic process, but if the mineral contains free silica it may be due to a combination of silicotic and tuberculous changes.

32 Fat Metabolism and Susceptibility to Carbon Tetrachloride. J.C. Forbes and others. J. Pharmacol., 72, 202-210 (1941).
The oral administration of fat several hours before the time of poisoning markedly increases an animal's susceptibility to carbon tetrachloride irrespective of the concentration of fat in the liver. Xanthine does not affect the concentration of serum lipides of fasting rats or the blood lipide concentration following ingestion of butter-fat. Xanthine injections do not affect the ketonemia of starvation.

33 Notes on Human Pulmonary Anthracosis. F. Nittono. Soc. Path. Jap. Trans., 30, 290-296 (1940). (Japanese); (Biol. Absts. 15, 1648, October, 1941).
In 69 cases of anthracosis there was no difference in the amount of pigment in the lungs. In general there was no difference between the upper and lower lobes. The middle lobe of the right lung had the least amount of pigment. The costal surface of the lung had the most pigment and the interlobar pleurae the least. The phagocytic cells that ingest the dust are derived from the alveolar epithelium. Less active areas of the lung, such as atelectasis, healed tubercles, fibrosis or healed pleuritis, had more pigment than normal tissue. The dust is removed from the latter more effectively by the passage of air. Of 108 cases studied, only 4 had anthracosis involving spleen, liver, heart and kidney. This is said to result from hematogenous metastasis of the dust particles from the lungs.

34 Cavities in the Silicotic Lung. A Pathological Study with Clinical Correlation. A.J. Vorwald. Am.J.Path., 17, 709-718 (September, 1941).
The three types of cavities in the silicotic lung are described: (1) those associated with typical tuberculosis that is little modified by coexistent silicosis; (2) cavities occurring in areas of silico-tuberculosis resulting from combined local effect of tubercle bacilli and silica dust; and (3) cavities of the so-called anemic type that develop in massive areas of fibrosis but show no evidence of causative organisms or cellular reaction. The last are usually small, elongated and slitlike. Their content resembles ink but is more fluid and not purulent. The inner zone of the cavity is an indefinite, ragged zone of semi-necrotic tissue. There is an absence of histopathologic and bacteriologic evidence of infection. In areas of massive fibrosis the blood vessels become obliterated and the resulting anemia is followed by areas of local necrosis which, because of autolysis, ultimately liquefy and excavate.

35 Chronic Fatigue Symptoms Among Industrial Workers. R.V. Ward. Canad. Pub. Health J., 32, 464-7 (September, 1941).
During the present speed-up in production there has been an increase in minor symptoms indicating fatigue in a group of industrial workers, including loss of appetite, insomnia, easy crying, irritibility and the feeling of fatigue itself. The physical signs most often found in these patients were loss of weight, increase in pulse rate, low blood pressure, tremor of outstretched hands and pallor. All the cases recovered after a period of rest. The illnesses most easily confused with the "fatigue syndrome" are pulmonary tuberculosis, hypochromic anemia and hyperthyroidism.

36 Gasoline Intoxication. W. Machle. J. Am. Med. Assoc., 117, 1965-1971 (December 6, 1941).
This is a comprehensive discussion of gasoline poisoning, including description of gasoline, etiology, pathology, symptoms and signs, laboratory examination, sequelae, diagnosis, prognosis and therapy, concluding with the following summary: "Gasoline is a mixture having a widely variable chemical composition, and poisoning from it produces a variable clinical syndrome. The most prominent symptoms and signs arise from the central nervous system and the gastroenteric tract. The opportunities for exposure to gasoline constitute an increasingly important potential hazard in industry and to the community. Pneumonitis, visceral congestion and hemorrhages are the most frequent pathological changes. Chronic intoxication from gasoline is rare. Severe sequelae are uncommon and occur only after severe intoxication. The history of exposure and estimation of its magnitude are of greatest importance in the diagnosis. Therapy is general and supportive."

37 Occupational Injuries. R.P. Ferrari. Med. Klin., 36, 1005-1007, (1940).(German).
A review is included of recent work in the Italian literature on dangers to the health of electrowelders and their prevention, asbestosis, silicosis, changes in the upper air passages produced by electron dust, anaphylactic asthma in a rayon factory, caisson disease, nasal injuries produced by chromium, chronic manganese poisoning, lead in the blood, urine and feces of normal persons and in lead poisoning, toxicity of mercury vapors, fatal poisoning from tetraethyl lead, sulfhemoglobinemia after cleaning metal fibers impregnated with rubber with warm nitrobenzene, blood diseases from the chronic action of benzene, and poisoning in printing establishments from the action of the fumes of a mixture of benzene and xylene used in cleaning.

38 Cyanogen Poisoning. Bruendlmeier. Budap. Orv. Ujsag. p. 24 (1940).(Hungarian); Med. Klin., 36, 1090 (1940). (German).
Cyanogen poisonings occur more frequently with the increased use of cyanogen gas for fumigation. Ten per cent of all poisonings are cyanogen poisonings. A case is reported of a 8-year-old boy who was poisoned by cyanogen gas pouring from the windows of a neighboring dwelling into a court. Details of the progress of the poisoning are given and probable effects are discussed. Recovery followed in 5 weeks. (It is not clear from our information whether "cyanogen gas" refers to cyanogen itself or to hydrogen cyanide. At least the factor of 10% must refer to hydrogen cyanide, as it is much more frequently used than cyanogen.)

39 Industrial Exposure to Toxic Chemicals. J.H. Foulger and A.J. Fleming. J. Am. Med. Assoc., 117, 831-836 (September 6, 1941).
The authors claim to have demonstrated that the first effects of exposure to toxic substances are the same, no matter what the chemical structure of the compound involved, provided they have systemic effects. The symptoms are: easiness of fatigue, headache, gastro-enteric disturbances, vertigo, precordial pain, pain or tingling in extremities and dyspnea on slight exertion. The first signs of exposure to toxic chemicals are definite changes in pulse rate and blood pressure. On the basis of this belief the authors have developed a scheme for medical control of industrial health, which is described briefly. It begins with a comprehensive preemployment examination used for selection and never for elimination. An equally thorough examination should be made when an employee is transferred to another job or released from employment. Blood pressure tests are frequently made, especially when symptoms of toxic exposure are present, and a deviation of more than 6% from normal is taken as an indication of illness. An elaborate system of scoring, with mathematical charts, is used to determine effects of exposures. A program of preventive medicine is built up on that basis. The authors minimize the importance of chemical and engineering control. They admit that air analysis is important in determining the mechanical efficiency of operating equipment and ventilating systems, but believe that the present tendency is to rely too much on air analyses and safe-level concentrations of gases, vapors, fumes or dusts. In important cases injuries arise from absorption of materials through the skin rather than by inhalation. The unorthodox beliefs and methods of the authors merit further study. The elaborate system of rating and control has apparently been of great value in their hands, but it will be known whether it is a really valid technic only after it has been used by many physicians and under varying industrial conditions.

40 Toxicity of Dichlorobenzene. Queries & Minor Notes. J. Am. Med. Assoc., 117, 2017 (December 6, 1941).
It is asked whether there is danger in the use of dichlorobenzene in closets which are frequently opened, and whether it is carcinogenic. Paradichlorobenzene is extensively used in therapeutics, in agriculture and in preserving clothing, and

it is only recently that its toxic possibilities have become of interest. Reference is made to the recent work of Berliner (Abstract No. 266, March, 1940 Digest) who found cataracts and serious toxic effects to follow inhalation of paradichlorobenzene vapor. Confinement in a close space with high concentrations may cause deleterious effects but there is no evidence that occasional short exposures may cause untoward reactions. When used as a spray, the solvent may be carbon tetrachloride, benzene, chloroform and carbon disulfide, the dangers of which are known. Present knowledge does not indicate dichlorobenzene as being a carcinogenic agent. A case of dermatitis from orthodichlorobenzene has been reported (see Abstract No. 768, October, 1939 digest). Although the hazard from the dichlorobenzenes is apparently slight, industrially or otherwise, they might well be watched carefully in view of their chemical constitution and widespread use under varying conditions.

41 Changes in the Reactivity of the Body Caused by Hydrogen Sulfide. S.M. Pavlenko. Arch. sci. biol. (U.S.S.R.) 60, No. 3, 55-64 (1940). (Russian).
Various doses of hydrogen sulfide (300 mg. per l. of saline solution) were injected into the blood stream of rabbits. The effects on blood pressure are produced via the vasomotor center. Hydrogen sulfide causes a brief lowering of blood pressure, previously raised by adrenalin, which later returns to the high level. It prolongs the pressor action of adrenalin. Preliminary doses of hydrogen sulfide markedly strengthen the pressor action of subsequently administered adrenalin. Small doses (1cc.) of hydrogen sulfide raise the reactivity of the animal to subsequent doses of potassium chloride. Hydrogen sulfide increases the vagus sensitivity to electrical excitation. Preliminary treatment with hydrogen sulfide of sensitized animals intensifies the anaphylactic shock, and the effect is lethal in more cases than in controls. The reaction of vegetative centers to hydrogen sulfide varies according to their initial physiological state.

42 Human Life and Death at High Pressures. J.B.S. Haldane. Nature (London) 148, 458-460 (October 18, 1941).
The subject is discussed mainly with reference to escape from a submarine, but most of the paper is also of industrial interest. The subjects discussed are: mechanical effects, nitrogen intoxication, carbon dioxide intoxication, oxygen intoxication, after-effects of carbon dioxide, bubble formation during decompression, and cold. Nitrogen is a narcotic at pressures of 10 atmospheres and higher. Argon is more narcotic than nitrogen, but the higher inert gases have not been investigated. Helium and hydrogen are not narcotic, but it is probable that they would be so at 20 atmospheres. Carbon dioxide in the normal percentage in air causes unconsciousness at 10 atmospheres. Oxygen is a convulsant at 7 atmospheres. Bubble formation is a hazard that has been known for some time. It can be avoided if the decompression is conducted slowly. There is much individual variation in the safe speed of decompression. The author regards helium as of value in avoiding nitrogen intoxication, but is doubtful of its value against "bends." This failure, which is supported by his experience, throws some doubt on current theories on the cause of "bends." The problem demands a systematic experimental study with a number of gases.

43 Dark Adaptation and Miner's Nystagmus. I. Campbell. Brit. Med. J., 2, 726-727 (November 22, 1941).
Night blindness has long been known to be a characteristic symptom of miner's nystagmus. A series of observations show that in a selected group of miners, a deficiency of vitamin A, as demonstrable by the dark-adaptation test, was present, and by the administration of vitamin A over a limited period the power of dark adaptation was considerably improved.

44 Benzene Hazards to Workers in Vulcanizing Shops for Tire Repairing. K. Humperdinck. Zbl. f. Gewerbehyg., 28, 66-68 (1941). (German).
In recent decades many small workshops for tire repairing have opened. (The author is writing about Germany, but the same conditions apply here and probably will to a greater extent.) They are frequently established in unsuitable rooms and various solvents for the solution of rubber are employed. Some of the rubber solutions contain small amounts of benzene, and the solvents themselves often contain as much as 90% benzene. The author examined workers from some of these establishments and found, especially among those exposed to benzene, several workers with a high relative lymphocytosis, positive Rumpel-Leede symptoms, and complaints of nervousness and irritability. He recommends the use of benzine (naphtha, low-boiling gasoline) instead of benzene, better ventilation and periodic medical examinations.

