WORKMEN'S COMPENSATION FOR OCCUPATIONAL DISEASES.

By

VERONICA SULLIVAN, Ph. B.

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INTRODUCTION

Of all the various phases of industrial problems none is more fascinating than the constant influence of employment upon health. This demands the attention of everyone if the welfare of the nation is to be preserved, for the health of the employee forms an integral and inseparable part of the community's problem.

Statistics show high rates of occupational illness and occupational deaths. There is a tremendous waste of energy. Many occupations are known to lead to skin diseases, poisonings, and respiratory diseases. Many, too, are influential in causing other diseases already existing. Since the cause of all this is modern industry, then, industry should remedy the conditions that lie at the base of the evil or pay the price.

Within the last twenty years there has been aroused a vital and growing interest in the factory legislation for the remedying of labor conditions. Much has been done toward sanitation, hours of labor, and compensation for accident; much still remains to be done. A few states compensate for occupational diseases. This, however, is not enough. All states must recognize that not only death but disability and fatigue are the responsibilities of industry.

The worker must be employed in a sanitary place, engaged in work which will neither overtax his strength, subject him to dangerous tasks, nor allow him to contract disease. He should receive a yearly medical examination to detect the

beginnings of disease and ought to be entitled to expert medical and hospital care in case of illness.

Sir Thomas Oliver studied the occupational conditions in England from the social, hygienic and medical viewpoints. Alice Hamilton made a scientific survey of several factories in the United States from the standpoint of industrial poisons. Edgar L. Collis and Major Greenwood have contributed much toward preventive medicine. Clyde J. Crobaugh and A. E. Redding studied the subject from the standpoint of insurance feasibility. Both Robert Woodbury and Gordon Watkins in their books stress the need of safeguarding industrial health. Carl Hookstadt made a study of economic consequences of physical disability. The National Industrial Conference Board of New York and the Metropolitan Insurance Company have contributed statistics of great value.

In late years, government publications and scientific medical surveys have been printed which have done much toward creating interest and arousing public opinion. Many books have been written which describe diseases common to certain occupations but none advocate a compensation to cover the losses suffered by them.

The method used in this work is that of historical research. All the data and statistics to date that have a bearing on the subject have been scrutinized and selected. Government Reports, such as the Monthly Labor Review and the U. S. Bureau of Labor Statistics, Public Health Reports, Clinical Papers, Current Magazines, such as the National Safety News,

Journal of Industrial Hygiene, and Safety Engineering were used. Every court case on the subject was read and a compilation of all cases compensated for occupational diseases was made and charted.

Chapter one has been devoted to the history of Occupational Diseases and the Workmen's Compensation Act as a logical approach to the subject. Subsequent chapters deal with the narrowness of the court decisions in cases of occupational diseases, a list of diseases and the occupations which cause them, the relation between occupational diseases and their prevention, and possible extensions of Workmen's Compensation for Occupational Diseases.

CHAPTER I.

OCCUPATIONAL DISEASES AND THE WORKMEN'S COMPENSATION ACT

The industrial problem of diseases developing from occupations has only recently been brought to the attention of community, industry and labor. The courts have defined occupational disease as an acute or chronic affection contracted by the worker, arising out of or in the course of the performance of his work.

At the time of the adoption of the Workmen's Compensation Acts, no reliable statistical data existed showing the extent, number, or seriousness of occupational diseases. No reasonable estimate of the cost of compensation for occupational diseases could be made.

Samuel Gompers, in an introduction to Frankel's "Health of the Worker", says: "Of late years, with the development of preventive medicine and sanitary science, we have been learning how to prevent many diseases that formerly were considered the inevitable accompaniment of the industry. We have been learning that the enjoyment of good health by industrial workers is primarily a matter of intelligent self-protection as well as intelligent development of physical well-being."(I)

We find in "The Health of the Worker", by Collis and Greenwood, the following statement concerning the relationship of occupation and health:

"It has come about that a new relation is found to exist

(I)- Frankel, Lee K. Health of the Worker. Introduction.

between occupation and health. The health of the industrial worker forms an integral and inseparable part of the health of the community.

"When we come to consider in what way and to what degree we can improve the health of the individual worker, we shall find that a fourfold problem awaits us. Accidents loom large in the layman's view of individual disability, and well they may, for in sum total they are extremely numerous and many of them are serious; then everyone knows that certain occupations, apart altogether from the so-called 'dangerous trades', lead to a liability to poisoning, diseases, and high mortality; in the third place, not a few workmen, in adolescense or early adult life are found to lack the physical capacity to undertake particular branches of labor, and lastly, it is a common knowledge that much 'broken time' and absence from work occurs due to sickness, fatigue, or invalidity - due in their turn to a complex set of factors, most of which are controllable. Here then we have the outward sign of the health problem of the individual worker. Whilst at first sight accidents, poisoning, and a high occupational death rate are impressive, it cannot be doubted that the less dramatic side of the problem is in fact, the more important - namely, the lost time and incapacity due to ill-health. For this is so widely prevalent as to be almost universal, in all districts, at all ages, in all trades, there is this vast mass of wasted life and energy due for the most part to preventable maladies- in their turn largely attributable to remediable conditions of

industry or to the neglect of hygiene."(I)

Regarding occupational diseases, Tobey says: "Many industrial processes are dangerous to the health of the worker and may give rise to occupational diseases, which have been defined as 'injuries and disturbances to health contracted in industrial pursuits, and other vocations in life, as a result of exposure to toxic agents, infectious organisms, or other conditions inimical to health'. Examples of industrial hazards are chemicals, dusts, compressed air, anthrax, and abnormal physical conditions, such as excessive heat, humidity, etc."(2)

The fact that occupational diseases are increasing, due to modern methods and processes, is one of the most serious phases of this industrial problem. Many physicians and sociologists who have studied the situation confirm these facts.

Sir Kenneth Weldon Goadly made a study of industrial accidents and diseases in England. He states..."that industrial accidents taken over a period of years from 1919 to 1924, show a diminution in the number of weeks lost, whereas industrial diseases show an almost steady upward curve".(3)

Dr. McCord says: "It appears true that occupational diseases are on the increase, and as evidence of this fact the experience of one state, Ohio, is cited. According to official reports, it is said, the scheduled occupational diseases

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(I)-Collis, E.L. and Greenwood, M. Health of the Worker. Introd.
(2)-Tobey, James A. Public Health Law. p.61.
(3)-Goadly, Sir Kenneth Weldon, Disease and the Workman's Compensation Act, Journal of Industrial Hygiene, VIII,(October, 1928), p.424.

show an average increase of 71% per annum, and the non-scheduled occupational diseases show an average increase of 99.7% per annum when a comparison is made between the past two years and the previous five years." (1)

These increasing occupational diseases are not only sapping the lives of our workmen but they are a tremendous loss to industry. In many instances, the loss due to personal injury is only a small part of the loss which the employer actually sustains. For illness stops production and whenever production is checked, a vital effect is noted in industry. To keep industry moving smoothly, the vacancies caused by the sick, whether temporary or permanent, must be immediately filled. Many times this is a serious loss, as workmen skilled in a particular type of work may not be easily accessible. Besides, occupational diseases are a financial burden to the worker's family. Woodbury states: "It interrupts income and thus concerns the worker and his family. The loss of wages and the increased expenses for medical, surgical, and nursing care caused by sickness produce a strain upon the budget of the worker's family. This strain, when sufficiently serious, breaks down the family as a self-supporting unit and thus concerns the public, which must solve the resulting problem of poverty and dependence.

"The forms ofill health that concern the worker and his family include those which influence the worker's efficiency and enjoyment, as well as those which cause absence from work.

(I)- McCord, Carey P. Compensation For Occupational Diseases. National Safety News, XVIII,(October, 1928), p.66.

disability, and premature death.

"In cases of permanent disability expenses caused by sickness are likely to be high. In such cases the family has the added support of a sick man."(I)

The following statistics are from a study of the principal groups of diseases among certain classified occupations, based on the experience of six general hospitals in New York City for the year 1923.

> "The incidence of respiratory diseases was 8.6% per hundred among outdoor and 6.8% per hundred among indoor workers. In both groups the pneumonias constituted the largest single disease entity... There was more influenza among the outdoor workers than among the indoor workers.
> ....The incidence of phthisis among the two principal groups of occupations and among the unoccupied patients ranges around 1% per hundred. The highest rates of pulmonary tuberculosis were found among domestic servants and office clerks.
> ....The veneral diseases (predominately syphilis) were found as a primary condition at the rate of eight in each one thousand patients, among the outdoor workers the rate was twenty-three per one thousand and among the indoor workers twelve per one thousand.
> ....The general rate of cancer in the hospital population was 3.4% in every one hundred patients. Among the outdoor workers the rate was 3.1%; among the indoor workers it was 4.2%. Among the housewives it was considerably lower- 2.8% per hundred.
> ....Rheumatism troubled only 1.1% of the outdoor workers as against 1.6% of the indoor workers. It seemed to have attacked garment workers to the extent of almost three patients in every one hundred of that industry, more than any other occupational group of any size.
> ....Thirty-eight in each 10,000 patients suffered from acute and chronic poisoning as a primary cause for which they were admitted

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(I)- Woodbury, Robert Marse, The Worker's Health. p.135.

> to the hospital. The rate of occurrence among outdoor workers was sixty-six per 10,000; among indoor workers sixty-one, and among housewives twenty-one.
> ....Outdoor workers suffered from heart disease in the proportion of 3.5% per one hundred, indoor workers 3.7% per one hundred, those in unoccupied groups 5% per one hundred and housewives less than 2% per hundred. Among the garment workers and painters, heart disease was found in six out of every one hundred employees; among carpenters the rate was somewhat lower, and among indoor laborers over 7% per hundred.
> ....Diseases of the arteries are relatively more frequent among indoor than among outdoor workers.
> ....Diseases of the digestive tract occupy a dominant position in the pathology of homo sapiens. The largest number of patients in this category were treated for appendicitis, 1087 out of 14,291 or 7.5%. Almost 12% of the indoor workers were its victims as against less than 5% in the outdoor group
> ....The housewives succumbed to appendicitis in the smallest proportion while stenographers, salespeople in stores, storekeepers, and garment workers were the favorite victims, showing rates of twenty-eight, eighteen, fourteen, thirteen, per hundred respectively."(I)

Thus the health of workers in industry received surprisingly scant attention up to ten years ago. Apparently neither employer nor state recognized the enormous economic factor entailed and except in a few isolated instances little or no thought was given to what is today becoming one of the most important factors in economics. One reason for this was the rapid expansion of business with the almost limitless amount of labor

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(I)-Lewinski-Corconi, E.H. and Conover, A.E., Incidence of Disease Among Hospital Patients With Reference To Occupation. Journal of Industrial Hygiene, VIII, (June, 1926), p.270-277.

pouring in yearly from Europe. Moreover the wastage of 'hiring and firing' was not recognized and a large labor turnover was considered a normal and unavoidable condition. In many factories, and especially in mining camps, a doctor was employed on full time, but his function was almost entirely to care for accidents, and the work was considered unscientific and not particularly desirable. The passage of Workmen's Compensation Acts by state after state, however, has induced employers to consider the safety of their workers more carefully than formerly and in case of accidents to provide the most effective treatment possible.

In order to more clearly understand the developing of provisions for compensation for occupational diseases in the various compensation acts of the United States, a brief history of Workmen's Compensation legislation seems necessary at this point.

Workmen's Compensation is a system of insurance organized by the state to provide compensation to workers for losses caused by industrial accidents and occupational diseases. Thomas J. Donnelly, in "Workmen's Compensation", says: "Like any type of insurance, Workmen's Compensation substitutes collective responsibility for individual responsibility. It is a method whereby a small premium for each employee paid by the employer, results in considerable reward for the few, who, because of misfortune, have urgent need for compensation."(I)

(I)-Donnelly, T.J. Workmen's Compensation. pl.

Dr.Frederick L. Hoffman made an extensive study of industrial accidents in 1913 for the Prudential Life Insurance Co. (1) He estimated the number of industrial accidents in the United States to be 700,000 for the year 1913. Of this number, 25,000 were fatal, while the same number received permanent disabilities. This means a decided loss to industry since one death means a loss of 20 years of productive labor and the loss of a single limb a 50% decrease of earning power.

"The Industrial Accident Bureau of New Jersey reports for the fiscal year 1924-1925 more than 45,000 accidents causing deaths, permanent disabilities, or a time loss exceeding the remaind er of the shift or day during which the injury was received. Of the 111 fatal accidents in factories or workshops, the greatest number, twenty-eight, were caused by explosions, fifteen were due to occupational diseases, and twelve to the workers being run over or run down by cars, trucks, etc."(2)

Since the worker seldom had enough money set aside to meet the consequences of industrial accidents and diseases, and since the employer and society were also affected, a system of compensation was necessary. Regarding the social cost of industrial injuries, E.H.Downey says: "Economically considered, the direct loss to the nation from industrial accidents is not short of one billion dollars annually.

(I)- Industrial Accident Statistics- U.S.Bureau of Labor Statistics, Bulletin No.157.
(2)- Industrial Accidents and Diseases in New Jersey, Monthly Labor Review, XXIII,(June, 1926), p.59-61.

Temporary disabilities alone cause a yearly loss of more than six million working weeks. But the social cost of these minor injuries is small in comparison with the cost of deaths and permanent disabilities. The victims of work injuries are chiefly men in the prime of life, since it is precisely the young and vigorous who predominantly engage in extra-hazardous employments." (I)

"Statistical analysis of Workmen's Compensation in Pennsylvania, 1916-1920, shows that out of 8550 persons fatally or permanently injured in Pennsylvania compensation insurance experience, 10% were under 21, 50% were between 21 and 40, 20% were between 40 and 50, and only 6.5% were over 60." (2)

Prior to the industrial age, accidents were small in number and did not require extensive means of care. The responsibility usually rested with the employer. There existed a personal relationship between the employer and his few employees. With the new industrial age conditions changed- the employer had more workers under his care; power-driven machinery was introduced; complexity and speed of operation increased; and not only was the worker left to his own responsibility but his chances of accident or disease were greatly increased. The injured employee had only one course to follow in bringing action to recover damages from his employer and this right was found in the common law.

(I)- Downey, E.H. Workmen's Compensation. p.1,2.
(2)- Ibid, p.17.

Rhodes states that "the common law system consists of certain general principles of right and justice which are recognized by the courts as controlling in controversies between parties and these rules do not depend for their force on any statutory enactments but simply on general recognition. Employer owed it to employee, at common law, to provide him with a safe place within which to do his work, to furnish safe and suitable tools with which to work, to surround him with reasonably safe and competent fellow-workers, and to give him the necessary instructions as to howthe work should be done. Unless the employee can show a violation of one or more of these obligations he can recover no damages. The employee could gain only at a court's decision and then there was no security of payment."(I)

Thus with the above mentioned precaution, the employer was freed from responsibility for injuries resulting from the ordinary risks of occupation, extraordinary dangers of employment, carelessness and negligence of fellow-workers, and the worker's own carelessness and negligence. Employers often abused the recourses of the worker by attributing all accidents to the injured worker's own carelessness. Usually the employer engaged liability insurance companies at a specified premium, to fight their cases. Expert legal advice was used with the result that the employer was the winner. Although there were many accidents, few injured

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(I)- Rhodes, J.E. Workmen's Compensation. p,12.

workmen contested their cases under the common law. Besides the expense of a court case and the difficulty of collecting, if successful, the worker often had to wait years before he received compensation.

The injustice of the common law system became more and more apparent. Watkins, in his "Introduction to the Study of Labor Problems", says: "Social and economic justice demands that injured workmen shall be relieved from the financial burden of accidents; that modern industry shall provide in addition to a living wage, adequate surgical and medical care for injured workers; that compensation shall be sufficient to maintain the injured workmen and their dependents during periods of disability; and that industrial accidents and occupational diseases are just as legitimate a part of the cost of production as wear and tear of machinery or any other form of depreciation. Expense must be borne immediately by the employer but ultimately by the consumer." (I)

It was only natural that some attempt should be made which would change the common law so as to give the employee surer rights. Public opinion was created in favor of compensation for injuries. The courts showed their approval by awarding compensation to the injured under common law, whenever possible.

While the actual change from the common law system to the compensation as we know it today was sudden, it must not

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(I)-Watkins, Gordon S. An Introduction to the Study of Labor Problems. p.622.

be thought that the movement was sudden. Definite legislation providing for the injured was first made in Germany in 1885. Great Britain followed with the enactment of a law in 1892 and amended it to cover occupational diseases in 1906. Today, the British Compensation Law includes some 280 diseases. Other countries, Canada and Australia followed Great Britain with compensation legislation. The United States was slower because of the six following reasons:

(I)-Employers thought that it would cause malingering among workers;

(2)-The necessity of such laws was not appreciated by the public;

(3)-The fear of the employers that compensation would increase the cost of production and they would not be able to compete with firms not so handicapped;

(4)-Many thought that it would lead to state socialism;

(5)-State governments feared that industries might leave to set-up business in a state not having such laws;

(6)-American Federation of Labor held an indifferent attitude toward it.

The first compensation law to be enacted in the United States was in the State of Maryland in 1902. This law was, however, declared unconstitutional in 1904. Congress passed a law providing accident compensation for certain federal employees in 1903. Montana's law for miners was declared unconstitutional in 1910 by the Supreme Court of Montana. In 1911 New York's Compensation Law was declared unconstitu-

tional by the first important decision - that of Ives v. South Buffalo Railway Co.(I). In rendering the decision, Mr. Justice Werner said:

> "When our constitutions were adopted it was the law of the land that no man who was without fault or negligence could be held liable in damages for injuries sustained by another---due process of law---means---that every man's right to life, liberty, and property is to be disposed of in accordance with those ancient and fundamental principles which were in existence when our Constitutions were adopted."(2).

This decision was criticized promptly by many people and by almost every court in the country. They all thought that the court had been unnecessarily severe in the interpretation. To this day no other court has followed this decision of the New York Court, in dealing with the question of constitutionality. Still this decision influenced all further legislation and to prevent a like result, state after state looked to elective compensation.

An amendment to the constitution of New York State made possible the enactment of compulsory compensation in 1914.

(I)- 94. N.E. 431,(1911)
(2)- 94. N.E. 431,(1911) p.293.

New Jersey, Washington, California, and Wisconsin passed acts and then the movement spread rapidly until today 44 states and four territories have compensation acts. The four states without compensation are Arkansas, Florida, North Carolina, South Carolina.

Workmen's Compensation laws have at various times been attacked in the state courts on grounds of unconstitutionality but in nearly all cases opinions sustaining the acts have been rendered. In fact, since 1911, no Workmen's Compensation law, either elective or compulsory has been declared unconstitutional, for the five supreme court cases, cited in the foot notes (I), swept away the principal objections with their progressive, emphatic conclusions and established the fundamental constitutional soundness of Workmen's Compensation legislation.

There are two types of Workmen's Compensation. The first type is the compulsory law. This type compels every employer within the scope of the law to accept the act and pay the compensation specified. There is no choice. The second type is the elective law in which the employer has the option of either accepting or rejecting the act, but in case he rejects it, the customary common law defenses are usually abrogated. In other words, the employer is penalized if he does accept or elect the act. The employee also has the right to accept or reject the act and in this

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(I)- New York Central Railroad Co. v.White. 243 U.S.188 (1916).
(2)- Mountain Timber Co.v.State of Washington. 243 U.S.219 (1916)

(3)- Hawkins v.Bleakly. 243 U.S.210 (1916).
(4)- Middleton v. Texas River Power and Light Co. 249 U.S.152(1918
(5)- Arizona Employer's Liability Cases. 250 U.S.400 (1918).

way no one is deprived of the rights which were given to him by the constitution.

The extensiveness of the compensation laws varies with the different states. Some laws cover practically the whole range of individual employment while others are limited to what are commonly known as hazardous or extrahazardous occupations.

"These laws differ in extent of application, in amount of compensation, in method of administration, in insurance requirements, and in various other elements involved in the application of the principle of compensation. They are all based, however, on the unifying purpose of compensating the workman for economic loss from industrial accidents, without requiring proof of fault on the part of the employer or of freedom of fault on the part of the employee."(I)

This variation is probably due to the following reasons, first; the great variety of ideas and opinions which people have regarding the best means of obtaining justice to the workman, second; the ability of the drafters of the laws to avoid constitutional objections, and third; the readiness with which the laws are passed by the different legislatures.

Generally excluded are domestic service, farm work, and similar employment. Railroad employees engaged in interstate commerce come under Federal Liability and Casual employments are not usually included. Public employees,

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(I)- Blanchard, R.H. Liability and Compensation. p.103.

employers having only a few workers, and enterprises not conducted for gain are likewise excluded. The percentage of employees covered by the different laws range from about 20% in Porto Rico to almost 100% in New Jersey. In fifteen states less than 50% of the workers are covered.

Under the various laws of the states the following methods are used in carrying insurance:

I- The exclusive state fund,

II-The competitive state fund,

III-Private insurance, stock or mutual,

IV-Self- insurance.

When the state is the sole insurance carrier, it classifies individuals into groups according to hazards; fixes and collects premiums, determines claims, and pays compensation. The state fund method is growing in favor as it has little overhead expense, and was proven by the United States Bureau of Labor (I) in an investigation held in 1919 to be superior from the standpoint of liberality, efficiency, administration, economy, and promptness of payments. This method also won the approval of the American Federation of Labor.

Financial benefits vary in different states but in most states it is a percentage of the wages earned at the time of the accident. At least twenty states and the Federal Government provide that payment for permanent total

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(I)- Hookstadt, Carl. Comparison of Compensation Insurance Systems. Monthly Labor Review, XI,(December, 1920) p.135-136.

disability shall continue during the injured worker's life.

The Workmen's Compensation Acts are usually administrated by a central board or commission, entrusted with legal powers of enforcing the law. The central board carries on investigations, reviews them, and decides them, expertly, with the sole aim of giving the injured workman his full rights under the law.

This brief outline of Workmen's Compensation shows that it was primarily social legislation for industrial accidents. But it has been noted that occupational diseases are present to an alarming extent in many industries; that they are increasing in numbers; and that they, as well as accidents, must be borne by industry. Thus a gradual growth or expansion of the Acts took place so as to include some occupational diseases. This change and the difficulties that faced the courts in compensation cases as well as the present status of Workmen's Compensation for Occupational Diseases will be discussed in Chapters II and III.

CHAPTER II.

THE NEED FOR AN EXPANDED INTERPRETATION OF THE WORKMEN'S COMPENSATION ACTS BY THE COURTS

Dr. Carey P. McCord in the October 1928 issue of National Safety News says: "Most persons, including both industrialists and physicians, have difficulty in limiting and defining occupational diseases. This arises from the fact that there are many border-line cases, although in the majority of instances the difference between accident and diseases is fairly clear cut.

Opposition to coverage of occupational diseases in Workmen's Compensation Acts is frequently based on the fact that the causation of many conditions is more or less obscure and complicated, by a variety of factors, while many members of compensation boards believe that true occupational diseases are rare.