45 Studies with Paraphenylenediamine in Fur Workers. M.G. Silverberg and H.Heimann. Jour. Invest. Derm., 4, 193-203 (1941). Abstr. from Biol. Abstr., 15, 2019 (November, 1941).
Scratch and patch tests with paraphenylenediamine and related dyes and scratch tests with animal epidermals were performed on 10 asthmatic fur workers, only one of whom also gave a history of dermatitis. Eighty-five fur workers without asthma, including 10 with a history of occupational dermatitis, were patch-tested as controls. Glycerinated protein extracts of fur and danders (horse, cat, muskrat, squirrel, rabbit, racoon, dog, goat, skunk, beaver, sheep) and paraphenylenediamine (dissolved in serum and in water in various concentrations) were used for scratch tests. For patch tests 2% paraphenylenediamine in vaseline was used. Scratch tests with paraphenylenediamine in the asthmatics were all negative. In 1 of 10 asthmatics, scratch tests with animal epidermals (cat and beaver) were positive. Four of the asthmatics, only 1 of whom gave a history of dermatitis, reacted by patch test to paraphenylenediamine. In the control group 8 of 10 workers with a history of occupational dermatitis reacted to the patch tests with paraphenylenediamine. No such positive tests were found in fur workers without a history of asthma or occupational dermatitis. In asthma possibly due to paraphenylenediamine the scratch test gives no evidence of hypersensitivity but a number of asthmatic fur workers without a history of dermatitis react to the paraphenylenediamine patch test.

46 Hypersensitivity to Turpentine and its Substitutes. W. Schmidt. Dermatol. Wchnschr., 112, 369-390 (1941). (German).
Turpentine substitutes differ so widely that any test of sensitivity should be made with a sample of the suspected material and not with any laboratory samples. The author found that of 59 persons suffering from eczema with positive reactions for turpentine or its substitutes, 3 reacted positively to turpentine alone, 3 to substitutes alone, but the remaining 53 reacted to both.

47 The Occurrence and Prevention of Occupational Diseases among Women, 1935 to 1938. M.T. Mettert. U.S.Dept. of Labor Women's Bureau, Bull. No. 184, 1941. Price 10¢.
The material presented, derived from agencies of 9 States, gives a fairly good idea of the range of occupational diseases among women. It is difficult, however, to compare conditions in the reporting States. More days are lost on account of illness by women than by men, and since their wages are lower, compensation awards to women are lower. As among male workers, dermatitis is the commonest industrial disease, and caused by a number of materials. Repetitive motion causes tenosynovitis, felons and bursitis. Lead poisoning is widespread; systemic poisoning due to benzene, radium, hydrofluoric acid, corn, dyes and gas fumes were reported. Other diseases reported were chrome ulcerations, silicosis, asbestosis and heat stroke. Some of the special surveys and studies in single industries are reviewed briefly. As the number of industrial hygiene units increases, more data on occupational diseases of women will be available.

48 Pounds of Prevention. R.E. Kelly and L.A. Watt. Monsanto Mag., 22, 16-19 (December, 1941).
The paper is an exposition in a popular style of the toxicological work conducted by Monsanto Chemical Company on new products so that injury which might otherwise occur may be prevented. The principal toxicological work for the company is performed at various leading universities which are mentioned as is also the work of the National Institute of Health. The concluding paragraph is worth repeating: "In its toxicological investigations, industry comes closer to being noncompetitive than in any other phase of its operations. There is a free exchange of information between the workers at DuPont's Haskell Laboratory, the Dow Chemical Company toxicologists, the Carbide and Carbon group at Mellon Institute and various other agencies, all of whom are working toward a common end. This end is to advance the frontier of our understanding and to pave the way for better use of the products which flow from the research laboratories."

49 Some Common Health Hazards in the Electroplating Industry. H.G. Dyktor. Monthly Rev. Am. Electroplaters' Soc., 27, 597-610 (1940).
The health hazards involved in chromium plating, solvent degreasing, lacquering, pickling and in polishing operations are discussed. For safety, the concentration of chromium trioxide in the air should be below 1 mg./10 cu. m. If the chromium plating tanks are ventilated by slots, the air velocity should be at least 1500 feet per min. The risk of silicosis is discussed, and it is concluded that it is slight among metal polishers.

50 Observations on Orthodichlorbenzene. H. Riedel. Arch. f. Gewerbepath., 10, 546-549 (1941). (German).
The author found orthodichlorbenzene to be very irritating to the human skin. Mice, exposed to an atmosphere saturated with the substance, became excited and died on the following day. Rats died after a few paintings of their abdomens with it. However, a large dog showed no abnormal results after 2 weeks' exposure where 2 cc. orthodichlorbenzene was spread daily for 2 hours. Vapors blown near a flame yielded chlorine and perhaps also phosgene. These results indicate the danger in using orthodichlorbenzene as a solvent.

51 Acute Poisoning from Aniline Oil. G.R. Benton and C.J. LaBarge. Ind. Med., 10, 556-559 (December, 1941).
Commercial aniline oil is a mixture of aniline, toluidine, nitrobenzene and other benzene derivatives. It is extensively used in manufacturing processes and is often encountered as an active ingredient of shoe dyes, hair dyes, insoluble marking ink, lithograph ink, mimeograph ink and floor polishes. Most cases of acute poisoning from aniline oil result from direct absorption through the unbroken skin. Symptoms in severe cases include dark blue cyanosis of the skin, a slow bounding pulse, booming heart sounds on auscultation, symptoms of air hunger, sometimes nausea and vomiting, very low blood pressures, and sudden and extreme prostration. Convulsions sometimes occur. The toxic dose cannot be estimated as there is no formula for measuring the index of absorption. Use of alcohol tends to facilitate absorption. Most cases occur as a result of accidental contact with shoe dyes or marking inks or the ingestion of contaminated liquor. A case is reported in detail in which a soldier suffered severe aniline poisoning as the result of a practical joke. Three days in an oxygen tent greatly assisted recovery, which was complete in 13 days. The clinical pathological changes may be grouped as follows: (1) the excessive formation of methemoglobin with a resulting cyanosis and anoxemia; (2) the effects of the anxemia and of the aniline and nitrobenzene upon the central nervous system; and (3) the hemolytic effect of the nitrobenzene upon the cells of the circulating blood. Oxygen therapy and transfusion are the best forms of treatment. Aniline spots on the skin may be removed by 5% acetic acid followed by a lukewarm shower bath. Intravenous fluids, particularly 10% glucose in normal saline, favor the elimination of aniline and nitrobenzene from the blood stream.

52 Undulant Fever in Packing House Employees. N.Y. City Dept. of Health Quarterly Bulletin 9, 77 (November, 1941).
The report to the Department of Health during 1941 of four cases of undulant fever among 220 employees of one of the large hog-packing houses was unusual enough to initiate a detailed study of the exact hazards to which these employees are subject. It was found that after the hogs are slaughtered, they were moved to the floor below suspended separately on a movable trolley. On this floor, the carcasses are dipped for a period of ten seconds each into a hot rosin solution. They are then placed on a table where the rosin, and with it, the hair is pulled off manually, leaving the hide clean. All of the cases occurred in employees engaged in this specific rosin method of hair removal. In a similar establishment employing approximately the same number of workers where the steam method of hair removal is being used, no cases have been reported. Inquiry throughout the country to determine whether similar experiences with the rosin method have been reported indicates that no such hazard has yet been noted, although this method of hair removal, because of its rapidity and efficiency, is widely used.

53 The Resistance of Rats to Nitrochlorobenzene under Various Conditions of Diet. II. Y.A. Levin and S.M. Dubashinskaya. Bull. biol. med. exptl., U.S.S.R., 6, 664-666 (1938). (Russian).
Rats poisoned by nitrochlorobenzene (mixture of o and p compounds) were found to recover to a much greater extent on a meat diet than on one of bread. The meat diet reduced the fall in temperature caused by the poisoning.

54 Is there a Connection Between the Benzpyrene Content and the Carcinogenic Effect of Tar? G. Miescher and others. Schweiz. med. Wchnschr. 71, 1002-1007 (1941).
The authors examined the benzpyrene content of gas tar in various Swiss towns. The tars were then purified and their carcinogenic effect was determined by painting on mice. The investigators then used a statistical method to evaluate the results, in order to overcome the difficulty that many mice die in the long period needed for the experiments. They find a simple, regular relationship between the benzpyrene content and the carcinogenicity of the tar.

55 Toxicity and Actions of Trimethylene Glycol. W. Van Winkle, Jr., J. Pharmacol., 72, 227-232 (1941).
The acute and chronic toxicity of trimethylene glycol for rats is about twice that of propylene glycol. Cats are more sensitive, and rabbits are less sensitive, than rats. Trimethylene glycol showed no glycogenic action in rats. It is quite unsuitable for use as a solvent in food and drug products.

56 Flake Naphthalene and Aural Symptoms. Queries & Minor Notes. J.Am.Med.Assoc., 117, 1222 (October 4, 1941).
A case is reported in which an employee packing clothing had hissing noises in his ears, but hearing was normal. The question whether naphthalene might be responsible is practically answered in the negative. The only known ill effects have been limited to manipulation of naphthalene in the hot or molten states or in high concentrations. Naphthalene has been too widely used in flake form for any effects such as that described to pass unnoticed.

57 Effects of Synthetic Resins. Queries & Minor Notes. J.Am.Med.Assoc., 117, 2018 (December 6, 1941).
An employee of a company using Plaskon molding compound complains of a dry cough. Bronchitis and other respiratory inflammations have occurred in hotmolding work, probably on account of evolution of formaldehyde. Dermatitis is the best known of injurious actions, although cases are infrequent compared to some other plastic resins.

58 Toxicity of Nitroparaffins in Paint Removers. Queries & Minor Notes. J.Am.Med. Assoc., 117, 976 (September 13, 1941).
A paint remover used by the Air Corps contains 25% nitroethane, the remainder being ethyl alcohol, ethyl methyl ketone, ethyl formate and toluene. Information on toxicity, especially of the nitroparaffins is requested. The reply states that all the given constituents, except ethyl alcohol, may be harmful under some circumstances. Ethyl formate is rated as a minor skin irritant and no safety limits can be fixed. The conclusions reached by recent investigators on the toxicity of nitroethane, methyl ethyl ketone and toluene are summarized briefly.

59 Carbon Tetrachloride Poisoning and Muscular Atrophy. Queries & Minor Notes. J. Am. Med. Assoc., 117, 1367 (October 11, 1941).
One of three employees of a dry cleaning establishment who suffered from carbon tetrachloride poisoning and recovered, has developed a classic case of spinal muscular atrophy. There was no sensory disturbance and the spinal fluid was normal. Information is requested on the possibility that the condition may be the result of the tetrachloride exposure. No similar case can be found on record which can be attributed to carbon tetrachloride, although nervous forms with polyneuritis have followed liver injury from that chemical, and changes in the optic and sciatic nerves have been observed in rats and monkeys after prolonged exposure. If all other possible causes can be excluded and symptoms and signs persist, the possibility of carbon tetrachloride exposure being the exciting cause cannot be excluded although it would be extremely unusual.

60 Some Pharmacological Properties of the "Tergitol" Penetrants. H.F. Smyth, Jr., J. Seaton and L. Fischer. J. Ind. Hyg. & Tox., 23, 478-483 (December, 1941).
"Tergitol" penetrants are sodium alcohol sulfates of high surface activity which are widely used industrially, especially in textile technology, to obtain spreading and penetration of aqueous solutions. Their toxicity was studied by means of animal experiments. They have only moderate toxicity in single doses, and in the usual effective concentration of 0.05 to 2% their acute toxicity is of no importance. A large excess taken by mouth irritates the digestion tract and affects the kidney. In repeated doses the "Tergitols" have slight cumulative action, being somewhat more injurious than castile soap and somewhat less so than sodium lauryl sulfate. Their chief site of attack is the kidney. On the skin and mucous membranes, the action of "Tergitol" is similar to liquid soaps and somewhat less than that of some other wetting agents.

61 Formaldehyde. Queries & Minor Notes. J. Am. Med. Assoc., 117, 1834 (November 22, 1941).
The inquirer requests elucidation of some points in the earlier reply entitled "Masks for Protection against Formaldehyde Gas," (Abstract No. 784, September, 1941). Bronchitis and other mucous membrane irritations have been suspected but never actually proved, to be caused by formaldehyde. As far as can be determined, if good ventilation exists and if the concentration of formaldehyde does not exceed 0.025 mg. per liter or 20 parts per million during the entire work period, the worker will not suffer any harmful effects even though he does not wear protective masks. That concentration is higher than can easily be obtained when there is ventilation. Special protective masks are advised when cleaning out tanks when the ventilation is poor. Paraformaldehyde has the same effect as formaldehyde, so far as indicated by available information. As regards cutaneous injury, formaldehyde is a strong sensitizing agent, and 5% is usually the upper limit for patch tests. Irritations may vary from extensive vesicular dermatitides in more sensitive, to dryness, thickness and fissuring of the skin in less sensitive individuals.

62 Health Hazards in Fur Garment Making Shops. M.M. McMahon. N.Y. State Dept. of Labor, Ind. Bull., 20, 299-302 (October, 1941).
Nearly all fur garment shops are in tenant factories, and the trade is even more diversified than the dyeing and dressing industry. The garment shops covered in the survey employed 5 to 200 people and handled many kinds of fur. The principal preventable hazard is dust, which is released with hair and fuzz in nearly all operations, which include cutting, operating (sewing), finishing, hand or machine beating, drumming, cleaning or blowing, clipping, brushing, combing and steam glazing. Other hazards are exposure to dyes in tipping, i.e., brush dyeing the skin, and to oils, naphthalene and paradichlorbenzene. Sanitary conditions in general are not very good. Recommendations include exhaust ventilation, respirators, general good housekeeping and cleanliness. A detailed report of the medical findings on physical examination will appear later, but it can be said at this point that there is no higher general incidence of disease in fur workers, either in garment making or in dyeing and dressing, than in the industrial population as a whole. Exceptions are exposure to dyes and other chemicals causing dermatitis.

63 Investigations of Professional Deafness in Shipyard and Machine Factory Laborers. B. Larsen. Acta Otolaryngol., Supp. 36, 3-255 (1939). (Danish).
The introduction of pneumatic hand-tools has greatly increased the danger of deafness, long recognized among boiler makers and riveters. The deafness is associated with degeneration of the organ of Corti and a decrease of the number of ganglion cells in the spiral ganglion. Such changes have been produced experimentally in animals. A group of 123 boiler makers who were not subject to other causes of deafness was studied. Extent and degree of deafness increased with advancing age. The outstanding feature of the deafness was reduction of hearing for whisper, but other impairments were present in advanced cases. Improvement was noted in hearing for whisper, after periods of unemployment, even for one day. Suppurations were not found to exert much influence on the degree of deafness. Bone conduction of vibrations can play an important auxilliary part in causing deafness. As regards prevention, ear-plugs and the like are of little value; reduction in noise is the only remedy. The degree of invalidity found due to the deafness was slight.

64 Zinc and Zinc Oxide. National Safety Council. Industrial Data Sheet No. D-Mel2. Nat. Safety News 44, 38-40 (August, 1941).
The principal hazard of zinc and its oxides is metal fume fever. Another problem is fire and explosion if powdered zinc comes in contact with water or acids. Dermatitis from zinc chloride is also a possibility. The symptoms of metal fume fever, most common in brass foundry work, are feeling of general illness, extreme fatigue, severe thirst, leg pains, congestion in the head, dryness and tickling of the throat and respiratory passages, and cough. In severe cases there may be chills and a fever up to 104°F, nausea and vomiting. The disease is not a metal poisoning but the result of dehydration of superficial cells and the absorption of proteins from the dead cells. There is no known form of chronic zinc poisoning. Metal fume fever may also be caused by, finely divided copper, manganese and magnesium. Some workers acquire a considerable degree of immunity. Although the disease is transitory, the possibility of poisoning by lead, arsenic, etc., that may be present as impurities, calls for the usual precautions against hazardous fumes, including local exhaust systems and general cleanliness.

65 Spinal Cord and Peripheral Nervous System in Chronic Manganese Poisoning. A Contribution to the Pathological Anatomy of Manganese Poisoning. H. Voss. Arch.f. Gewerbepath., 10, 550-568 (1941). (German).
The author discusses animal experiments and four cases that have come to autopsy, in their bearing on the question of the effect of manganese poisoning on the nervous system. The results from the small number of cases are inconclusive, and

further research is necessary. There may be a relation between manganese poisoning and amyotrophic lateral sclerosis.

66 Phosphorus (white). National Safety Council. Industrial Data Sheet No. D-Chem. 39. Nat. Safety News 43, 92,94 (October, 1941).
The hazards of exposure to phosphorus are dermatitis or caustic burns due to contact of phosphorus with the skin, and necrosis of the jawbone and general bone changes due to respiration of the fumes. There is also the hazard of acute poisoning if phosphorus is ingested. White (commercially called yellow) phosphorus is one of the more serious industrial poisons. Its use in match manufacture has ceased, but it is used in metallurgy and the manufacture of phosphoric acid, phosphorescent paint, incendiary projectiles and smoke screen shells. Phosphorus in contact with the skin sets up locally a painful lesion that heals very slowly. In acute poisoning, onset is slow, and characteristic symptoms are garlic-like taste, pain in the abdominal region, nausea, vomiting, hemorrhages and hiccoughs. The vomitus is black with a garlic odor and may be phosphorescent. There is usually a subsidence of symptoms followed by relapse, after which recovery or death may take place. Chronic poisoning may produce similar symptoms, with loss of appetite, shortness of breath, soreness in throat and increased susceptibility to bronchial diseases. However, necrosis of the jawbone or "phossy jaw" may be also present. Individuals with sound teeth are about 1/3 lesslikely to contract this disease. Prevention involves cleanliness, not eating, or chewing near phosphorus, physical examinations, exhaust systems and respirators. Phosphorus must always be stored under water, and fireproof construction is necessary. First aid measures include shower baths or other quick washing for skin or eye contacts. Cases of poisoning from ingested phosphorus are rare in industry, but if phosphorus is swallowed, a physician should be called, vomiting should be induced, copper sulfate (2 grams in 100 cc.) and large quantities of water and 5 to 10 cc. of oxidized turpentine should be given -- not milk or white of egg.

67 Factory Smoke Containing Manganese as Predisposing Cause in Epidemics of Pneumonia in an Industrial District. D. Elstad. Nordisk Med., 3, 2527-2533 (1939).
The author presents some preliminary results of his researches into the pneumonia conditions in a Norwegian industrial district. While the district in earlier days was noted for its healthful climate with only rare cases of pneumonia, it has during the past 15 years, since the beginning of the industrial activity, had a pneumonia morbidity 4 times as large as that of the whole country and a mortality 8 times as large. The situation cannot be explained in relation to the social and climatic conditions existing. The bacteriological state, as to the type of pneumococcus, shows nothing unusual. A prophylactic vaccination, started in 1940, has so far not been able to check the epidemics. The industrial products of the place are alloys of manganese produced by electrical melting. This operation gives off a considerable amount of smoke. The smoke contains manganese; an analysis of lung tissue from dissected individuals shows a considerable increase in manganese content.

68 Thallium Poisoning. Dumitrescu-Mante and Ciorapciu. Bull. Soc. med. hop. Bukarest, V; (Roumanian); Med. Klin., 36, 1091 (1940). (German).
In addition to the well-known symptoms of thallium poisoning (polyneuritis, loss of hair, folliculitis, etc.), a series of symptoms originating from the vegetative nervous system are described: sweating in the lumbar region, dryness in the mouth with constant sensation of thirst due to inhibition of the activity of the salivary glands, sinus tachycardia through vagus stimulation, increase in blood pressure, transitory anisocoria and pain in the eyeball, as well as transitory signs of spasmophilia. All symptoms disappeared after injection of vitamin B1, potassium iodide and sodium thiosulfate.

69 Neurasthenia from Mercury (Toxic Encephalopathia or Neurosis)? H. Steck. Rev. méd. de la Suisse rom. 60, 649-655 (1940).
The author has observed about 40 cases of neurasthenia following mercury poisoning, over a period of 10 years or more, and is convinced that the illness is caused by mercury. The chief symptoms are great fatigue, great muscular weakness, especially in the legs, enervation, but first of all pronounced irritability, which may develop to the point of maniacal attacks. Intolerance to alcohol, erethism, mercurial tremor, and Parkinsonism often appear. Deposits of mercury may be mobilized by other poisoning or by infection; in such cases mercury appears in the urine.

70 Toxicity of Orally Ingested Tungsten Compounds in the Rat. F.W. Kinard and J. Van de Erve. J. Pharmacol., 72, 196-201 (1941).
When added to the diets of young rats, tungstic oxide and ammonium paratungstate having an equivalent of 0.5% tungsten, caused the death of 80 and 60% of the rats, respectively. Higher concentrations produced correspondingly higher mortality.

71 Toxicology of Selenium. VI. Effects of Subacute Exposure to Hydrogen Selenide. H.C. Dudley and J.W. Miller. J.Ind.Hyg. & Tox., 23, 470-477 (December, 1941).
After a description of a new sampling device made necessary by the longer exposures, the author reports a study of the effects on guinea pigs of single exposures to hydrogen selenide for 2, 4, and 8 hours. For single 8-hour exposures a concentration of 0.001 to 0.004 mg. hydrogen selenide per liter produced death in 50% of the animals so exposed. In man a concentration of 0.005 mg. per liter is intolerable, producing eye and nasal irritation. At 0.001 mg. per liter no eye or nasal irritation is produced in man, although olfactory fatigue is so rapid that the odor quickly disappears. Pathological findings indicate that the initial pulmonary irritation of exposure to low concentrations of hydrogen selenide is sufficiently damaging to cause pneumonitis, which may persist in a subacute form. The early liver damage (fatty metamorphosis) subsides, while the spleen changes progress to a remarkable degree.

72 Acute Lead Poisoning. An Experimental Contribution to the Question of the Toxicity of Lead Compounds by Quantitative Experiments. G. Tartler. Arch. f. Hyg., 125, 273-292 (1941).
The author poisoned guinea pigs by oral doses of lead compounds increased daily in such a way that death occurred after 4½ days when the most poisonous was used. If the minimum lethal dose is taken as a measure, the following decreasing scale of toxicity was established: lead nitrate, chloride, lactate, red lead, oleate, carbonate, stearate, sulfide and sulfate. Lead phosphate was found to be non-poisonous. In poisoning from lead carbonate, extremely severe cramps were the dominating symptom. Examination of the organs showed that the lead content of the whole brain of poisoned animals never exceeded the normal (10 gamma), even when death occurred. The lead content of the liver increased quickly and markedly, while that of the bones increased much more slowly and with greater individual variations.