This is an erroneous belief, for in practically every trade, industry, and profession there are many opportunities for bodily harm other than accidents. Examples of occupational diseases, showing the insidious way in which they may develop include the 'ganglia', or lumps which develop on the backs of the hands of cutters in the tailoring trade, from the use of the heavy shears; the development of a new occupational disease, 'tularemia' among butchers or among cooks, from handling infected rabbits; the several bronchial asthma occurring among furriers, from the chemicals used in dyeing

furs; occupational 'retinitis' developing among motion-picture operators, from watching the intensely bright projection light; the cancer of the skin among workers who treat wood blocks with tar and creosote to render them waterproof, the tar having a 'carcenogenetic' action on the skin. These are examples of some of the more unusual types of infection or disease which are liable to occur in the approximately 7,000 trades or processes which are followed in this country as a means of livelihood. Not all of these trades, of course, have occupational disease hazards associated with the occupation or processes, but a very high percentage do have associated hazards.

"....It is to be hoped that legislative assemblies may know more about the insidiously developing occupational disease and the injustice that will be perpetuated if this increasing source of industrial disease is further ignored."(I)

For many years the courts held an indifferent attitude toward claims for occupational diseases. Their interpretation of the various Workmen's Compensation Acts was narrow and confined strictly to the wording of the particular Act. Their decisions were based upon the meaning or definition of the following terms; "injury by accident", "injury by pre-existing disease", and "injury by occupational disease".

An accident is defined as a sudden and unforeseen event arising out of or in the course of employment which causes

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(I)- McCord, Carey P. Compensation for Occupational Diseases. National Safety News, XVIII, (October, 1928),p.66.

the worker physical injury or functional derangement, either temporary or permanently.

A pre-existing disease is a disease which an employee may be suffering from before he enters the employ of the concern but which becomes aggravated by the particular employment he engages in and results in incapacity or death.

An occupational disease is usually defined as an acute or chronic affection contracted by the worker, arising out of or in the course of the performance of his work.

Because of this narrow interpretation of the Workmen's Compensation Acts on the part of the courts a large number of cases which should have been compensated for occupational diseases could not be covered by the term "accident" and as a result were not compensated.

A summary of eleven outstanding cases which show a need for broader interpretation of the Workmen's Compensation on the part of the courts follows. These cases were selected from various parts of the country and were not compensated because of the wording of the individual acts.

Industrial Commission v. Cross(I)

Ezra Cross died May 21, 1920, of typhoid fever. Defendants in error filed an application with the Industrial Commission of Ohio, claiming that they were dependent upon Ezra Cross and that he died as a result of injuries in the course of his employment. The Industrial Commission denied compensation. An appeal was thereupon taken to the common pleas court of

(I)- Supreme Court of Ohio, 136 NE, 283,(1921).

Hamilton Co. A judgment was rendered against the Industrial Commission.

The court said:

The term "injury" does not include diseases which are occasioned by or follow as a result from physical injury. Cross was an employee of the park department and in April, 1920, contracted typhoid fever by drinking water from a spring located in the park near the point where he was employed. This was not an "injury" within the meaning of the Act. The injury caused to the deceased worker, as described in the petition in this case, was not such a one as was contemplated or covered by any of the provisions of the occupational disease statute.

Jeffreyes v. Charles H. Sayer Co. (I)

Jeffreyes received a very serious case of poisoning of the hands from dipping the hand in a solution, in the development of photographic plates, in the course of employment. This dipping occurred some 500 times each day, during a week. The worker was incapacitated and had to give up work. Compensation was asked for but refused. The case was taken to the Supreme Court and the court said: "It is not an accident within the Workmen's Compensation law and compensation cannot be awarded, for an accident is an event which takes place without foresight and expectation,

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(I)- Supreme Court of New York. 191 N.Y.S.,354,(1921)

and which occurs on the instant, rather than something which continues, progresses, or develops.

Jellico Coal Co.v. Adkins (I)

Adkins was taken ill while at work at the Jellico Coal Co. mine. It was discovered by a physician that Adkins was suffering from a serious disease as a result of working in impure air in the mine. His condition gradually became worse and he finally died. His widow asked for compensation but was denied. The court's decision was:

The Workmen's Compensation Act provided that personal injury by accident shall not include disease injury "except where the disease is the natural and direct result of a traumatic injury by accident" implies that some external physical force actually directed against the body must occur to constitute "traumatic injury by accident", and therefore, the Compensation Board has no jurisdiction to allow compensation to an employee suffering from diseases caused by impure air in the employer's coal mine. "Traumatic" is defined as "caused by or resulting from a wound or any external injury".

Meade Fiber Co. v. Starnes (2)

Starnes was engaged in lifting and moving sacks of soda ash while in the employ of the Meade Fiber Co.

(I) Court of Appeals of Kentucky. 249 SW, 972, (1923)
(2)-Supreme Court of Tennessee. 247 SW, 989, (1923)

He was not provided with goggles or mask of any sort and so became very ill from inhaling the soda ash dust which permeated the air while he worked. His throat became severely irritated; sneezing and coughing were at times uncontrollable. He soon had to give up work and applied for compensation. The Court said:

Under the Workmen's Compensation Act defining "injury" and "personal injury" to mean only injury by accident, arising out of and in the course of employment, and not a disease in any form, except as naturally resulting from the injury, and providing in Section 3 for compensation for personal injury, a disease caused by breathing dust caused by the work of moving sacks containing a chemical used in the employer's business is not a compensable injury; the word "accident" as used in the statute, implying that casual, or fortuitous. Compensation was denied.

Special Judge Smith, who delivered the opinions of the court said:

We cannot conceive that the breathing of dust, caused to arise necessarily from the very work being performed, has in it any element of accident. The material being moved was in the form of dust. It was contained in sacks. The very nature of the material and its container and the movement thereof, necessarily and not accidentally, caused the dust to float in the air and to be breathed by the workmen. There was no accident. The suit was dismissed.

Ferris v. City of Eastport (I)

John A. Ferris was a volunteer fireman in the City of Eastport. On Nov. 27, 1921, a fire alarm called out the volunteer department and Ferris, in the course of his duties got into a position where a quantity of snow saturated with water fell upon him and thoroughly drenched him. Two days later pneumonia developed and he was sick several weeks for which he claimed compensation from the City. Industrial Accident Commission rendered an award in his favor, which was affirmed by the Court below. On appeal this finding was reversed, the court, by Judge Hanson saying:

In the instant case we are persuaded that the Commission has gone outside the letter and spirit of the statute when it holds that exposure "to sleet and water" or "slush from the roof" or "through exposure his clothing again became soaked", or that "the sudden and unusual exposure was too much for his system" or that the "exposure experienced by Mr. Ferris at the fire" constitute a personal injury by accident.

The commission may be right in the conclusion that the predisposing cause of pneumonia from which Mr. Ferris unfortunately suffered was exposure during the fire. It may be equally true that the predisposing cause of pneumonia arose from other causes. In either event, the finding of the commission that

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(I)-Supreme Judicial Court of Maine. 122 A, 414,(1923).

pneumonia was due to exposure is a finding of fact and is final, but the finding that Mr. Ferris is entitled to compensation both for medical treatment and for incapacity to work, according to the provisions of the Workmen's Compensation Act, is error in matter of law.

Mauchline v. State Insurance Fund (I)

In February, 1922, C. A. Mauchline was obliged to give up work because of an illness which had extended over several months. Employed by the Shinn Coal Co. and required to work in rooms where generators gave off smoke and fumes, an illness known as "emphysema" was contracted and became worse until his disability. He put in a claim for compensation which was granted by the compensation b ard and the lower court. The State Insurance Fund brought an appeal. In holding that "emphysema" was an occupational disease and not compensable under the statute, the Supreme Court said:

To be an accident, within the Workmen's Compensation law, the injury must usually result from some undesigned event occurring at a part'cular time. This condition would be met in the instant case had the "emphysema" resulted from inhaling the smoke and fumes on the single occasion, but that is not known. On the contrary, the medical evidence indicates that such condition is normally of slow development and probably here came on

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(I)-Supreme Court of Pennsylvania. 124 A, 168 (1924).

gradually from continued contact with the smoke and fumes. If so, it was not an accident but the result of an occupational disease, the risk of which the employee assumes and for which the statute provides no compensation."

The case was not held within the rule that "compensation may be given for an accidental injury which sets in motion a dormant malady or aggravates an existing disease, so that the death or disability can properly be attributed to such aggravation", because there was no evidence that Mauchline had any incipient disease before August, 1921. Judgment was reversed.

Lough v. State Industrial Accident Commission (I)

Fred Lough was injured on the head, October 1, 1919, by a heavy bolt which fell upon it. The disabling effects were not immediately apparent, but subsequently a partial insanity affected the claimant and he was mentally unable to protect his rights. He applied for compensation in 1921 but was refused under the provision of the law which requires claims to be filed within three months after date of injury. The case was taken to the Circuit Court of the County which upheld the commission. It was appealed to the Supreme Court of the state which upheld the Circuit Court. Judge Burnett said:

Without making any exception in favor of the

(I)- Supreme Court of Oregon. 207 P, 354, (1922).

insane the disabled or the infant, the legislation has seen fit to prescribe the terms upon which the bounty of the State may be enjoyed. Those who would not avail themselves of the privilege thus extended must comply with its terms, and it does not lie within the power of any judicial tribunal, however beneficial it may be, to add terms that have not been put there by the law making pwer. We may well regard this case as one of great misfortune, and yet we are powerless to extendrelief where none is awarded by the statute. The Oregon law says that notice must be given within three months after the date upon which the injury occurred. The judgment of the Circuit Court must be affirmed."

Young v. Melrose Granite Co. (I)

Julius J. Young was employed by the Melrose Granite Co. using a stone surfacing machine which was operated by compressed air to dress the face of the granite. On August 9, 1920, after a heavy day's work with a defective machine, he complained of an intense pain in his shoulder. The following day he could only work until ten o'clock. He received it because "the muscles which control the shoulder have become atrophied, through degeneration of the nerves supporting them and that these nerves under the heavy strain required by the work of this machine were subjected to excessive traction and became for all practical purposes dead."

(I)-Supreme Court of Minnesota. 189 NW, 426, (1922).

The Melrose Granite Co. took the case to the Supreme Court of Minnesota. The court held there was not enough evidence to support the award in law. Judge Holt, speaking for the court, brought out the legal questions involved:

"Although our legislation as well as that of other States may be said to be patterned in a great measure upon the compensation legislation of England, there is a divergence in the different acts as to injuries sought to be covered. Our act does not seek to cover occupational diseases or gradually inflicted ailments, but confines the injuries to those caused by accident. The compensation act designed to cover cases where injuries result from ordinary overwork, too long continued effort, without any sudden or intense or violent rupture, or collapse of some physical structure or function of the body."

Judgment was reversed.

In re Maggelet (I)

Frank Maggelet had worked for twenty-five years as a cigarmaker. He developed occupational neurosis and became totally incapacitated. Medical authorities showed that it was caused by the stooping position of the employee at his work which produced pressure upon the brachial plexus. The Industrial Accident Board granted him compensation for an occupational disease

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(I)-Supreme Court of Massachusetts. 116 NE, 972 (1917).

which arose out of and in the course of his employment. The Supreme Court reversed the decree, Judge Rugg saying:

"The act does not mention diseases or occupational diseases when it rightly may be described as a personal injury. A disease of mind or body which arises in the course of employment with nothing more, is not within the act. It must come from or be an injury although that injury need not be a single definite act but may extend over a continuous period of time.--- The gradual breaking down or degeneration of tissues caused by long and laborious work is not the result of a personal injury within the meaning of the act.---A nervous condition dependent upon poor posture of the body in our opinion does not constitute a commonly known and well recognised personal injury consequent upon employment--- This record is bare of any evidence to show that it is a reasonably necessary result of the employment that those following it should have neurosis or that the inducing proximate cause of that condition is the employment."

Chop v. Swift & Co. (I)

Theresa Chop was employed by Swift & Co. to carry from one room to another, frozen sausages. She carried from fifteen to twenty-four links at a time. Her left arm became numb from the intense cold and paralysis

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(I) Supreme Court of Kansas. 233, P 800 (1925).

gradually set in. Medical testimony said it came from the exposure to the cold. The trial court said she was not entitled to compensation and an appeal was taken to the Supreme Court, which said:

"The act does not provide for occupational diseases but only for injuries by accident sustained in the course of employment or arising out of it. Was there an accident or was the injury the result of an accident? There was no force or bodily injury of accidental origin. According to testimony, the injury was the consequence of coldness which resulted in exhaustion and low vitality, culimnating in the disease of paralysis."