73 Manganese. F.L. Smith, 2nd and T.K. Rathmell. The Cyclopedia of Medicine Surgery, and Specialties. F.A. Davis Co., Philadelphia, Pa. (1939).
A review covering physiological action, pathology, and toxicity of various compounds. Pharmaceutical preparations and dosage are included.

74 Production of Tumors by Tobacco Tars. C.M.Flory. Cancer Res., 1, 262-276 (1941).
Groups of rabbits were painted on the ears with three tobacco tars, one produced by the destructive distillation of tobacco at 350-700°C., another produced similarly at 130-350°, and the other obtained by smoking tobacco in pipes. With each of the tars, tumors were produced in all or nearly all the rabbits. Mice were found less sensitive.

75 Onychia and Dermatitis in Worker with Cleaning Fluids. Queries & Minor Notes. J. Am. Med. Assoc., 117, 2252 (December 20, 1941).
A case of onychia, most severe on the thumbs, associated with a rash on the hands is described. The patient had formerly handled a solvent used in the cleaning business. After the dermatitis occurred, he was careful not to come in contact with the solvent, and his condition improved. The question was whether inhalation of the fumes would keep the inflammatory process active. In the reply the action of such solvents is described, and it is agreed that onychia, a nail change of a dystrophic type, often arises from dermatitis, and apparently exposure to the solvent was a factor. The possibility of fungous infection is also suggested. Preventive and protective treatment is recommended. Inhalation of the solvent does not cause such a condition.

76 Epidermophytie Interdigitalis in Miners. C.Carrie and H. Zantopf. Dermat. Wchnschr. 112, 315-321 (1941). (German).
Statistics on the fungus disease epidermophytia are presented. Its incidence is rather high among miners; the authors found 33% of underground mine workers affected in a particular German mining district. A percentage of 57.1 has been reported among workers in a Japanese spinning mill. The workers pay no attention to the skin affection, which the authors believe to be caused by the moist and hot mine atmosphere.

77 Onycholysis in Fur Workers. H. Heimann and M.G. Silverberg. Arch. Derm. & Syph., 44, 426-428 (September, 1941).
Onycholysis consists of a separation of the nail from the nail bed and its ultimate loss, with regrowth of a new nail, which may also become involved. It is generally considered rare, but in a study of the fur industry recently completed by the Division of Industrial Hygiene of the New York State Department of Labor, the disease was found in 70 of 91 fur fleshers. Erosion of nail plates was also seen in some workers. There was no complaint of pain or discomfort except after returning to work after an absence. The condition is not disabling but is disfiguring. No relation was found between the degree of onycholysis and the length of continuous employment. None had an infection of the finger nails or dermatitis. Of the 70, 33 had more than 3 fingers affected. Prevention is dependent on the use of tools instead of finger nails in removing the corium from the fur pelt. Gloves are not feasible for this work because they materially impair efficiency. The disease occurs in some other industries and may be caused by constant wetting of the hands in brine and by mechanical trauma.

78 Treatment of Skin Injuries from Hydrofluoric Acid. F. Flury. Draeger-Hefte, No. 206, 4398 (1940). (German).
The treatments recommended are long-continued washing with much water followed by repeated rubbing with magnesia-glycerol paste. In severe cases the injection of 10% solutions of calcium gluconate is recommended. All cases should receive the usual medical after-treatments. The nature and mechanism of hydrofluoric acid burns are described.

79 Phenyl Mercuric Oleate. Skin Irritant Properties. C.P. McCord, S.F. Meek and T.A. Neal. J. Ind. Hyg. & Tox., 23, 466-469 (December, 1941).
A laboratory investigation of the skin irritating properties of phenyl mercuric oleate, an industrially used wood preserving agent, indicated its capacity to produce skin irritation in both human beings and animals, below, at, and above the industrially used level of 0.2%.

80 Dermatitis from "Dic-a-Doo." Queries & Minor Notes. J. Am. Med. Assoc., 117, 188 (July 12, 1941).
A skin eruption after use of a paint cleaner called "Dic-a-Doo," is attributed largely to its alkaline constituents, trisodium phosphate and sodium carbonate.

81 Trauma and Cutaneous Cancer. C.L. Levin and H.I. Behrmann. Ind. Med., 10, 519-525 (December, 1941).
The author reviews the subject of cutaneous cancer, especially in its industrial aspects and its relation to trauma. There are few types of cancer that do not show a relationship to some form of pre-existing trauma. Whether malignancy can occur following a single injury to a part is a debatable subject but a very important one legally. There has been no increase in cancer attributable to industry as a whole, but an increase has occurred among those working with tar, petroleum, radium and derivatives. After presenting the history of experimental cancer, the authors list injuries that may result in cancer: (1) physical, including heat, light, electricity, roentgen rays and radium; (2) mechanical, including friction, pressure and direct injury; (3) chemicals, especially carbon disulfide, arsenic compounds, soot, coal tar, and petroleum. Cancer from the first two chemicals is rare. The composition of tar and petroleum in relation to cancer is discussed, the principal carcinogenic constituents of tar being dibenzanthracene, benzopyridine and pyridine, and of petroleum the aromatic-hydrocarbons. All these causes vary in their effect on individuals, and the factors of age and immunity must be taken into account. The medico-legal aspects are discussed briefly, regarding accidental injury as a cause of cancer and injury aggravating and accelerating cancer, both of which are recognized legally. Among preventive measures the most important is cleanliness. Protective ointments are of value. Pre-employment examinations should exclude those with a history of skin or allergic conditions. Curative treatment must begin early and depends on the type of cancer. Cleansing measures, bland local remedies, change of occupation, roentgenotherapy and radical therapy have their places according to the severity of the disease.

82 A Comparison of the Carcinogenic Effects of Tobacco Tar and Coal Tar. A.H.Roffo. Bol. Inst. Med. Exp., (Buenos Ayres). 17, 699-730 (1940). (Spanish).
Coal tar and tobacco tar, painted on the ears of rabbits, produce similar cancerous lesions, with a difference consisting only in the greater activity, and therefore greater malignancy, of those produced by tobacco tar.

83 Dermatitis Venenata Due to Nail Lacquer. E.D. Osborne, J.W. Jordon and P.C. Campbell. Arch. Derm. & Syphilol., 44, 604-615 (October, 1941).
Nail lacquers are highly complex mixtures containing many ingredients which are potentially eczematizing. Similar lacquers are widely used in industry and are applied to the surface of many objects in common usage. Their importance as eczematizing agents should not be overlooked. Dermatitis due to nail lacquer is common and will probably become more so, especially in men. Nail lacquers are the most frequent cause of dermatitis about the eyelids in women and should be considered as possible causes of dermatitis of the face, neck, cheeks, ears, ear canals, shoulders, chest and lips. In all cases of dermatitis of obscure causation nail lacquer should be suspected and eliminated. This form of dermatitis is usually of a patchy erythematosquamous (red and scaly) variety. Macroscopic vesiculation (visible pimples) is the exception rather than the rule. Patch tests in cases of dermatitis due to nail lacquer are of doubtful value. They should not supplant careful clinical observation.

84 Experimental Phosgene Poisoning. E. Rothlin. Reported in letter from Switzerland. J. Am. Med. Assoc., 117, 1638-1639 (November 8, 1941).
In experiments on rats the author found that in phosgene poisoning calcium therapy must be instituted and calcium must be given in large doses. Earlier investigators considered the lungs a barrier to phosgene, but the present experiments do not support this idea. A component of the central nervous system must be assumed to be the cause of pulmonary edema as well as a pulmonary reflex with the vagus and the sympathetic. The experiments also indicate that phosgene is not as easily neutralized in water as was formerly held.

85 Dermatitis from Cutting Oils. L. Schwartz. Pub. Health Repts., 56, 1947-1953 (October 3, 1941).
The composition of cutting oils, their action on the skin, types of dermatitis, prevention, differential diagnosis and treatment are briefly discussed. The action of the oils on the skin includes defatting, clogging the pores, and sensitization by rancid vegetable or animal oils, phenols, cresols and nitrobenzene. Steel slivers in used oils may wound the skin. Folliculitis and other infective dermatoses are often the result of exposure to cutting oils, but the author believes that the bacteria responsible come from the skin, not from the oil. Pathogenic bacteria do not grow in most cutting oils. Some mineral oils produce keratosis, and a few cases of skin cancer in the United States have been caused by mineral oils. Allergic eczemas are the least frequent types of cutting oil dermatitis, and are caused by hypersensitivity to the animal or vegetable oil or inhibitor, or by allergy induced by the disinfectant which is added when the oil becomes rancid. Dermatitis may also be caused by harsh soaps, bleaches and solvents used in washing hands after work. Cleanliness is the most important item in prevention; protective ointments are desirable but are of secondary importance. Workers using cutting oils should be instructed in the hazards. Cutting oil folliculitis and boils must be distinguished from similar disturbances of non-occupational origin. They are treated by cleanliness and antiseptics. Allergic types are best handled by removing the affected worker. Antiseptic lotions should be used for the moist types of dermatitis and ointments for the dry, chronic types.

86 Fulminate of Mercury. National Safety Council. Industrial Data Sheet D-Chem.40. Nat. Safety News 44, 38, (December, 1941).
In the manufacture of fulminate of mercury, the principal hazards are the possibility of nitric acid burns, mercury poisoning, dermatitis, fire, explosion, and possible illness from the fulminate of mercury. During the manufacture of percussion caps, the hazards are dermatitis, systemic poisoning, fire and explosion. The processes of making the fulminate and the caps are described. Fulminate workers have shown local symptoms of the skin, constitutional disorders such as inflammation of the mouth (stomatitis), headache, nerve troubles, and blackening and brittleness of teeth. The systemic effects are those generally caused by mercury. Protective measures include good housekeeping and cleanliness, no dry sweeping, ventilation, protective clothing, powder uniforms, and removal of affected workers. Precautions against fire and explosion must be observed.

87 The Relation Between the Chemical Composition of War Gases and Their Physiological Action. S. Wiedling. Svenska Laekartidn. No. 51, 6 pp. (1940).
The irritating powers of tear gases increase with the atomic weights of the halogen used, but the toxicity values are in the reverse order. Increasing the number of halogen atoms already present in a molecule decreases the tear potency and increases the toxicity of some tear gases. Examples of each case are given, and a list of 9 war gases containing arsenic is included. Mono-and dichloroformoximes are so-called "nettle gases." They are extremely effective lachrymatory gases, frequently causing blindness.

88 Investigations of Poisoning by Trotyl, Tetryl and Fulminating Mercury Among Workers in the Munition Factories of Finland. L.Noro. Acta med. Scandinav., Supp. No. 20, 95 pp. (1941).
The author reviews the literature and experience of the first World War and then reports on his own investigations after the Finnish-Russian war, involving over 500 workers in munitions plants. In general the symptoms were the same, whether the exposure was to trotyl (TNT), tetryl (tetranitromethylaniline) or fulminating mercury. Skin diseases were common, especially in the early history of exposure. After a longer period, loss of weight, fatigue and headache appeared. Anemia was present in 109 persons, mostly in a slight degree. Illnesses and complaints were less numerous in a well equipped factory.