Being of the opinion that the injury in the instant case could not be regarded as an accident, one within the meaning of the compensation act, the court affirmed the judgment of the trial court.

Linnane v. Aetna Brewing Co. (I)

Linnane was employed as a fireman for the Aetna Brewing Co. from 7:00 A.M. to 3:00 P.M. Because of a storm he was called to work at 2:00 A.M. on December 14, 1915 and without breakfast he walked almost a mile through deep snow to the brewery. When he arrived there he was exhausted and had to work 12 hours in wet clothing. He became ill; pneumonia developed; and he died. Compensation was awarded but reversed because the court

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(I)- Supreme Court of Connecticut. 99, A 507, (1916).

held that the death was not the result of accidental "personal injury" as required by the act in order that compensation may be granted---while unusual weather conditions might be classed as accidental, at least as concurring with the untimely and prolonged hours of labor, the resultant exhaustion, though accidentally incurred, could not be said to be "in and of itself a bodily injury" within the meaning of the act.

A study of the decisions of the fore-going cases will disclose the fact that the various Workmen's Compensation Acts as they were enacted did not adequately take care of occupational diseases. In fact no Workmen's Compensation Law in its original form compensated for occupational diseases. There were three states covering occupational diseases in 1915 and only eleven and the Federal Government covering them in 1925.

Today, under the Workmen's Compensation Laws of eleven states and three territories, provision is made for occupational diseases. They are California, Connecticut, Kentucky, Illinois, Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Wisconsin, Hawaii, Porto Rico, Phillippines.

"....Minnesota, New Jersey, New York and Ohio have a scheduled list, while California, Connecticut, Illinois, Hawaii, North Dakota and Wisconsin allow for occupational diseases in general terms. Massachusetts has in some cases construed the term "injury" to cover certain occupational diseases. In states where there is a specific schedule the

effect of the law is to commit a manifest injustice, as workers who are disabled as the result of exposure to some poisonous substance or for some disease which is included in the list receive compensation but in the same factory a worker who is equally disabled, as a result of his employment but from a cause which is not specified in the schedule is not entitled to compensation."(I)

"Under the Federal law and under the Maryland law (by recent judicial construction), diseases arising out of employment, indefinite or with some qualifications or exceptions are compensated. The tendency und er these latter laws istto hold industry responsible broadly for all ill-health among employees. Thus it has been held in Connecticut, in effect, that if an employee goes to work when he is unfit, because suffering from disease, and the work, though neither hard nor unhealthy nor under insanitary conditions, results in lessened resistance to the disease, the employer is liable for compensation for the results of the disease." Dupre v. Atlantic Co. 9 (98 Conn. 646) and Kovaliski v. Collins Co. (102 Conn. 6) confirm this law. (2)

(I)- McCord, Dr. Carey P. Compensation For Occupational Diseases. National Safety News. (October, 1928) p.65.
(2)- U.S.Insurance Bulletin, Department of Commerce XXVII.

CHAPTER III

THE PRESENT STATUS OF OCCUPATIONAL DISEASES IN THE COURTS

As case after case of occupational diseases came up which could not be recognized by the courts as coming under the term "accident", the compensation laws were slowly expanded so as to include them. The more recent acts contain special provisions or a list of specific diseases compensable.

"The tendency of legislation at the present time is to broaden the Workmen's Compensation Laws to include occupational disease- a purpose the justice of which no one can dispute but even though it is admitted that it is right and proper that industry should compensate its workers for diseases incurred as a result of their employment, the fact remains that in many instances it is impossible to differentiate between occupational diseases and ordinary diseases. Hernia, for example, is certainly not an occupational disease, but when a man lifts a heavy box and suffers from strangulation, he claims compensation and receives it. This is true of various other ailments such as heart disease, vertigo, infections, etc; and it follows therefore, that medical work directed toward the discovery and prevention of disabling conditions will reduce this drain both upon the worker and upon industry."(I)

Compensation commissions and courts gradually adopted a broader interpretation of the compensation laws and granted claims for occupational diseases. Today, many diseases not specific occupational diseases are being recognized.

(I)- Health Promotion by Employees Benefit Associations. Monthly Labor Review, XXVIII, (January,1929) p.72.

The following five cases show this broader inperpretation.

Wasmuth-Endicott Co. v. Karst (I)

Clarence N. Karst and other workmen were employees in a cabinet factory of the Wasmuth Co. Drinking water was furnished from a well nearby, which, without the knowledge of the company, became contaminated. Karst became infected with typhoid germs and was confined to his bed for several weeks. Proceedings were brought under the Workmen's Compensation Act on the grounds that Karst had received a personal injury by accident arising out of and in course of his employment. The employer appealed from the decision of the board. The contention was based on the provision of the act that directed compensation "for personal injury" to also the provision that defined "injury" and "personal injury" to mean "only injury by accident arising out of and in the course of employment and shall not include a disease in any form except as it shall result from the injury." The Appellate Court refused to uphold this view, and affirmed the award of the board. Presiding Judge Batman stated the opinion of the court, in part, as follows:

"An accident is any unlooked-for mishap or untoward event not expected or designed. Applying this definition to the facts disclosed by the evidence in this case, it is clear that the entering of typhoid germs into appellee's intestines by reason of drinking the polluted

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(I)- Appellate Court of Indiana. 133 NE, 609, (1922).

water furnished him by appellant, for that purpose while in its employ may be rightfully be termed an 'accident".

But the mere fact that an accident happens to an employee will not authorize the payment of compensation unless it results in personal injury and disability to work. The resulting injury and disability to work, however, need not be concurrent with the accident in order to warrant payment of compensation.

It cannot be said that this definition is too comprehensive in view of the policy of this court, in harmony with the courts of other jurisdictions to give the provisions of the Workmen's Compensation Act a liberal construction in favor of the employee, in order that its human purpose may be realized."

Van Vleet v. Public Service Co. of York (I)

Frank M. Van Vleet was employed by the Public Service Co. to install gas service in residences and business places, to make repairs and to look after the gas distribution generally. While working in a hole in the ground on November 1, 1921, he was overcome by escaping gas and had to remain at home for several days. About February 1, 1922, he was gassed again at the plant, and was confined to bed. He stopped work March 1st and died March 18th. His wife was

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(I)- Supreme Court of Nebraska. 195 NW, 467 (1923).

awarded compensation by the commissioner, which award was affirmed by the District Court. The defendant appealed on the ground that "there was no accident and that death resulted from an occupational disease, which would not be compensable under the statute". The claimant contended that the death of Van Vleet was the result of an accident arising out of and in the course of employment.

From the testimony of medical experts, the court was of the opinion that:

"The fair inference is in accordance with the finding of the labor commissioner and of the District Court that the death of the employee was caused at least in part, by the gassings of Nov. 1st, and Feb. 1st, that the immediate cause of death was encephalitis due to gas poisoning. While the case is close to the line, we are unable to say that the finding of the lower court is manifestly wrong." The judgment for the claimant was therefore affirmed.

GILLILAND v. Edgar Zinc Co. (I)

On a warm day in May, 1920, S. H. Gilliland, an employee of the Edgar Zinc Co. was shoveling his one horse cart full of cinders as his employment required him to do. The cinders, which were moved to a dump nearby, were warm and sometimes hot. The place where the cinders were loaded was in full glare of the sun.

(I)- Supreme Court of Kansas. 209 P, 658, (1922).

There was a drinking fountain inside the furnace building within easy access at which employees could get ice-cold water. About two o'clock in the afternoon, Gilliland went into the furnace building for water. Two hours later he became weak and complained that he was sick. Then he fell unconscious and died one hour later. An award of compensation under the Workmen's Compensation Law upon the grounds that Gilliland "died from an accident arising out of and in the course of his employment." The company challenged the correctness of this award and the case was taken to the Supreme Court of the state. Judge Dawson, speaking for that court in affirming the award said:

"Here there was the added factor of the overheating traceable to the workman's task of shoveling warm ashes on that unusually warm afternoon, and this brought about the condition which gave such sudden and fatal effect to the drinking of the ice-water. This justified the trial court's conclusion that within the scope and intent of the Workmen's Compensation Act the plaintiff's husband's death was caused by an injury arising out of his employment as well as in the course of it.

Austin v. Red Wing Sewer Pipe Co. (I)

Henry Austin employed by the Red Wing Sewer Pipe Co. was employed in unloading coal from a gondola car

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(I)- Supreme Court of Minnesota 204 NW, 323, (1925).

when a piece of soft coal, weighing three or four pounds fell back and struck him upon the cheek. The would bled profusely. It was washed and bandaged, and since has been the subject of bandage and care. The cancerous nature of the injury was not definitely known for about a year and a half, during which Austin worked practically all the time. When the nature of the injury became known a claim was made for compensation. The commission allowed this claim. The case was taken to the Supreme Court on the ground that the evidence did not justify the award. The medical testimony on the claimant's behalf was to the effect that the cause of cancer is not definitely known and that the various theories that are advanced were said not to contradict the testimony given, taken together with the other evidence in the case. The court said in part:

"It is not for us to decide as to a scientific fact that trauma causes cancer or that cancer is a medical mystery. The employee in the course of his employment suffered an injury, upon his cheek, at a place previously free from blemish. Under constant care, it developed a malignant growth which was eventually diagnosed as cancer. ----the injury was the legal cause and the result should be compensable."

Fraze v. McClelland Co. (I)

Fraze employed by the McClelland Co. as a woodworker was on September 28th, engaged with five or six other employees in moving a heavy oaken door toward an elevator. The door tipped in his direction and squeezed him by the weight of it against the wall. The complainant became ill and on the third day was sent home by the company's doctor. An abscess developed in the injured lung which gradually developed into tuberculosis. Compensation was allowed by the industrial commission and the District Court on appeal. The insurance carrier and employer appealed on the ground that there was no causal connection shown between the injury and the tuberculosis.

The Supreme Court noticed that the evidence showed no illness prior to the injury but did show a rapid development of tuberculosis after the injury, together with medical authority showing that tuberculosis may be accelerated by traumatic causes.

Thus the evidence showed that tuberculosis was the result of the injury and the Supreme Court affirmed the judgment.

With this broad interpretation of the Workmen's Compensation Acts on the part of the courts, occupational diseases were more thoroughly investigated, the causes studied, data collected, and statistics compiled.

(I)- Supreme Court of Iowa. 205 NW, 737, (1925).

Dr. Hayhurst made a study of health hazards and the occupational diseases that may result from such hazards. From this study he made a classification of occupational diseases. In an address before the New England Health Institute, at Hartford, Conn., on April 23, 1929, Emery R. Hayhurst said:

"Causes of Occupational diseases are multiple, but may be grouped briefly under the headings: (I) The personal status or physical health of the individual and his personal hygiene or mode of life; and (2) Hazards in the environment which may be natural, that is, due to the location on the world's surface, or occupation.

"Specific occupation diseases are:

1 - Poisonings
2 - Mechanical irritations
3 - Friction and tension
4 - Fatigue diseases
5 - Infections
6 - Diseases following injuries
7 - Illumination affections
8 - Temperature disabilities
9 - Noise deafness
10- Atmospheric pressure diseases

"Diseases partly occupational are:

1 - Diseases of respiratory system; coryza; rhinitis; pharyngitis; ititis media; laryngitis; acute and chronic bronchitis, asthma, emphysema; cirrhosis of the lungs; pleurisy; tuberculosis; pneumonia; lung abscess.
2 - Diseases of the circulatory system; hypertension; hypotension; hypertrophy of the heart; arteriosclerosis; aneurysm; varicose veins; anemia; hemorrhages.
3 - Diseases urogenital: bright's disease; stone; bladder tumors; sterility; priapism, etc.
4 - Diseases of the alimentary system: gastritis; ulcer enteritis; appendicitis; hemorrhoids; gallstones; cancer, etc.
5 - Diseases of the skin: pruritis, eczema, ulsers, furunculosis, chronic fissures, epitheliomia.

6 - Diseases of the nerves and muscles: paralysis, spasm, neuralgia, sciatica, muscular atrophy, insomnia, headache, neurasthemia, husteria, psychoses, etc.
7 - Diseases of the eye and ear: myopia; conjunctivitis; retinitis; optic neuritis; deafness, etc.
8 - Diseases of the bones: necrosis of the jaw, nasal septum, rheumatism, etc.
9 - Diseases of the endocrinal system: thyrotiosis.
10- Diseases of nutrition: emaciation; obesity; gout; acidosis; diabetis; cancer." (I)

The New Jersey Department of Labor Report from June 1, 1924 to June 30, 1925, issued in Trenton, 1925 shows that there were sixteen deaths from occupational diseases in New Jersey, twelve of these being due to tetraethyl lead, two to lead refining, and one each to aniline and benzol (silk finishing). The 224 cases of nonfatal occupational diseases are recorded as follows:

Anthrax	15
Benzine	1
Benzol:	
Amiline	4
Benzal	2
Dinitrochlorbenzol	2
Orthotoluidene	1
Paranitraniline	1
Paranitrochlorlenzol	1
Caisson disease	3
Carbon monoxide	1
Chrome poisoning	4
Cyanamid	1
Dermatitis	29
Inflamation of eyelids (laquer)	5
Lead:	
Chemical plant	1
Enameling	8
Ink manufacturing	1
Insecticides	2
Junk yard	1
Lead batteries	1
" cables	2
" refining	19
Manuf. of lead oxide	1
Oilcloth	1

(I)-Hayhurst, Emery R. Occupational Diseases. Monthly LABor Review, XXIX, (July, 1929), p.29-51.

Oil refining	1
Paint and dry colors	9
Painters	12
Red lead	3
Soldering	3
Tetraethyl lead	85
Mercury:	
Primary batteries	1
Chemical manuf.	1
Storage batteries	1
Zinc poisoning	1
TOTAL	224 (I)

OCCUPATIONAL DISEASES IN MASSACHUSETTS (2)

The annual report of the Department of Labor and Industry of Massachusetts for the year ending November 30, 1927, contains a report of the division of industrial safety, in which is a review of the 247 cases of occupational diseases investigated. Of the 247 cases, 25 were women and 222 were men, 5 of the cases being fatal, (one woman and four men).

The 247 cases investigated, classified by diseases and by industries follows:

DISEASE		INDUSTRY	
Industrial dermatitis	77	Mechanical	52
Lead poisoning	47	Tanneries	51
Acid, Oil, and Fume Poison	20	Metal Trades	29
Chrome Poisoning	18	Textile	22
Gas "	16	Shoe Manufacturing	20
Benzol "	13	Manuf. Chemicals	15
Industrial Eczema	12	Woodworking Estab.	10
Tuberculosis	8	Founderies	8
Anthrax	8	Rubber Mills	7
Cyanide Poisoning	4	Paper Making	2
Dust in Lungs	2	Mercantile	1
Other Industrial Poisoning	22	Miscellaneous	30
TOTAL	247	TOTAL	247

(I) New Jersey Depart. of Labor Report, July 1, 1924 to June 30, 19
(2) Monthly Labor Review, XXVII (October, 1928), p. 715-16.

DISEASES~TIME LOST~COMPENSATION PAID~IN WIS.~1928.(1)

TABLE~I

OCCUPATIONAL DISEASES	NO. OF INJURIES SETTLED~1928				NO. OF WORK DAYS, TIME LOST~1928				AGGREGATE AMOUNT PAID, 1928~
	TOTAL	DEATHS & P.T.D	P.P.D	T.D	TOTAL	DEATHS & P.T.D	P.P.D	T.D	*
TOTAL	395	10	15	380	74,702	60,000	5,700	9002	$ 83,093
METALLIC POISONS	37			37	1,179			1,179	3,297
TOXIC GASES, VAPORS, FUMES	34	4	1	29	26,126	24,000	1,665	461	27,449
TOXIC LIQUIDS	124			124	2941			2941	7,200
IRRITANT DUSTS, FIBERS	62	3	1	58	19,627	18,000	300	1327	16,374
GERMS	26			26	644			644	1,457
MISCELLANEOUS IRRITANTS	47	1		46	6827	6000		827	1,568
AIR COMPRESSION	5	1		4	3057		3000	57	4,791
EXTREMES OF HUMIDITY	8	1		7	6100	6000		100	8,018
EXTREMES OF TEMPERATURE	19			19	305			305	647
EXCESSIVE LIGHT	3			3	71			71	179
INFLAMATION OF JOINTS TENDONS, MUSCLES	23			23	783			783	2,140
OCCUPATIONAL DISEASES NOT CLASSIFIED	7	1	2	4	7042	6000	735	307	9,973

*P.T.D=PERMANENT TOTAL DISABILITY
P.P.D= " PARTIAL "
T.D= TEMPORARY DISIBILITY.

(1) WISCONSIN LABOR STATISTICS, INDUSTRIAL COMMISSION OF WISCONSIN, XX, (SEPTEMBER 5, 1929).

The following classification of occupational diseases was made from the author's study of court cases:

A- List of diseases resulting from occupations.

1 - Caisson Disease
2 - Dermatosis
  a- Anthrax - tanners
  b- Cancer- tar and petroleum workers
  c- Chemical Eczema- wood-workers
  d- Diseases from aniline, dye, ink-dyers, printers
  e- Diseases from lime, soda- dish-washers, mortarers
3 - Dust diseases
  a- Calcium- cement workers
  b- Carbon - coal workers
  c- Metal - silver polishers
  d- municipal - street cleaners
  e- Powder- Cosmetic workers
  f- Silica- granite workers
  g- Tobacco- tobacco workers
  h- Vegetable- cotton workers
4- Eye Diseases
  a- Eye strain
  b- Eye inflamation
  c- Loss of sight
5- Hernia
6- Industrial Poisons
  a- Alcohol
  b- Arsine
  c- Benzol
  d- Brass
  e- Chrome
  f- Cyanide
  g- Infection
  h- Lead
  i- Mercury
  j- Radium
7- Nervous Diseases
  a- Noise
  b- Monotony of task
  c- Shock
8- Respiratory Diseases
  a- Influenza
  b- Pneumonia
  c- Tuberculosis
9- Typhoid
10- Miscellaneous Diseases
  a- Erysipelas
  b- Freezing
  c- Glassblower's Arm
  d- Heat Prostration
  e- Heart Disease
  f- Housemaid's Knee
  g- Rheumatism
  h- Telegrapher's Cramp

Based on the list of occupational diseases on the preceding page, the author will briefly discuss each disease and cite, whenever possible, a typical case compensated for the particular disease.

Caisson Disease

Men working in caissons or divers at sea are in danger of contracting what is called "Caisson disease". In order to reach the iron chamber the men must pass through what is called a "compression lock". Here they are subjected to a gradual rise of air pressure equal to that of the pressure inside the caisson. Here the worker feels no ill effects but his blood and tissues are being filled with nitrogen. In the body this gas becomes liquefied and it is not until the end of the work when he is about to be "decompressed" that the symptons show up. The decompression must take place very slowly, usually one pound to the minute or else the man's limbs become paralysized. Often he may be placed back in the compression lock and very slowly compressed and decompressed and obtains relief. More often the symptons barely show themselves and when the man arrives hôme he is suddenly stricken. This paralysis may be temporary or permanent. In event of a caisson bursting, the result is usually fatal to the workers. Sudden concussions produce ruptured eardrums.

This disease is now considered an occupational disease. The following case is one compensated for caisson disease:

Williams v. Missouri Bridge & Iron Co. (I)

Williams was employed by the Missouri Bridge and Iron Co. who was constructing a bridge over the Rouge River. In building the iron piers it was necessary to use a caisson. Williams worked in the caisson which extended about eighty feet below the surface and subjected him to an atmospheric pressure of forty pounds. Coming from the caisson, the air pressure was released too suddenly (two pounds per minute) and Williams fell over receiving fatal injuries. Compensation was granted but the employer appealed. The court affirmed the award saying that it grew out of his employment; that it was not only an occupational disease, but was hastened by the inattention and neglect of another.

Dermatosis

Skin affections form an extremely large and exceedingly important group of occupational diseases, involving a tremendous number of industries and industrial processes. The description of the disease reads:

"Eczematous ulceration of the skin produced by dusts or liquids or ulceration of the mucous membrane of the nose or mouth produced by dust."(2)

(I)-Supreme Court of Michigan. 180 NW, 357, (1920).
(2)-Barnett,H. and Shaw, Cecil. Accidental Injuries to Workmen. p.66.

The commonest of skin diseases known as eczema is not usually due to a single cause but to a variety of irritants, acting either from external irritants or from internal blood conditions. Some workers are predisposed, because of an inherited weak skin, to sensitization. Occasionally there is present a bilogic or chemical correlation between the skin and irritant which will result in a pronounced reaction. When it is inherited it is known as "idiopathic" and when reactionary it is said to be "traumatic".

"The symptoms of idiopathic and traumatic eczema are practically identical but the former often runs a tedious and prolonged course while the latter, unless there are complications, has a definite limit. In making a differental diagnosis, therefore, the history and duration of the disease and the exact nature and kind of material worked among must be considered.---All materials which destroy the horny layer of the skin produce a prompt effect, examples of materials having an immediate solvent action being the alkalies and alkaline earths- lime, soda, and the sulphides. The substances produce sores which are superficial rather than deep and there is always risk in working with them if they are handled in sufficient strength. Other harmful substances such as chrome have little effect on the horny layer of the skin, but as soon as it is broken, oxidation or other

chemical action starts. The time taken by a traumatic sore to heal depends upon the extent and depth of the lesion. There is no danger of malignancy from certain substances such as chrome, although the irritation from it may be lifelong, while other substances such as tar and soot may cause malignant growths. The malignancy can not be brought about solely by the irritation of acute or chronic inflamation, but depends upon specific activity of the agent. It was not until recently that the latent effects of some of these cancer producing substances have been realized, such materials as soot, tar, and spinning oils producing cancerous growths in many cases only after many years of exposure or long after exposure has ceased."(I)

Industrial dermatosis includes such diseases as anthrax, cancer, chemical eczema, and skin eruptions from dye, aniline, ink, soda, and lime.

Anthrax appears on the skin in the form of a local pustle and occurs among tanners, butchers and wool-sorters. It is due to an organism which gains entrance into the system through a scratch in the skin, by inhalation of dust to which spores are adherent, or through the stomach by eating infected flesh. Hides, skins, hair and wool which has come in contact with the infected blood hold the infection for a long time after they are dry. The pulmonary form is especially dangerous as death may occur within twenty-four hours.

(I)-Prosser, Dr.R. Skin Diseases of Occupations. Monthly Labor Review XXIII. (October. 1926). p.731-733.

The following case is one compensated for anthrax.

Chicago Rawhide Mfg.Co. v. Industrial Commission (I)

Tophoven was employed by the above mentioned company to dress hides. He scratched a pimple on his neck which became infected with anthrax bacilli anc caused his death. Compensation was awarded the widow but the employer brought error on the ground that the finding of an accidental injury was not warranted by the evidence. The Supreme Court affirmed the award saying:

"It is a reasonable conclusion from the evidence that the anthrax bacillus came in contact with the abrasion on Tophoven's neck, caused by his scratching off the pimple.---The swelling followed, malignant pustle developed and speedy death resulted.---These circumstances tend to show that Tophoven contracted the disease by accident, arising out of his employment."