89 The T.N.T. Health Hazard. H.M. Roberts. Brit. Med. J., 2, 647-649 (November 8, 1941).
The manufacturing process and forms of T.N.T. (trinitrotoluol) are briefly described. Exposure may consist of (1) inhalation of fume, (2) inhalation of dust with subsequent ingestion, and (3) skin absorption. Signs of absorption include staining of the skin, pallor, color of the lips, not blue as in cyanosis, but rather lilac. Among symptoms of poisoning are jaundice, nausea and headache, and constriction below the sternum. References are given to fuller description of symptoms, pathology and treatment. A schedule for control of the hazard includes: (1) selection of workers; (2) record of physical condition on entry; (3) record of sick absences; (4) periodic examination for signs of T.N.T. absorption; (5) record of T.N.T. strains in grades; (6) cooperation with the plant chemist in carrying out the Webster test; (7) arrangements with foremen and supervisors to call attention to possible cases; (8) insistence on cleanliness and protective clothing; (9) other work for those that must be laid off. Each point is discussed.

90 Clinical Manifestations of Tetryl and Trinitrotoluene. J. Hilton and C.V. Swannton. Brit. Med. J., 2, 609-610 (October 11, 1941).
Both materials stain the skin a deep orange, but the staining has no relation to toxicity. New workers complain of tingling of the nose and sneezing, which passes off with exposure. Dermatitis is common with tetryl workers, starting as erythema followed by a papular eruption accompanied by exfoliation. The face is particularly affected with gross edema of the eyelids, but other parts may also be concerned. Constitutional symptoms are rare but epigastric pain, nausea and vomiting sometimes occur. Removal from exposure is followed by recovery, after which immunity is established, and exposure may be resumed without trouble. On the other hand, T.N.T. is highly toxic, in addition to causing dermatitis. The latter may appear in the form of a sago-grain eruption, for instance between the fingers. Desquamation may be severe with complete exfoliation of hands and feet. Irritation is intense. T.N.T. reacts with hemoglobin to form methemoglobin and nitric oxide hemoglobin; hence cyanosis with grayish-mauve lips, tongue and mucous membranes. Toxic gastritis may develop, with epigastric pain, nausea, anorexia, and constipation; such cases should be permanently removed from contact with T.N.T. Rare late and usually fatal complications are jaundice and aplastic anemia. With reasonable care all these effects may be avoided.

91 Ozone in Ventilation and Air Conditioning. J.A. Robinson. Heat., Pip., & Air Cond., 13, 759-760 (December, 1941).
The author describes, with illustrations, an ozonator in which only corona discharge is used, according to the method advocated by Thorp (Abstract No.92, this digest), and which produces ozone free from oxides of nitrogen. The author reports three cases in which he claims that industrial odor problems have been solved by the use of this ozonator and that the odors have been destroyed and not merely masked.

92 Influence of Nitrogen Oxides on the Toxicity of Ozone. C.E. Thorp. News Ed. (Am. Chem. Soc.) 19, 686-688 (June 25, 1941).
Ozone produced by the common metal-glass-metal type of ozonizer using a brush-type discharge contains 4% nitrogen oxides. An ozonizer using a phenol-formaldehyde plastic as the dielectric produced ozone containing no nitrogen oxides. Physiological tests were made on humans, field mice, B.coli aerogenes, flour weevils and green algae.

93 Influence of Nitrogen Oxides on the Toxicity of Ozone. A.W. Ewell. News Ed. (Am. Chem. Soc.) 19, 1102 (October 10, 1941).
The author's criticism of Thorp's paper, (Abstract No. 92, this digest) and the latter's reply immediately following, deal with a number of points but do not

throw light on the question whether ozone, with or without oxides of nitrogen present, has sufficient sterilization value except at concentrations at which it is potentially injurious, or at least disagreeable, to human beings.

94 Occupational Dermatitis. F. M. Castineau. J. Indiana State Med. Assoc., 34, 184-187 (1941).
A discussion of dermatitis, especially occupational dermatitis in Indiana. Cases of dermatitis caused by nail polish, mercury and the new mercury compounds, picric acid, cinnamon and chocolate, Brazil nuts, lacquer, chromic acid and red rubber are described.

Methods of Detection and Determination

95 Determination of Lead in Biological Material. A Polarographic Method. J.Cholak and K. Bambach. Ind. Eng. Chem., Anal. Ed., 13, 583-586 (August, 1941).
A polarographic method is described for the estimation of lead in biological material, based on electrolytic isolation and concentration of lead, followed by stripping into very small volumes of solution. Two methods of concentration are presented: (1) a purely electrolytic technic, and (2) an initial dithizone concentration, followed by electrolytic concentration when very small quantities of lead are present. An adaptation from spectrographic analysis of the internal standard principle permits the deviation of stable working curves, which are not affected by variations in temperature, drop size or rate, viscosity or composition of the solution to be polarized, or by changes in the recorder sensitivity used. The accuracy and practical sensitivity of the method approach those of the spectrographic and dithizone methods.

96 Applications of the Spectrograph to Toxicological Investigations. C.W. Rankin. J. Optical Soc. Am., 31, 644-647 (1941).
The spectrograph has long proved its value in forensics involving bullet traces, paint analysis, etc., but its applicability to the study of metallic traces where much organic material is present, i.e. to toxicological investigations, has rarely been tested. Toxicological cases are described in which animal tissues, etc., are successfully analyzed for arsenic, lead, barium, phosphorus or mercury by spectrographic methods.

97 An Aid in the Dithizone Method. A Mechanical Shaker for Separating Funnels. L.R. Crisp and S.H. Webster. J. Lab. and Clin. Med., 27, 269-270 (November, 1941).
A mechanical shaker which expedites analysis and provides more uniformly vigorous shaking in dithizone tests for lead is described.

98 The Determination of Lead in Biological Materials. F.L. Smith, 2nd and others. Am. J. Clin. Path., 11, 663-668 (August, 1941).
In this paper the authors correlate their earlier work and include recent changes in the dithizone procedure for lead in blood, spinal fluid, urine, tissue and bones. Reagents, cleaning procedures, specimen collection and lead determination are described. The method consists essentially of a wet digestion of the sample, extraction with dithizone and a titrimetric end point. The superiority of wet digestion, in the authors' opinion, lies principally in the time required for complete oxidation.

99 The Significance of Urinary Mercury. I. Occupational Mercury Exposure. II. Mercury Absorption from Mercury-Bearing Dental Fillings and Antiseptics. E.D. Storlazzi and H.B. Elkins. J.Ind.Hyg. & Tox., 23, 459-465 (December,1941).
A modification of Stock's method for the determination of mercury in urine is described. The concentrations of mercury found in the urine of workers in various occupations with mercury exposure were measured and positive results were obtained in nearly all cases. The ratio of urinary to atmospheric mercury (the former being expressed in milligrams per liter and the latter in milligrams per 10 cubic meters) was found to be about 0.26. Mercury was found in the urine of certain persons several months after their exposure had ended. Mercury may be found in the urine of persons with recent amalgam dental fillings or of those who have recently had mercurial antiseptic applied to the skin. After 10 days the urine is usually practically free of mercury. The amounts absorbed are too small to cause poisoning.

100 Bacteriological Air Analysis by the Cloud-Chamber Method. S.D. Elliott. Lancet 241, 514 (November 1, 1941).
The method was developed in order to obtain bacteria in a liquid medium rather than dry as in customary methods. The essential features are the trapping of suspended particles by drawing the sample through a water-vapor mist, and the condensation of water on any particles left in suspension by cooling the saturated air. This method indicated a fairly high degree of atmospheric pollution after spraying the air of a room, in contrast to the settling plate method which gave very low values after spraying.

101 Determination of Benzene in the Air of Industrial Plants. M.V. Alekseeva. Okhrana Truda No.8, 38 (1939). (Russian). Chem. Absts. 35, 6537 (October 10,1941).
Checking of the colorimetric method of Stepanow resulted in the development of a modified procedure, which is given in sufficient detail in the Chemical Abstracts reference.

102 Determination of the Vapors of Organic Compounds in the Air by the Combustion Method. S.L. Ginzburg. Lab.Prakt. (U.S.S.R.) 16, No. 3, 23-27 (1941).
The air to be tested is forced from a gas pipette into a quartz or porcelain combustion tube, 2.5 - 9.0 mm. in diameter, by means of a stream of hot air rather than by the hydrostatic pressure of sodium chloride solution. The tube contains a platinum spiral to serve as catalyst. The content of organic compounds in the air is determined from the carbon dioxide formed by combustion, which is absorbed in a measured volume of standard barium hydroxide solution and the excess is determined by titration with acid to a phenolphthalein end point. Eight references.

103 Determination of Carbon Monoxide with Iodine Pentoxide. R. Kattwinkel. Glueckauf. 77, 22-23 (1941). (German).
An improvement on the apparatus of Winter and Braukmann is described in which the gas is passed through the iodine pentoxide instead of over it and an aluminum-block oven is substituted for the oil bath. A tube of NCT_3 steel is used in place of a quartz combustion tube for holding the copper oxide.

104 New Method of Determining Dichloroethane Vapors in the Air. P.I. Bogatkov. Zavodskaya Lab. 10, 319 (1941). (Russian). Chem. Absts. 35, 7318 (November 10, 1941).
The method is based on the reaction between dichloroethane (ethylene dichloride) and manganese dioxide, which proceeds quantitatively at 300°C. Full directions are given in the Chemical Abstracts reference.

105 Development of a Method for the Determination of Small Amounts of Naphthalene in Air. V.V. Dobrovolskaya. Lab. Prakt. (U.S.S.R.) Sammelband 95-97 (1939). The air is passed through a nitrating mixture at a rate not exceeding 10 l. per hour. This absorbing mixture is poured into water and the deposited trinitronaphthalene is dissolved in ether. The residue left from the evaporation of this ether solution is dissolved in boiling water and the solution is transferred to a tube for colorimetric comparison. One cc. of a solution of 5 drops of 0.2% methyl red corresponds in color to 0.005 mg. of trinitronaphthalene. The changes in the standard solutions within 5 and 10 minutes are tabulated.

106 Colorimetric Method for Determining Small Quantities of Pyridine in Air. R.P. Daroga and A.G. Pollard. J.Soc.Chem.Ind., 60, 207-210 (July, 1941). Chem. Absts., 35, 7883, (November 20, 1941).
The proposed method was developed for the purpose of determining small quantities of pyridine in an air current and in moist soil. After a study of existing methods, an adaptation of Sutherland, Daroga and Pollards method for determining nicotine was worked out. Full details are given in the Chemical Abstracts reference.

107 A Slit Sampler for Collecting and Counting Air-Borne Bacteria. R.B. Bourdillon and others. J. Hyg., 41, 197-224 (September, 1941).
The authors have adopted the principle of the Owens jet dust counter in designing their sampling device. Air is drawn through a slit 0.25 mm. wide, 27.5 mm. long and 3 mm. deep onto the surface of agar or other culture medium contained in a Petri dish placed just below the slit. The Petri dish is slowly rotated during sampling, either by hand or mechanically in such a way that the bacteria are deposited in an annular ring leaving a clear space of 18 mm. diameter in the center. The method is very rapid and simple, and it has appeared to be more efficient than other methods against which it has been tested. The finest bacteria-carrying particles are collected almost as efficiently as coarser ones. Petri-dishes in open air collect the larger particles 200 times as efficiently as the single washed bacteria.