Tar and petroleum workers, mule spinners in cotton mills, makers of aresenical dip for sheep, and makers of artificial flowers, and wallpaper are subject to cancerous ulcerations.

"These substances are agents in the causation of cancerous growths in industry, an examination of men in one distillery showing that a serious proportion had evidence of some precancerous activity. Cancer has been produced experimentally in white mice after

(I)- Supreme Court of Illinois. 126, NW, 616, (1920)

a four months interval following a single painting with tar.---Cancerous skin growths, it is said, invariably follow exposure to tar, arsenic, aniline, and certain petroleum and tar products, and to radiations if the exposure is sufficiently protracted or repeated. Experiments with sensitive animals have shown that exposure to these agents need be neither long nor frequent in order to induce cancer and if this holds good for the human skin it can reasonably be assumed that even a casual or occasional contact with these substances may have serious consequences."(I)

When non-cancerous oils are exposed to a high temperature, as is necessary in many industrial processes they often become cancerous producing oils. Petroleum oils are less likely to produce cancer than coal tar oils. Spinners in cotton mills often become infected by the lubricants or spinning oils used. The British Government made a survey in 1928 and found 500 cases of cancer occurring in that industry.

A summary of a case compensated for cancer will be found on page 40.

DUST DISEASES

One of the most common of the occupational diseases is the one caused by dust particles in the atmosphere. The dusty air of a factory is not only obnoxious to the

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(I)- Occupational Dermatosis- Monthly Labor Review XXIII, (October, 1926), p.733.

worker but may cause a noted decrease in his efficiency and an early death. Not all dusts are harmful but certain ones are poisonous. The most dangerous types are siliceous and zinc while the least dangerous are thought to be coal and plaster of Paris. Silica dust which is the major constituent of sand, quartz, and granite is the most deadly. It causes a form of fibrous growth in the lungs, resulting in a slow loss of lung function and pulmonary tuberculosis. Dust is either organic, like flour and cotton, or inorganic like lead and steel. It may affect the lungs, nose or throat, causing asthma, bronchitis, pneumonia, or tuberculosis.

"To the group of diseases caused by dust a French physician, Layet, gave the name of nosoconioses. According to the tissues or organs affected nosoconioses are subdivided into pneumoconioses or dust affecting the lungs, enteraconioses when the gastro-intestinal tract is implicated, rhinoconioses the nose and throat, dermataconioses the skin, andophthalmacomoses the eye." (I)

Some of the occupations that place the worker in danger of dust diseases are mining, quarrying, stone-cutting, cotton and linen weaving, upholstering, mattress making, workers in flour and feed mills, cutlers and potters.

Regarding the dust hazard in industry, Winslow says: "...exposure to minerals and metallic dusts, as among brass workers, marble and stone cutters and polishers is

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(I)- Oliver, Sir Thomas. Occupations. p 17.

accompanied by tuberculosis ratios at least one third greater than the ratio for all occupations for males, and at some age periods twice as great---in other words, one or two out of every thousand persons in these dusty trades are sacrificed each year to the special hazards of their employment."(I)

E. L. Middleton made a study of the dust in the cotton card rooms. He came to this conclusion: Of the processes of cotton manufacture the preliminary stages were always the source of the greatest amount of dust, and the dust produced in the card room has generally proved the most difficult to control during the great advances which have been made in the design, structure, and ventilation of the factory, and in the improvement of machinery. ----cotton hairs and other parts of cotton are present in excessive quantity in certain of the stripping processes and breathing the atmosphere charged with these particles produces discomfort in a person unaccustomed to the dust. It is probable that this dust is capable of producing changes in the lungs; the nature of this change would be toward chronic bronchitis."(2)

Weaver's Cough is caused by the growth of a mold which develops during the storage of the damp cotton threads, on the beams and which is given off in the form of a dust. This dust contains spores, fragments of mycelium

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(I)- Winslow, C.E.A. Public Health Reports, XXXIV,(1919)p.1171.
(2)- Middleton,E.L. Dust In The Cotton Card Rooms, Journal of Industrial Hygiene VIII, (October, 1926), p.436.

and causes acute irritation in the air passages, a feeling of obstruction in the lungs, and a paroxysmal cough. It often develops into a lung disease, resembling tuberculosis.

The following case for death from breathin dust-laden air was compensated.

Carroll v. Industrial Commission of Colorado (I)

Joseph Carroll was employed pitching hay in an alfalfa mill which was in an inclosed building. The air was constantly polluted with dust from the hay, alfalfa meal, and machinery. The strenuous exertion of his work in the dust-laden atmosphere brought on an attack of heart trouble causing his instant death. His wife made a claim but it was refused on the ground that his death was not the result of an "accident". An appeal was made; the district court affirmed the decision; an appeal was again made. The Supreme Court ordered an award saying:

"The proximate cause of the death of Joseph Carroll was the condition of the air in his place of employment, or the fact that it was dust-laden. ---had it not been for such condition the death would not have occurred at the time.

Such condition of the air which decedent was required to breathe brought on an attack of heart

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(I)- Supreme Court of Colorado. 195 P, 1097, (1920).

trouble resulting in death. The dust-laden condition of the air was the cause, and the fatal attack of heart failure was the result."

EYE DISEASES

Sight is man's most valuable asset. Defective illumination may be a cause of diseases of the eyes of the worker. One eye disease called "nystagmus" is the result of insufficient light. It is often found among miners. This disease is very distressing and usually the miner has to give up underground work. Even if cured he is liable to suffer again if he returns to mining.

Fine work, such as engineering work, sewing-machine and embroidery work, bookkeeping and accounting cause serious eyestrain on the worker if the light is deficient. Lace-making, weaving, etc; likewise cause eyestrain and an impairment of sight.

Intense light is just as harmful on the worker as insufficient light for it produces a special kind of cataract which is probably curable only by operation. Glassblowers, electric welders, workers exposed to the rays of molten metal, intense sunlight or close workers with glazed materials that give off a sheen are subject to this disease. Painters, glazers, woodworkers have their eyes injured by fumes or gases arising out of the materials they are using.

Common glare from badly placed windows, work benches, light fixtures, etc; cause headaches and diminished ability to see. Intense heat and smoke tend to disease and impairment of sight.

Every possible assistance, in the way of adequate and satisfactory light should be given the worker so as to relieve the strain on his eyes and to protect his sight. The wearing of goggles, eye-shades, and shields must be made compulsory in all industries where the worker's sight is endangered.

HERNIA

Another source of litigation under the Workmen's Compensation Act is the disease "hernia", alleged to be the result of an injury to a workman while engaged at his employment. Back injuries and strains are recognized as responsible for from seven to eight percent of all accidents in industry. This percentage was obtained ed by Carl G. Johnson from a study of the records of several large oil companies in southern California. In his examination of 80,000 patients, 6,000 were suffering from muscle strains caused by occupations. Much loss of time, money and temper was incurred. The disease extended into months and years. Many were disabled for life. "----Many of these patients were never able to return to their old jobs, having suffered unremediable damage as the result of one lifting effort."(I)

The records of the Industrial Accident Commission of the State of California for 1926 show a total of 246,083 men injured in this way. Hernia may be produced by strain, from lifting heavy weights, from a violent

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(I)- Johnson, Carl G. Invisible Injuries. National Safety News, XVII, (February, 1928), p.11-12.

jerk, or from a fall. Often a weak inherited abdominal wall hastens hernia. Men are more susceptible to it than women. Only a few states recognize hernia as an occupational disease to date. The following case was awarded by the Supreme Court of Minnesota in 1923.

Babich v. Oliver Iron Mining Co.(I)

Vinko Babich and a fellow workman were engaged in timbering a drift in the mine of the above company. While in the act of lifting the large end of a timber, Babich felt a sharp pain and unable to continue work. After an operation for hernia, he asked for compensation. This was denied by the Industrial Commission. Babich then brought certiorari. Justice Holt, speaking for the court said:

"---the difficulty seems to be that the statute was given a narrow instead of a liberal construction. The idea prevailed that in no case can the sudden giving way of some structure of the body unaccompanied by some external untoward event be considered accidental injury within the compensation act. Our construction of the act so far has indicated a contrary view. ---The compensation law of Minnesota was adopted after a study of the operation and construction of the English law and after the courts of that country had receded from the narrow construction of accidents as applied to injuries causing hernia. The Supreme Court

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(I)- Supreme Court of Minnesota. 195 NW, 785, (1923).

therefore remanded the case to the Commission with directions to amend and conform with the court's opinion.

INDUSTRIAL POISONINGS.

The rapid growth of industry has led to the introduction of new processes of manufacture which, on the other hand, have brought in new hazards and have exposed workmen to poisonous substances. Federal and state investigations show that next to the "dust diseases", the greatest number of deaths and disability cases are from work in the so-called "harmful substances". These substances have been classified as acid, fumes, gases, and infections. Phosphorous, lead, mercury, analin, and arsenic poisonings are among the more familiar types.

As far back as 1820, the fumes, dust and liquid form of arsenic was known as a cause of cancer among copper smelters, "sheep-dip" men, and workers in Paris green, wallpaper, or artificial flowers. This poisoning produces a malignant cancerous growth which usually becomes evident after several years contact. It affects different people differently, causing, besides cancer of the skin, ulcers, paralysis, neuritis, eczema, bronchitis, or asthma. The following case of arsenical poisoning was compensated.

Matthiesen and Hegler Zinc Co. v. Industrial Board (I)

Joseph Adrian was employed by the Matthiessen and Hegler Zinc Co. for thirty-eight years. During

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(I)- Supreme Court of Illinois. 120 NE, 242 (1918).

the last fifteen years had the job of fireman. He was supposed to scrap the scum or oxide from the surface of the molten zinc ore twice a day. This scum was hot and gave off arsenic fumes. Adrian gradually became ill and died. Compensation was sought and the Board allowed an award. The Company declared that the Workmen's Compensation Act covers only accidental injuries and that Adrian's death was caused by an occupational disease. The court said:

"The word 'accident' is not a technical legal term with a defined meaning and no legal definition has ever been given which has been found both exact and comprehensive as applied to all circumstances. There is no evidence tending in any degree to prove that the arsenical poisoning of Adrian was a disease incident to the occupation of the plaintiff in error."

This is a case where an occupational disease was awarded even though the state had no provision in its law.

Alcohol (wood) poisoning is compensated in some states as shown in the following case.

Fidelity and Casualty Co. v. Industrial Accident Commission(I)

DeWitt was engaged by Jacoby Brothers as a show card sign painter. He used wood alcohol in mixing and applying colors. On January 7th, his eyes became affected and he was unable to use them. An award was granted

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(I) Supreme Court of California. 171, P 429, (1918).

by the Industrial Accident Commission but his employer and the insurance company brought the case before the Supreme Court. The court said:

"This court has held that the phrase 'injuries sustained by accident' as used in the Workmen's Compensation Act is to be given the broader interpretation in harmony with the spirit of liberality in which it was conceived and in which we are required to construe it so as to make it applicable to injuries to workmen which are unintentional and unexpected and which come within the meaning of the term 'accidents' as it is popularly understood.---it is evident that the injury suffered by the applicant as set forth in the findings of fact of the Industrial Accident Board and for which he was awarded compensation was an 'accident within the meaning of the law.'"

Benzol or benzine constitutes one of the most insidious hazards of the present day. It is used in many stains, lacquers, thinners, and paint and varnish removers. This use of benzol is the result of high-speed products. The above articles are high-speed driers. Painters breathe fumes of benzine, wood alcohol, ether, anylacetate, and other volatile solvents. Spray painting is one of the new processes of painting which has been adopted by nearly every industry since its invention in 1915. The Bureau of Labor Statistics made an investigation in 1928 in seventy-one factories and eight government posts to determine what could be done to protect the worker or eliminate the dangers

of the process. The investigators found that industries using spray painting ranged from automobile, furniture, and farm implement painting to lighting fixture, fabric printing, and leather painting. They also noted that while benzol has a characteristic odor it is often impossible for expert chemists to detect the presence of benzol when mixed with acetates. The poisoning results from continual breathing of benzol fumes. These fumes can be removed from the air by any method not involving chemical means.