108 Colorimetric Method for the Determination of Minute Quantities of Carbon Tetrachloride and Chloroform in Air and Soil. R.P. Daroga and A.G. Pollard. J.Chem. Ind., 60, 218-222 (August, 1941).
The Fujiwara pyridine test for chloroform has been modified and applied to the determination of carbon tetrachloride. In the determination of carbon tetrachloride in air the vapor is absorbed in 50 cc. of acetone in a fritted bubbler at 1 liter per min. An aliquot portion of this solution is added to 20 cc. of pyridine and 10 cc. of 20% sodium hydroxide, and the mixture is immersed in a boiling water bath and constantly shaken for 5 minutes. After cooling 2 minutes the pyridine layer is separated and its color is read. The color is stable for several hours if the sodium hydroxide layer is separated from the pyridine. The color is much stronger when acetone is used for absorption than when ethyl alcohol is used. The quantities of carbon tetrachloride measured ranged from 0.03 to 0.5 mg. Chloroform is absorbed in 0.05 normal hydrochloric acid, but the rest of the procedure was the same as for carbon tetrachloride. The determination of these substances in soil is also described.

109 Determination of Small Quantities of Nitrogen Oxides. V.V. Dobrovolskaya. Lab. Prakt. (U.S.S.R.) Sammelband. pp. 93-95 (1939).
The content of oxides of nitrogen in the air can be determined as follows: draw the air through 2 wash bottles containing sodium hydroxide and hydrogen peroxide. After the absorption, heat with zinc dust or Devarda's alloy, absorb the liberated ammonia in acid and measure the color produced with Kessler's reagent.

110 An Apparatus for Continuously Measuring and Recording Hydrogen Sulfide and Carbon Disulfide in Atmosphere. W.E. Stackhouse and B. Reynolds. Safety Practice Bull., No. 29. Penna. Dept. of Labor & Industry. 6 pp. (November, 1941).
The hydrogen sulfide recorder consists essentially of three parts: (1) a sampling and absorption system with a reagent; (2) a photoelectric colorimeter with its electrical system; and (3) a potentiometer chart recorder. The range of the apparatus may be varied to suit the application. A tentative range of 0 to 8 p.p.m. has been used for purified distribution gas. The recorder will respond to concentration changes of 0.08 p.p.m. The reagent develops blue-green shades in presence of hydrogen sulfide and is specific for that substance. The intensity is proportional to the concentration, and the color is in the range where the photoelectric cells are most sensitive. The recorder is calibrated by use of color standards made by adding known amounts of a hydrogen sulfide standard solution to definite quantities of the reagent. A number of industrial applications are mentioned. Details of carbon disulfide determinations are not given.

111 The Electron Microscope. J. Millier and H.E. Rhea. Safe Practice Bull., No.87, Penna. Dept. of Labor and Industry. 6 pp. (September, 1941).
The history of the microscope is reviewed briefly, culminating in the invention of the electron microscope. The theory of the electron microscope is presented briefly, and the instrument is described with diagrams and illustrations. It will have numerous applications in industry and medicine in the latter including the study of filterable viruses and other bacteriological fields. The importance to industrial hygiene is indicated in the introduction, by R.L. Houtz. The submicron sizes of silica and other dusts, which are admitted to be among the most dangerous, can be readily studied.

112 Testing for Sensitivity to Dyes. Queries and Minor Notes. J. Am. Med. Assoc., 117, 1056 (September 20, 1941).
An inquiry is made regarding tests for sensitivity to and tolerance of the components of aniline dyes, especially methyl cyanide. Such tests are chiefly limited to cutaneous irritants. Some finished dyes are in that class, but a larger number of irritants are likely to be found among intermediates and basic materials. Patch or contact tests for cutaneous irritants are valuable under many circumstances, but the determination of precise causes of irritation is often difficult. References for directions for patch tests are given and some precautions are mentioned. For non-cutaneous exposure, there are no known practical methods for measuring tolerance of individuals but fairly well accepted standards exist for tolerable limits of many substances.

113 Solubility of Carbon Disulfide Vapor in Body Fluids and Tissues. R.W. McKee. J. Ind. Hyg. & Tox., 23, 434-489 (December, 1941).
A technic for determining carbon disulfide solubility in tissues and fluids is given. Solubility coefficients are presented for water, saline, urine, whole blood, blood plasma, red cells, bile, brain, liver and kidney. The relationship between lipid content and carbon disulfide solubility is shown, with no particular affinity of carbon disulfide for any one type of tissue fat. In vivo blood and urine coefficients correspond well with the tonometer determinations. The rate of saturation and desaturation is quite rapid. Saturation time checks well with the in vitro time.

Control Methods

114 Micro-Cleanliness in the Wash Room. C.R. Whittington. Nat. Safety News. 43, 54, 72 (December, 1941).
Hypochlorites (solutions of sodium or calcium hypochlorite) are recommended as the most effective disinfectants. They are non-toxic, destroy odors rather than masking them and destroy filterable viruses. Solutions for various purposes vary in available chlorine content from 100 to 5000 p.p.m. In general it is best to make a solution containing 10,000 p.p.m. available chlorine and to dilute it as needed. Various applications are described.

115 The Destruction of Anthrax Spores in the Single-Bath Chrome Tanning Process. G. Kast. Muench. Tierarztl. Woch., 89, 205-209 etc., (1938). (German).
Nearly all imported hides collected through ordinary trade channels are to be regarded as probably infected. Most disinfectants either are ineffective or spoil the hides. The chemicals used in removing hairs and epidermis kill anthrax spores in 35-43 days and chrome alum in 27 days. Their rate of killing is much too slow to be effective in the time taken by the tanning process but the successive stages in treatment by these chemicals and others that are equally effective may give sufficient sterility by the end of the tanning process. It is most important to disinfect the water used in the preliminary washing process, as anthrax spores are always likely to be present.

116 Disinfection of Anthrax-Infected Equipment in Leather Factories. I.A. Igorov. Sovyet Vet. No. 2, 48-51 (1939). (Russian).
Despite the variety of treatment given raw leather in tanning processes, anthrax spores survive and remain virulent in the equipment of leather factories, where they can contaminate products and effluents and infect workers. Russian official instructions prescribe the use of chloride of lime, for disinfection, but the author criticizes them on the ground that it reacts with various chemicals used in processing, and recommends it only for cleaning appliances used in soaking. Caustic soda is recommended for appliances used in liming, dyeing, drying and finishing departments, and either acid or alkali in tanning departments. In general the concentration of these materials should be under 10%.

117 Prevention of Calcium Cyanamide Dermatitis. Queries & Minor Notes. J. Am. Med. Assoc., 117, 977 (September 13, 1941).
The question is what precautions can be taken to prevent cutaneous irritations appearing in men handling calcium cyanamide, which is used as a fertilizer and in the preparation of a number of other compounds. The preventive measures recommended include totally enclosed methods of manufacture, wearing of protective clothing with change from outside clothing, shower baths, respirators. Protective clothing may consist of the new synthetic resins. In the absence of respirators, a little petrolatum in the nostrils is of benefit.

118 Protection of Droplet-Borne Infections by Spray. D.S. Middleton and I.C. Gilliland. Lancet 241, 598-599 (November 15, 1941).
A controlled experiment using the most elementary and simple form of spraying with a hypochlorite solution affords some evidence that this method is capable of diminishing the spread of droplet-borne infections within a military unit. The method achieves its best results during epidemic periods.

119 Protection of Skin from Cleaning Compounds. Queries & Minor Notes. J. Am. Med. Assoc., 117, 903 (September 6, 1941).
The Air Corps uses large quantities of cleaning compounds for the cleaning of airplanes and engines. A formula for the removal of carbon from engines includes creosote oil (about 5% phenols), orthotoluidine, diethanolamine, oleic acid and ethylene glycol, the creosote oil constituting 50% of the whole. It is generally diluted 1 to 5 with water or kerosene. Information on caustic and irritating properties and permissible limits of the constituents is requested. All the substances mentioned are direct cutaneous irritants or sensitizers for some persons. If kerosene is used as the diluent an additional exposure is introduced. Any dilution practicable in metal cleaning will probably exceed the strength necessary to produce cutaneous injury, and any change in formula would only increase the concentration of one potentially, hazardous material at the expense of another. Therefore, skin protection is the only solution of the problem. Gloves and aprons should be worn. Synthetic rubber, especially neoprene, may be the best material where kerosene is used. Some protective creams may be beneficial, but their effect must be determined by trial and error. Careful skin hygiene must be maintained. Isopropyl alcohol is recognized as a solvent for removal of creosote from the skin.

120 Removal of By-Product Gases from Cored Carbon Arcs in a Moving Picture Projection Booth. R.L. Houtz. Safe Practice Bull., No. 34, Penna. Dept. of Labor and Industry. 4 pp. (December, 1941).
Some projection machines are equipped with a rear shutter in addition to the usual front shutter. The additional shutter assists in cooling the machine parts and thus reduces the fire hazard, but it has an undesirable effect in causing carbon-arc by-products to pass from the opening of the lamp house into the projection room, precipitating smoke-like deposits on the sound-track mechanism and also causing a potential health hazard to the operator. This escape of fumes is not prevented by the conventional ventilating system for the lamp housing. To overcome this difficulty, a tightly-fitting plate of Pyrex glass is placed between the rear shutter and the lamp house. This has proved effective in practical use. The ventilation system of the lamp housing is described.

121 The Problem of Deep Mine Air Conditioning. H.L.M. Larcombe. Mining Mag., (London) 65, 111-121 (September, 1941).
The author stresses the importance of atmospheric conditions as controlling factors in deep mines. The use of wet drilling, although necessary for dust control, increases the humidity to about 99% at a temperature of 90°F, which is at the limit of labor efficiency and health. Wetting of mine walls and muck piles also contributes to the humidity. As mines go deeper the silicosis hazard remains about the same but the humidity hazard increases. One proposed solution is dry mining, using drills without compressed air, with an exhaust system. The difficulty with this plan is removal of the dust. Dry cyclonic separators do not efficiently remove the finest dust, and wet cyclones add to the humidity. The bag separator gives better results. Electrical precipitation is used in South African mines but has the limitation that the outfit is not transportable. Bag filtration is also useful for removing dust from blasting. Magnesium chloride solution instead of water for wetting dust has been proposed. Air cooling is now practiced successfully in several deep mines. Three general methods are used: (1) refrigeration plants on the surface; (2) refrigeration plants underground; and (3) the use of compressed air in air motors for all underground drives. The relative merits of the three are discussed. Compressed air cooling is the most economical. The silicosis problem is reviewed briefly.

122 The Effect of Humidity of Air on the Disinfection Capacity of Mechanically Atomized and Heat-Volatilized Germicidal Aerosols. A.H. Baker and C.C. Twort. J. Hyg., 41, 117-130 (September, 1941).
The humidity of an atmosphere being disinfected by means of germicidal aerosol has a marked effect on the efficiency of the operation. The number of bacteria able to survive for a given time may be decreased greatly by raising the relative humidity from 40 to 80% or higher. The conditions of humidity, germicide and method of generating aerosol for maximum disinfection are not yet known.

123 The Gas-Mask Filter. H. Mohler. Protar, 7, 89-92 (1941). (German).
The term gas-mask filter includes the charcoal filter for gases and vapors and the fibrous filter for aerosols. The article is a theoretical discussion of the mechanism by which these two classes of impurities are removed from air. For gases and vapors the boiling point is the most important factor in removal. For mists and smokes (liquid and solid aerosol particles) the particle size is the most important factor. Some methods for circumventing the gas mask are discussed briefly.

124 A Bacteriological Study of a New Sanigenic Flooring. W.L. Mallman. J.Am.Med. Assoc., 117, 844-847 (September 6, 1941).
"Hubbellite" is a new cement floor surfacing material containing cupric oxychloride, and is claimed to destroy bacteria. It was tested by: (1) introducing fragments of the floor into water; (2) smearing bacteria and molds on the flooring; and (3) comparing the bacteria and mold counts with those on ordinary cement. Results of all these tests lead to the conclusion that the use of hubbellite floors is an aid in the control of floor-borne infections of the feet.

125 Control of Dust and Smoke. S.C. Blacktin. Chem. Products. 4, 53-59 (1941).
A discussion of dust and smoke determination and control, physical analysis of particles by dispersion, newest advances, stationary and rotating records, counting particles in the original medium and applications in the manufacture of perfumery and photographic products. Twenty references.

126 Reduction of Dust-Borne Bacteria. J.C. Thomas. Lancet 241, 123-127 (August 2, 1941).
The effect of spindle oil on wood floors has been tested over a period of months, both in a crowded canteen and in hospital wards. In every case the author reports a reduction by about 80% in the number of organisms projected into the air by sweeping. This reduction applies both to the common dust saprophytes and to pathogenic streptococci.

127 Sterilized Air Cuts Illness, Gives us Better Products. H.C. Jackson. Factory Man. & Main., 99, 81-82 (December, 1941).
The installation of bactericidal lamps in the factory of Bristol-Myers Company is described. Over 99% of the total bacteria are removed, and operators in the finishing department are freer from colds and respiratory ailments. Contamination of the products is also eliminated.

128 Air Purification by Hypochlorous Acid Gas. A.T. Masterman. Chem. Products, 4, 22-24 (January-February, 1941).
The author discusses the use of hypochlorites for germicidal spraying, which was first used in 1918. He presents several points in support of his view that hypochlorous acid is the germicidal agent. Carbon dioxide increases the germicidal power, but it is lowered by alkalies. Objections of other authors to the use of the method are answered.

129 Germicidal Aerosols. A.H. Beker. Chem. Products, 4, 25-28 (January-February 1941).
There is ample proof that diseases of the respiratory tract and possibly certain virus diseases are spread by droplets, which remain suspended in the air a long time. Any germicidal aerosol should be capable of effectively sterilizing all droplets or droplet nuclei which are small enough to travel in a more or less horizontal direction for a distance of about 3 feet. No aerosol has been produced which will effectively deal with large droplets during their brief presence in the atmosphere. Many phenolic germicides have a rapidly lethal action on bacteria, but are toxic to man, have an undesirable odor, or irritate the nostrils. Hypochlorites are cheap but are subject to possible objections on account of odor, bleaching action, and corrosion of metals. "Smokes" can be produced easily from numerous cheap substances and without the expensive apparatus required for generating the other aerosols. The pleasant odor of balsamic aerosols may be also useful psychologically as a mask for unpleasant odors.

130 Purification of Air and Gases. Anonymous. Ind. Chemist. 17, 117-119 (May,1941).
The Traughber flotation filter is described. A smoothfaced cylinder, rotating at a suitable speed in contact with the surface of a liquid, picks up a film of the liquid and sprays it with considerable force in the form of a fine mist, sending it splashing with the gas to be cleaned, against the sides of the filter. The character of the mist, the density of the droplets, their size and the volume of mist can be regulated. On the surface of the pool of liquid a minute quantity of another liquid of low surface tension is allowed to drop at predetermined intervals, so that every mist drop is covered with an infinitesmal film of the low-surface-tension liquid. As the spray and mist reduce the temperature of the incoming gas, the volume and consequently the velocity are reduced, condensation upon the particles in suspension is accelerated and the low-surface tension oil insulates them electrically. The final stage of purification is achieved by bubbling the gases in fine streams through a layer of water upon which the low-surface tension oil forms a froth as the gases blow through. This froth layer is the ideal equivalent of a filter cloth of constant, adjustable texture and resistance. Any froth entrained by the gas is arrested by low resistance labyrinth rings. The circulating fan is placed behind the filter, and the filter therefore operates under reduced pressure. Other details of construction are described and illustrated.

131 Second Supplement to Information Circular 7030R. U.S. Bureau of Mines, November 28, 1941.
The following respiratory protective devices have been approved by the United States Department of the Interior, Bureau of Mines, since the first supplement to Information Circular 7030R was issued (April 30, 1941).

SCHEDULE 21 -- Dispersoid (Dust, Fume and Mist) Respirators
Type A. -- Pneumoconiosis-producing and Nuisance Dust Respirators
26. Willson Respirator No. 10. Approval BM-2146, issued to Willson Products, Inc., September 11, 1941.
Toxic Dust Respirators
9. A.O.R-9100 T respirator. Approval BM-2144, issued to the American Optical Company, May 19, 1941, for toxic dusts.
10. Hygeia Reef #12 respirator. Approval BM-2145, issued to the Hygeia Filtering Corporation (formerly the Hygeia Respirator Company), July 15, 1941, for toxic dusts.

132 <u>An Improved Method of Evaluating Dust Leakage from Air Filters</u>. L.K. Acheson and H.A. Shumaker. Heat., Pip., and Air Cond., <u>13</u>, 724-728 (November, 1941). The method was originally designed for testing vacuum sweepers but can be applied to any type of air filter. The method is based primarily upon the discoloration of a white porous Lintine target, the amount of discoloration being measured by photo-electric means. Only the filtered air is tested, thus giving a measurement of the total leakage, unaffected by variations in dust concentrations in the room air. The standard test dust consisted of Cottrell precipitate and white sand. Full details of the method are given.

Industrial Medical Practice

133 <u>Placement of the Worker</u>. T.L. Hazlett. Ind. Med., <u>10</u>, 535-536 (December, 1941). A uniform examination of all applicants has often been common practice. However, with the varying types of strength, skill and ability, and varying health hazards to which the worker is exposed, a uniform examination system is no longer sufficient. The purpose of the pre-employment examination is to fit the worker properly into the job which his physical qualifications warrant. Complete rejection of the worker should not even be a secondary purpose. The plant physician should be familiar with the hazards of the industry; if detailed knowledge is impossible, job-specification cards should be used for the information of the employment, production and medical departments. The physician's copy should contain full information on the known hazards of the job. Complete personal history is desirable for the pre-employment examination. Classification of the examinations will depend upon the industry, but in a suggested classification for a fabricating industry, examination No. 1 would be the general type, possibly including a fluoroscopic examination, chest x-ray and a Wasserman; No. 2 would include a chest x-ray, as it is necessary for dusty occupations; No. 3 a complete blood examination (particularly for exposures to metals and solvents), and No. 4 patch tests. In the author's experience, the system of grading men for fitness for particular jobs, as now practiced permits placement of many workers formerly thought unfit for any job.

134 <u>A Syphilis Control Program for Industry and its Integration with the Community Program</u>. F.G. Gillick and J. Buxell. Ind. Med., <u>10</u>, 548-552 (December, 1941). The active participation by industry in syphilis control work involves certain responsibilities to the employee as an individual, as an integral part of the industrial organization, and as a member of the community. As an individual and a part of the industrial organization, the employee's active voluntary cooperation can best be solicited and obtained by guaranteeing the security of his position in industry and in society through sound medical and administrative policies and through maintenance of strictly confidential physician-to-patient relationship. As a member of the community the industrial worker cannot be expected to rise suddenly above the health standards of his environment and to maintain this high level. An industrial program for syphilis control should, therefore, be actively integrated in and coordinated with the community's syphilis control program.

135 Industrial Nursing and Community Resources. H.H. Kessler. Nat. Safety News, 43, 34-36 (December, 1941).
The author lists 10 official agencies which contribute to a rounded health program from the U. S. Public Health Service and Department of Labor to the family physician. The opportunities of the nurse are briefly discussed. Among the obstacles and problems that the industrial nurse faces are those found in the policies of management, the attitudes of unions, the resistance of the worker, the apathy of some social workers and her own lack of training. Cooperation with the various agencies will aid in overcoming such obstacles.

136 War and Health in Britain. W. Jameson. Am. J. Pub. Health, 31, 1253-1262 (December, 1941).
This abstract is confined to the section on "The Industrial Worker." The difficulties of housing, lighting, ventilation, time for shopping, care of children, etc. are discussed and then, more fully, working hours and fatigue. After the evacuation of Dunkirk and the collapse of France in May, 1940, a tremendous effort was put forth by industry. Longer and longer hours were worked, and in many factories there was a higher hourly output at the same time. This situation could not last, and gradually output began to fall as a result of strain and fatigue. Time began to be lost through sickness and injury and workers became stale. Accordingly, hours were reduced and holidays resumed. Apparently 60-65 hours per week for men and 55-60 hours for women constitute a limit beyond which there is more to lose than to gain. Certain industrial poisonings have increased, especially those from T.N.T., aniline, nitrous fumes and carbon monoxide. Medical supervision and nursing and welfare services can be made compulsory when necessary in any munitions factory.

137 An Industrial Medical Care Plan. C.B. Bray. Medical Care 1, 344-349 (Autumn, 1941).
The medical service program of the American Cast Iron Pipe Company, employing 1500 persons, is described. The staff consists of 3 full-time physicians, a laboratory and x-ray technician, 2 dentists, 12 part-time specialists, and two full-time nurses. Medical service is free to all employees and their families, at a cost to the company of $125,000 per year. During 1940 73,017 distinct services were rendered. In addition to regular services which are described, a study of cold vaccines was made with 500 employees cooperating. Thorough pre-employment examinations are given, and the company has cooperated with other agencies in providing rehabilitation for those who are rejected. The loss of man days through illness during 1940 was 0.87%, and through accident 0.73%, both of which are much below the national average. Statistical data can not be practically presented, but the company feels that the working efficiency of the employees is increased to such an extent that more money is saved than the total cost of the medical services. Also, the efficient working life span is probably increased, and the company is making a more helpful and efficient contribution to national defense than it would otherwise.

138 Recommendation Regarding the Organization of a Medical and Social Service and Security Committee in Establishments Mentioned in Article 65, Book II of the Labor Code. Med. du trav., 13, 68-84 (1941). (French).
The French Minister of Labor recommends that in every plant employing 2000 workers, a full time medical service should be provided; in plants with 500-2000 workers, a half time physician and full time nurse. The physician should be trained in industrial medicine, should give examinations to all applicants and periodically to all young or endangered workers, and should supervise plant hygiene. In factories with more than 1000 workers there should be 7 rooms for the medical service and an ambulance, and at least 2 rooms in factories with 100-1000 workers. A social service organization should cooperate with the physician; there should be a hygiene committee of at least 7 persons, and a security committee.

139 Medical Care in Industry. F. Goldman. Medical Care. 1, 301-312 (Autumn, 1941).
The author has made an intensive study of four medical service plans, conducted by large employers located at different parts of the country. Non-industrial injuries and diseases are included as well as industrial injuries and occupational disease, in all the plans. The following points are common to all four: (1) physician's care includes the services of general practitioners as well as specialists; (2) home medical care is provided; (3) hospital care is an integral part of the plans; and (4) preventive services for apparently well persons are made available; (5) the basic diagnostic services such as clinical laboratory and roentgenological services are furnished through well-equipped clinics or hospitals; (6) physical therapy services are provided in special divisions equipped with all essential apparatus; and (6) appliances, with certain exceptions, are excluded from coverage. Points of difference include the amount and period of hospitalization, which is limited in two of the plans; provision for tuberculosis, financing plans, and allocation of expenses. The cost per eligible person per year varies from $10.75 (in a group of 100,000 eligible persons) to $23.40 in a group of 3,000.