"A worker breathing air containing 100 parts or more of benzol in 1,000,000 parts of air is working under a substantial hazard. Benzol taken into the system forms a chemical combination with the body tissues, especially the marrow of the bones where it affects the information of red blood corpuscles.

"---In the course of the survey thirty-nine cases of poisoning were found in which disability appeared to have resulted from practices or conditions connected with the process. Usually there was no check upon the ventilation to see if fumes and spray cloud was efficiently removed. Eighteen of the seventy-one plants furnished definite information as to the harmful content in the materials that were being used in spray painting. Thirty-five plants could give no information whatever as to whether or not the materials used contained any toxic ingredients, while in the remaining eighteen plants the coating materials were

known to contain either lead or benzol, but the percentage or amount was not available. Twenty-four of the seventy-one plants did not furnish any sort of a respirator to spray operators; the remaining were not compelled to use them or only used them on certain pieces of work."(I)

In a report on "Chronic Benzol Poisoning Among Women Workers" by Adelaide Ross Smith before the National Safety Conference, the following facts were brought out:

"Benzol as used in the industries investigated produced chronic poisoning in virtually one out of every three women.

The risk of poisoning was not limited to those who worked directly with benzol; but workers who were indirectly exposed through merely working in rooms where benzol was used were also subject to its effect.

Among women who did not show definite signs of poisoning, more than one-third suffered from symptoms many of which in all probability were caused by exposure to benzol.

Susceptibility to benzol poisoning appeared ab ut equally marked among young and old workers."(2)

The fumes of molten brass are deadly to many workers The following case was compensated for this poisoning.

(I)- Spray Painting Hazards- Monthly Labor Review XXVIII, (September, 1929), p.1-30.
(2)- Smith, Adelaide Ross. Chronic Benzol Poisoning Women Workers. Journal of Industrial Hygiene X,(March,1928)p.73.

General American Tank Car Corp. v. Weirick (I)

Joseph E. Weirick was in the employ of the above corporation when he became affected by poisonous gas arising from molten brass. After his death compensation was awarded and an appeal was taken to court. The award was granted. Judge Nichols in stating the opinion of the court said:

"There was evidence that the deceased breathed the fumes from molten brass and was thereby accidentally injured, which injury resulted in death, and we hold that the Industrial Board was fully justified in its finding that the deceased came to this death by accidental means while in the due course of his employment.---An injury may be the result of accidental means though the act involving the accident was intentional.---the injury must be regarded as the cause of death."

Workers who are employed making surgeon's rubber gloves and all india rubber goods as well as those in the manufacture of artificial silk from cellulose are subject to carbon-bisulphide poisoning which often produces a paralysis of the limbs. Workers in plants making explosives or in garages are liable to carbon-monoxide poisoning which causes death in a few minutes.

A new process of plating nickel, thereby making it hard and non-tarnishable has brought about a new poisoning known

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(I)-Appellate Court of Indiana. 133 NE, 391, (1921).

as chrome poisoning. Manufacturers of chromium preparations, chrome colors, color photographs, matches, bleaching of fats, wax, oils, textile printing, wood staining, and plating are some of the industries which the United States in its survey of 1928 discovered as hazards to chrome poisoning. This poisoning produces large, painful, spreading ulcers on the hands, nose, or throat. They are very difficult to heal. Often the eyes are affected.

Poisoning from the use of paint arises from three sources, silica, benzol, and lead. If the painter escapes silica or benzol poisoning he is in content danger of lead poisoning. Lead poisoning was one of the first of the occupational diseases to be compensated. This poisoning may occur from:

1- Inhalation of dust from sandpapering one coat of paint.
2- Entry of dust into either the respiratory or digestive system from mixing dry white lead with oil.
3- Inhaling fumes from burning off paint.
4- Inhaling dust arising from lead paint dried on overalls and drip cloths.
5- Breathing of lead paints nebulized by spray suspended in the air, which may find their way into both the alimentary canal and the respiratory system.
6- Using glazing putty containing lead compounds.

7 - Improper cleansing of the hands before eating lunch.

Persons working in lead become anaemic and usually have a blue line on the gums. There is a general hardening of the blood vessels and as a result of this certain organs, especially the liver and the kidneys become starved ed. The person may suffer from colic, paralysis, blindness, or convlusions. Besides painters, printers are also exposed to lead poisoning. They usually work in poorly ventilated rooms and because of their inactivity have sluggish circulation. Lead poisoning in the printer is slow and chronic and hard to recognize. His resistance becomes greatly lowered and he often falls a victim of tuberculosis.

According to Louis I. Dublin (I), who collected statistics showing the influence of occupation on life and health, for Industrial Insurance Companies, the largest number of lead poisoning cases appear in the age periods of thirty-five to forty-four and forty-five to fifty-four among all occupied males. It is only among painters, pap-rhangers, and varnishers that the figures are large, thus showing the relationship of poison and occupation.

Bergeron's Case (2)

Bergeron was a painter who died of lead poisoning. His employer, dentist, and physician knew he

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(I) Dublin, Louis I. Causes of Death by Occupation. U.S. Bureau of Labor Statistics, CCVII, (March, 1917) p. 5-87.
(2)-Supreme Judicial Court of Massachusetts. 137 NE, 739, (1923)

was suffering from the poisoning for two years previous to his death. The only advice he received was "to be careful". His wife made a claim for compensation against the Burley estate, his employer, and the court held that the employer had knowledge of the disease and that it was an occupational disease. An award was therefore granted in the claimant's favor.

A new form of occupational poisoning has been brought to the attention of the public during the past few years through several deaths in a New Jersey establishment. It is radium poisoning contracted through the painting of watch and clock dials with luminous paint. The United States Government made a survey of thirty-one factories where the 253 workers were directly subjected to harmful exposure to radio-active substances. Twenty-three fatalities and nineteen living cases were discovered. Thirty-three of these were women who were engaged from fourteen months to twelve years painting dials. They were permitted to point their brushes in their mouths while painting and the poisoning was directly due to this. Some of the radium particles were absorbed by the system and led to a slow death. Children of two of these living cases have inherited the poisoning and science seems helpless in saving them from the fate of their mothers.

"----A certain amount of radiation is continually emitted by radio-active substances. Consequently there is constant radiation present in the dial-painting establishments.

---It can not be seen and it cannot be felt, but it is there. The amount can only be determined by electroscopic test. In one establishment visited it was stated that each painter was subjected to an exposure of fifteen micrograms of the radium element for seven hours per day, and six days per week." (I)

These cases are now pending in court.

Alice Hamilton in her study of industrial poisonings states that industrial poisoning is typically chronic, the acute forms are not common; that heat accelerates chemical action and therefore, accelerates the action of poisons; that fatigue lowers resistance to poisons; and that poisons are absorbed more quickly by a fasting stomach than after a meal.

NERVOUS DISEASES.

Nervous and mental diseases are often caused or aggravated by unnecessary noise and excessive vibration in the factory. This condition, present in nearly every factory is often unrecognized and taken for granted. The worker, however, may have to make an entire readjustment of his nervous system. Women are especially affected by noise and vibration.

"It tends to distract attention: require more intense mental application; cause irritation and nervousness; induces insomnia; and may be the cause of such weariness that it impairs working capacity even more than severe muscular

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(I)-Radium Poisoning- Monthly Labor Review, XXVIII, (June, 1929) p.6-21.

pain."(I)

The fatigue which is caused by constant noises of high-pitched sounds, or whir of machinery often results in a nervous or mental breakdown to the worker. He must leave employment and his meager savings will not permit a cure at the sanitarium. He and his family must be cared for by the community.

Whenever rush orders are placed there is as a result capacity working at high tension. High tension work is another one of the causes of nervous troubles. Pettily irritable employers also contribute to the mental ill-health of workers.

Up to 1927, two cases of mental and nervous disease were awarded. These were Bramble v. Shields, Maryland. 127 A, 44,(1924), and Rialto Lead &. Zinc Co.v.State Industrial Commission, Oklahoma. 24 P.96,(1925). A third case, Lough v. State Industrial Accident Commission, Oregon, 207 P. 354, (1922) would have been compensated had the claim been filed within three months after disability occurred.

RESPIRATORY DISEASES - INFLUENZA, PNEUMONIA, TUBERCULOSIS.

Respiratory diseases are prominent wherever the worker is exposed to cold, drafts, and dampness (masons, bricklayers) or to violent changes of temperature, (Teamsters, drivers, chauffeurs). Pneumonia may result from breathing dust in ill-ventilated workshops, from working in crowded rooms, and from continued poor posture while at work. The follow-

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(I)- Frankel, Lee - Health of the Worker. Page 48.

ing case is one compensated for pneumonia which came as a result of an accident.

Delso v. Crucible Steel Co. (I)

During the course of his employment, Delso received a heavy blow on the chest which incapacitated him for work. Pneumonia developed and he died the next day. The Industrial Commission allowed an award on the ground that the accident caused the pneumonia. His employer appealed, but the award was affirmed. The court said:

"---there was competent evidence that the injury was the inciting cause of the pneumonia; there was a sudden development and quick termination in the progress of the disease after the injury. There are many circumstances corroborating the opinion of those experts who trace the pneumonia to the injury."

Tuberculosis among adults in industrial occupations may be due to these three causes; fatigue, inadequate ventilation, and insufficient food. Certainly conditions of ventilation in industrial plants vary greatly from outdoor conditions. This is especially true of printing factories, shoe factories, and tailoring shops. The workers in these establishments do not do any strenuous, physical labor. Because of poor ventilation there is little respiratory activity. Air to be health producing must be circulating

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(I)- Supreme Court of New York. 187 N.Y.S., 66 (1921).

so as to keep it from becoming loaded with carbon dioxide and thus cease to be vitalizing. People inhaling impure air constantly become anaemic and lose resistance.

The monotony of the factory task as well as the long hours bring about a general fatigue which reduces the resistance of the worker to the sources of all diseases, especially tuberculosis.

Because the industrial worker often receives a small salary he is obliged to live in poorly ventilated and lighted houses in the most crowded sections of the city. Because of his low salary, too, he must do without the proper foods to maintain health. This undernourishment is an important factor in tuberculosis.

The increase of tuberculosis among women during the war period was due to their entrance into industry at that time.

Dust of any type, organic or inorganic, in the working atmosphere has a tendency to reduce the resistance of the lungs and to make the worker more liable to a recrudescence of an old tubercular process. Dr. Thompson and Mr. Brundage, investigators for the United States Public Health Service, made an exhaustive survey of the effects of exposure to dusts in the Portland Cement industry. They found that workers in this industry were highly susceptible to respiratory diseases. Men who were badly affected left the industry before the expiration of two years. Those who had worked in cement dust for eight years or longer experienced more than twice as many disabling cases

of respiratory illness per 1,000 persons as the group having less than eight years service. Not only did the larger percentage of the seasoned workers have one or more than one illness each year but the persons who suffered these disabilities had more frequent attacks the longer they stayed in the industry.

"At the copper works in Montana, out of 1,614 deaths during 1907 and 1914, 37.9% occurred in miners and were due to pulmonary tuberculosis; whereas among the non-mining class only 10.8% died from this disease."(I)

Marble and stone cutters, printers, bookkeepers, telephone operators, and clerks are very susceptible to the disease. Railroad employees, agriculture workers, carpenters, and masons are not so susceptible, because their work is at times carried on in the open.

"It is startling when we realize that such an innocent occupation as that of the telephone girl is associated with a tuberculosis rate of 43% of all deaths among this class of workers, and that the stenographer suffers a rate of 39% from the same disease."(2)

To date three cases have been awarded compensation for tuberculosis, under the Workmen's Compensation Acts. The first one to be awarded was the case of Wenrich v. Warning.