140 Dependence of Results of Epicutaneous Skin Tests on the Localization and Condition of the Eczema. C. Carrie and R. Wachmann. Dermat. Wchnschr. 112, 237-246 (1941). (German).
The authors first state that the degree of reaction in allergic eczemas is altered by the cause of the illness. They examined cases of acute universal, localized, and chronic eczemas to determine whether the non-specific reaction of sensitivity as well as the specific allergic reaction, depends upon the state of eczema. If 3 or more substances out of their standard series of 20 caused a positive reaction, they diagnose the case as one of increased non-specific sensitivity. They found that such was the case in 11 out of 14 cases of acute eczema, and in about half of the other forms. They point out that testing of this non-specific sensitivity is useful for expert testimony as well as in giving advice about change of occupation.

141 Employment of Handicapped Persons. J.B. Knox. Management Record, 3, 151-154 (December, 1941).
Practices regarding employment of handicapped persons vary greatly, and a sufficiently large number of corporations (one-fourth to one-third) employ such persons to indicate that it is practical. The experience of companies which have employed handicapped persons, using careful selection procedures, seems to have been uniformly good. The number of handicapped persons (probably 6 million adults) is large enough to constitute a considerable labor supply, and a considerable social problem if not employed. Social philosophies regarding employment seem to vary greatly, and may be more important than experience in determining policies. Study of each company's selection practices may reveal points at which they can be revised with profit to the company in this emergency and to the public in more normal times.

142 History and Present Status of Oxygen Therapy and Resuscitation. R.M. Tovell and J.E. Remlinger. J.Am.Med.Assoc., 117, 1938-1944 (December 6, 1941).
This paper is a general review of oxygen therapy and of resuscitation. Anoxia (lack of oxygen in the system) is classified and the treatment of each form is discussed. The use of oxygen after major surgical procedures is increasing, as is oxygen therapy in general. The common manual and mechanical types of resuscitation are described briefly. The patient asphyxiated with carbon monoxide presents a rather complex problem. The best treatment involves the use of oxygen and carbon dioxide. The use of helium with oxygen for treatment of asthma has been found successful.

143 Symposium on Industrial Health Held at the Medical College of Virginia, Richmond, Va., September 11 and 12, 1941. Reported by C.C. Sappington. Ind. Med., 10, 537-542 (December, 1941).

Five Virginia organizations, representing the State, medicine and industry cooperated in making this symposium possible. Twenty papers were presented on various phases of industrial health. Some of these in the fields covered in this Bulletin nearly duplicate other papers by the same authors, that have been abstracted recently. Dr. Hazlett's paper on Placement of the Worker is abstracted separately in this Bulletin. In addition, the following three are of interest.

Tuberculosis in Industry: The Use of Mass X-Raying. E.C. Harper.

Mass x-raying with a 35-mm. apparatus costs about 25 cents per person, and requires 30 minutes. Mass surveys have been made in the tobacco, explosives, life insurance, steel, recreation and amusement products, and coal mining industries. The results show a percentage of 0.56 cases active and 2.1% old healed tuberculosis. Approximately 50,000 more persons will be examined next year.

Respiratory Diseases and Air Conditioning. W.J. McConnell.

Adequate and proper maintenance of air conditioning can be a factor in the control of upper respiratory diseases. Statistics by the Metropolitan and by Bristol show little difference in incidence of sickness, absenteeism and respiratory disease due to air conditioning. On the other hand, colds and other diseases are contracted because the body does not adjust itself to changed conditions, and air conditioning provides uniform conditions. Pneumonia has been reduced to one-fourth by preventing hazardous exposures. Thermal radiation of the body and comfort are also discussed.

The Evolution of Industrial Health. D.E. Cummings.

The author discusses the history of industrial health for the last 20 years, with the great changes that have arisen, including attention to prevention of accidents and occupational diseases, development of control measures, beginning of industrial hospitals, the period of fixed salaries for medical men in industry, the attitude of suppressing information on silicosis, and the gradual abandoning of that attitude. The present place of the engineer and physician and the basis for their cooperation are also discussed.

144 Industrial Safety and Health from an Executive Viewpoint. J.J. Porter. Ind.Med., 10, 542-546 (December, 1941).

The author first recounts accident prevention work sponsored by the Portland Cement Association, the report of the N.A.M. Healthful Working Conditions Committee, and the study of silicosis in the cement industry, made by the Saranac Laboratory. He then discusses the attitude of workers toward safety problems, and urges the employer to sell safety to the men rather than to adopt a tone of defeatism on the influence of the unions. Next is considered the part of the government in securing industrial health. The first steps were legislative and have accomplished great good. The government's present function in inspection and safety recommendation is not always satisfactory, as some inspectors are incompetent and politically appointed. The means for accomplishing safety and health can be safely left in the hands of the management which in the great majority of cases is far more competent to organize and direct safety and health programs than any government bureau can possibly be. Figures on the improvements in safety and industrial health demonstrate that industry in general is capable of accomplishing much.

145 Disabling Morbidity among Industrial Workers, Third Quarter of 1941. W.M. Gafafer. Pub. Health Repts., 56, 2428-2429 (December 19, 1941).

The usual quarterly report on disabling morbidity among industrial workers is presented in tabular form. There are only two outstanding differences from the regular course of disease frequency. One is an increased rate for diarrhea and enteritis, and the other is the pneumonia rate, which approximately equals the previous year's high record.

146 Responsibility of Government Labor Officials in the Defense Program. F. S. Miller. N.Y. State Dept. of Labor, Ind. Bull., 20, 243-248 (September, 1941).
The three major areas in which government labor officials can contribute most to defense include conservation of the worker's health, maintenance and extension of labor standards, and conservation of worker's income. Under normal operating conditions occupational diseases and accidents cause a loss of 1½ billion man-hours, and it is increasing with the current expansion. The subjects of new hazards, effect of noise, readaptation of former employees, preemployment examinations, overcrowding and lack of trained industrial physicians are discussed. Labor officials have a unique opportunity for safeguarding health and safety of employees.

147 Appraisal of Disability Resulting from Occupational Diseases. M.R. Mayers. N.Y. State Dept. Labor, Ind. Bull., 20, 251-254 (September, 1941).
The author discusses the difficulties in appraising a disability due to occupational disease. The starting point of any such appraisal is the "normal" which involves factors varying with the job. Among several particular difficulties mentioned, one is disagreement among physicians regarding percentage disability, especially when occupational disease is the cause of the disability. Another is the question of returning to work in which the patient has contracted the occupational disease. In some cases, such as silicosis and aniline bladder tumors, the disease progresses whether the occupation is continued or not. There are cases of decreased sensitivity, such as to carbon tetrachloride after working with the same material, and increased sensitivity, for instance to carbon tetrachloride after chlorinated naphthalene poisoning, and the common allergies. Psychological disturbances, such as those caused by carbon disulfide and lead, are also considered. In conclusion, Dr. Mayers lists some of the pitfalls to be avoided in the collection and interpretation of laboratory data on occupational diseases.

148 Morbidity Trends and Trade Cycles. L.E. Bodmer. Int. Labor Rev., 43, 515-541 (1941).
Using data from the sick fund statistics of Germany, Scotland and Czechoslovakia, the author shows a close correlation between morbidity and changing economic conditions, the recorded morbidity falling during economic depression and rising during prosperity. However, a rise in recorded morbidity is not in itself a sign of deterioration in health nor of malignancy. It is, on the contrary, a natural corollary of any improvement in the standard of living. If sickness insurance is not to defeat its purpose measures should be taken to prevent these trends as far as possible. One possible method would be to avoid restriction of benefits or tightening control during depressions, graduating the rates of sickness benefits on a scale inversely proportional to wages.

149 Clarity of Detail in X-Ray Screen Pictures. E. Schopper. Veroeffentl. wiss. Zentral-Lab. phot. Abt. AGFA 6, 134-138 (1939). (German).
The 2.5-fold increase in sensitivity of the new x-ray Fluorapid film brings about an improvement in the energy relation. Comparison of radiographic methods shows that the clarity of detail increases in the order: fluorescent screen photography, use of paper, use of x-ray film.

150 Follow-up of 1,041 Tuberculous Patients. M.G. Stephens. Am. Rev. Tuberc., 44, 451-462 (October, 1941).
The study was made to determine the status of tuberculosis patients on particular anniversaries of the date of admission to a sanatorium, and the chances that tuberculosis will recur after a patient has completed his cure and resumed employment. Naturally the minimal cases had a more favorable experience than the advanced cases. On the 5th anniversary of the completion of cure, 90% of the minimal cases were at work or able to work as compared with 75% of the advanced cases.

151 Comparison of Miniature Roentgenograms and Full Size Films in Serial Examinations of Workers Exposed to Dust. E. Saupe. Fortschr. a. d. Geb. Roentgenstrahl., 62, 145-159 (1940). (German).
More than 25,000 workers in the ceramic industry and mines of Saxony have been examined. The author presents 12 pairs of pictures of roentgenograms; one is reduction of a large film, the other an enlargement of a miniature, both the same final size. It is possible to recognize silicosis in stage 2 (snow-storm or mottled lung), but not always silicosis in stage 1, and asbestosis in severe or medium cases but hardly ever in early cases. The miniatures (22 x 24 mm.) compared with the normal show the details simplified and coarsened, the sharpness lost and the finest details invisible. Much has been accomplished by the use of miniatures but they must be improved.

152 Physical Type in Pneumoconiosis. E.A. Aslett and others. J. Hyg., 41, 169-179 (September, 1941).
The authors made an investigation of the population of an anthracite colliery in South Wales to test whether susceptibility to pneumoconiosis is related to physical type. The ratio of the standing height to the lateral diameter of the chest seemed to be to some degree correlated with susceptibilities to pneumoconiosis. The ratio was rather lower in the normal subjects than in those with major consolidation. However, the correlation was not sufficiently close to forecast with a useful degree of accuracy whether or not an individual is likely to develop pneumoconiosis.

153 The Causes Underlying the Recent Increased Incidence of and Mortality from Tuberculosis in Glasgow. S. Laidlaw and D. MacFarlane. Brit. Med. J., 2, 436-437 (September 27, 1941).
The annual number of recorded cases of tuberculosis in Glasgow, which was fairly stable up to 1939, (around 1600), rose to 1,908 in 1940 and 2,190 in 1941. The deaths correspondingly increased from an average near 960, to 1,177 in 1940 and 1,342 in 1941. (The 1941 figures are based on the record for the first half of the year.) The author rejects the following as possible important causes of the increase: (1) increased virulence of the tubercle bacillus; (2) malnutrition and deficient diet; (3) tubercle bacilli in milk; (4) examination by military medical boards; (5) exertion or strain of army life; (6) long hours in shelters; (7) overcrowding in factories. The eighth possible cause, namely long hours, overwork, strain and curtailed rest is accepted on the basis of distribution by age groups and other factors as the predominating factor in the increase of tuberculosis.

154 Why Not T.B. Tests for All? Anonymous. Factory Man. & Main., 99, 55, 164 (June, 1941).
The local Anti-Tuberculosis League tested 3,300 employees of a large factory in Cleveland with fluoroscope and x-ray for chest and heart ailments. Active tuberculosis germs were found in 0.5% of the total number. Fluoroscopic examination should be a part of hiring procedure. In the Ohio courts tuberculosis allegedly contracted from a fellow employee was the basis of a compensation suit. Although it was rejected and tuberculosis is not usually compensable, fluoroscpic and x-ray tests aid in defense against unfair suits and are also valuable in supervision of employee health.

INDEX
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