(I)- Oliver, Sir Thomas - Phthisis and Occupations. Journal of Industrial Hygiene, April, 1920.
(2)- Hayhurst, E.R.- The Relation of Industry to Medicine. Ohio State Medical Journal, December, 1916.

Wenrich v. Warning (I)

Albert Flessert was employed in a monument business owned by Wenrich. He was a steady worker from 1898 until 1921, when he became incapacitated because of pulmonary tuberculosis. After four months treatment at a sanitarium he died. His wife claimed compensation and was awarded it by the circuit court. Wenrich and the insurance carrier appealed, daiming that Flessert was suffering from the disease prior to the law of 1919 which added occupational diseases to the Workmen's Compensation law. The court did not find such evidence. In conclusion the Supreme Court said: "-that the conditions under which the occupation of granite cutting is and must be carried on are such that the consequent filling of the lungs with dust necessarily makes one so employed much more and particularly susceptible to pulmonary tuberculosis." This was held to bring it within the term "occupational disease" in the statute. Judgment was therefore affirmed.

Typhoid

Many times the employer overlooks the fact that the drinking water supply of his factory is unwholesome or impure. Some plants use water for their industrial processes from nearby rivers, canals, or lakes and the worker

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(I)- Supreme Court of Wisconsin. 196 NW, 824, (1924).

is not cautioned enough to realize the danger that lies in drinking it. It often happens that not enough care is exerted to keep the two supplies separate. Frequent bacteriological examinations are not made; sterilization and filtration of suspicious drinking water are often deemed unnecessary. Contractors, railroads, municipal employers, and summer-resort keepers neglect to provide drinking water for their employees and cases of typhoid from these sources have been numerous.

Many of these cases have been brought to light of late years and compensation has been asked for them on the ground that it is an occupational disease growing out of employment. The following case of typhoid was compensated in 1923.

Frankamp v. Fordney Hotel (I)

The Fordney Hotel at Saginaw put down an artesian well on its property and piped the water for use in the hotel because the water supply of the city was thought to be impure. Ethel Frankamp employed as head waitress in the hotel was taken ill with typhoid fever. An analysis was made of the well water by the State Health Department and it was found contaminated. Claim for compensation was made and an award of $14.00 per week during the period of disability was made and a sum of $675.54 for medical attention was given. The defendent brought certiorari.

(I)- Supreme Court of Michigan, 193 NW, 204, (1923).

The Supreme Court, upon deciding that the evidence showed the disease was contracted in the course of employment, and having determined that such occurrence was an accident, affirmed the award of compensation.

MISCELLANEOUS DISEASES

There are several occupational diseases, though not numerous in extent of employment, are nevertheless worthy of mention, because when they do occur they disable the worker, cause much pain, and require extensive medical treatment.

These are erysipelas, freezing, glassblower's arm, heat prostration, heart disease, housemaid's knee, rheumatism, and telegrapher's cramp. The cases awarded compensation for these diseases are shown on page 78.

It is hardly fair that an occupational disease arising in the course of employment which deprives a family of its bread winner, should be allowed to bring absolute poverty into a home and deprive a wife and children of the means of subsistence. Such diseases should be compensated.

"A working man's capital is, as a rule, hiw health and his capacity to perform a full day's work. Once that is impaired or damaged beyond recuperation two things happen. First, his whole industrial outlook is jeopardised and he becomes by rapid stages a liability and even a charge on the state. Secondly, if the bdily defence is undermined by stress and strain the man falls a ready prey to disease.

Hence the result of neglect is a double loss, we lose the man to industry and he becomes a burden to others and not infrequently to the community; and the effect of the double loss is impairment of the industrial and physical effects of the nation. There is great loss still in treasure and national wealth; there is greater loss still in national health." (I)

(I)- Collis, E.L. and Greenwood, Major - The Health of The Worker. p.78.

CASES OF OCCUPATIONAL DISEASES COMPENSATED TO 1927

TABLE II

CANCER	DERMATOSIS	DUST DISEASE	ERYSIPELAS
AUSTIN V. RED WING SEWER PIPE CO. SUP. CT. MINN. 1925. 204 NW 323.	ANTHRAX. HOUSTON PACK CO. V. MASON. SUP. CT. TEXAS 1926. 286 SW 862.	CARROLL V. IND. COM. OF COL. SUP. CT. COL. 1920. 195 P 1097.	BAGLEY'S CASE. SUP. CT. MASS. 1926. 152 NE
SMITH V. PRIMROSE TAPESTRY CO. SUP. CT. PENN. 1926. 131 A 103.	ANTHRAX. McCANLEY V. IMPERIAL WOOLEN CO. SUP. CT. PENN. 1918. 104 A 617.	PROUSE V. IND. COM. OF COL. SUP. CT. CALIF. 1917. 194 P 625.	
	ANTHRAX. CHICAGO RAWHIDE CO. V. IND. COM. SUP. CT. ILL. 1920. 126 NE 616.	HARTFORD ACCID. & IND. CO. V. IND. COM. SUP. CT. CALIF. 1917. 163 P 225.	
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1. There must be an examination of all new employees entering the plant, with supervisory correction of defects, as well as periodic examinations thereafter.

2. There must be a cleanliness of factory and worker.

3. There must be an improvement of ventilation and light.

4. Respitators, goggles and safety clothes must be used when necessary.

5. There must be an elimination of all unnecessary machinery noise.

It is essential that besides safety devises, which of necessity are restricted to general industries and cannot provide for particular cases, there must be organized a system of prevention considered from the human aspect, with provision for the individual selection of workers on entering industry. Since the state of health has a very vital effect upon quantity, quality, and permanence of production, and since the worker to be efficient must attend regularly and be able to pay close attention to his duties, then every factory should be careful to employ a man physically fit for his particular type of work. A physical examination of each worker when hired will show his physical assets. The purpose of this examination is not to reject workers but rather to use the information so as to place the worker in that phase of the work where his physical defects will be less aggravated. If ever a potential worker is rejected because of some doubtful condition, then medical science will be used for a purpose

for which it was never intended. Many of the physical defficive are not sufficiently incapacitated to keep them from giving efficient service when properly placed. In many instances, physical defective workers have been found to become less a risk than the normal individual. They know their limitations; they have been taught to live (through hospital or sanatorium experience); they are careful not to subject themselves to strains beyond their powers.

An accurate record of the applicant's examination should be kept on file. Any weaknesses present, which will not bar him as unfit, should be noted and a health program made out for him to help overcome them. The entrance examination will establish the presence or absence of organic disease and will prevent communicable diseases. It will detect a disease in its early stages and perhaps save the life of the worker. In many cases nasal defects have been responsible for respiratory infection, leading to a lowered vitality. Defective vision has often been responsible for many diseases. A poor or unhealthy condition of the teeth may lower the vitality of the worker and open the way for diseases which later may be occupational diseases.

During the past few years, physical examinations have been adopted in one factory after another.

In the Western Electric Plant at the Hawthorne Works, Chicago, the health program for the factory includes a thorough medical examination for both men and women; a

voluntary or optional examination of the supervisory force; periodic examination of all employees exposed to possible occupational disease hazards; and a weekly investigation by the safety and health organizations and the medical department operated by the plant.

Many plants have dental clinics to care for workers whose teeth need attention. Every factory that cannot support a dental clinic may make arrangements for its employees to receive good dental work at cost, by co-operating with one of the dental schools or dispensaries of the city.

The confidence of the worker must be gained so that he will feel free to go to the doctor for consultation or advice. Every factory should have a modern, scientifically equipped, consultation and examination room, a first aid room, and a rest room. If the factory doctor has not at his command xrays and special apparatus for making tests, then he should make arrangements for the use of such apparatus at a nearby hospital.

Clean factories and adequate facilities for personal cleanliness do much toward creating a better morale. Aside from the importance of scrupulous cleanliness in the handling of commodities to be used by the community, the clean factory does much to sustain the health of the worker. Floors, walls, work-benches, windows must be spotless. Electric light bulbs must not be neglected.

"One cannot have morale without cleanliness", writes Ford in his autobiography. "We tolerate makeshift clean-

liness no more than makeshift methods. Something like 700 men are detailed exclusively to keep shops clean, the windows washed, and all of the paint fresh. The dark corners which invite expectoration are painted white." (I)

It should be recognized that the shop where a worker is employed for eight hours a day, often from the time he is sixteen years old, exerts a powerful influence upon his health, efficiency and happiness.

Not only must cleanliness of the factory be stressed but cleanliness of the worker is of vital importance, too. He must be supplied with lavatory facilities where he can have hot and cold running water and plenty of soap. Most workers wash in a very superficial way, forgetting that a thorough scrubbing of hands and arms are needed to remove dirt, to kill germs, or remove infection.

Says Dr. Wm. H. Park, Director of Laboratories, Department of Health, New York City: "When working people handle poisonous metals, liquids, or chemicals, as for example lead, arsenic, mercury, or aniline dyes, or infectious materials, washing facilities should be adequate, and hot water, soap and brushes provided. In trades where dangerous dusts exist, and in any trade where the worker gets very hot or dirty, shower baths are of greatest value in removing poisonous or irritating dusts from the hair, and skin, and are therefore a protection to health and an economy to the business in the long run. Washing should not be left to the option of the employee in occupations where dangerous dusts or chemicals are encountered, but

(I)- Edlund, Roscoe C. Clean Workers in Clean Plants. National Safety News XVII, (January,1928), p.14.

should be enforced by a foreman or other supervisor, who should be held responsible for compliance with this most essential regulation."

Edlund states that "A clean unbroken skin will never become infected. By frequent and thorough cleansing of the hands and arms with soap, brush and hot water, employees can prevent to a very considerable extent the accumulation of oil and dirt in the skin pores and thus forestall inflamation. Such cleanliness will also help to remove germs which may be on the skin. The haphazard washing or rinsing of the hands, as practiced by most workmen, however, is not sufficient."(I)

Since health depends upon air supply the problem of ventilation is of vital importance. This is a subject hardly ever discussed in managerial meetings and employers are usually unaware of its importance upon production. Humidity, temperature, air exchange, and dust control must be considered. All of these phases of ventilation have a vital influence upon the health of the worker.

Air to be good must have the four following qualities:

1. - It must be pure rather than polluted by dust or other foreign matter.
2. - It must be cool rather than warm.
3. - It must be moist rather than dry.
4. - It must be moving rather than still.

The temperature of a room where sedentary work is carried on should be about 68 degrees F and lowered where active work is carried on. The relative humidity ought to be

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(I)- Edlund, Roscoe C-Clean Workers in Clean Plants. National Safety News XVII, (January, 1928),p.13-14.

about 45%. Before working hours and during the noon hours all of the windows should be opened to allow a complete change of air throughout the building. Ventilation in a small plant may be of the natural type, that is by means of windows, doors, transoms, and air shafts; while in the large plant it may be by mechanical apparatus. This may be either by the vacuum system, exhausing air from the room, or by the propulsion system, where the air is driven into the room by fans. Ventilation should be looked after by some well-informed person so that fresh air is continually supplied and kept in motion.

Good lighting has recently come to be recognized as a health factor by employers and many are improving their lighting systems. Light to be good must be adequate, continuous, and diffused. Inadequate light results in bad workmanship, reduced output, accidents, eye and other diseases. Daylight, of course, is most desirable because of its health producing elements and modern factories are endeavoring to construct their factories of more glass than brick. Window space must be such as to give sufficient sunlight and natural light with care that it is not a glaring or trying light to the workers eyes. The light should fall upon the work tables and machinery from a proper direction.

Where artificial lighting is used it is important that the fixtures be so placed as to throw the light upon the work done and not into the worker's face. Intense light is as harmful as insufficient light. Globes and shields

should be kept spotless. Machinery and tables should be so placed as to avoid shadows. Walls of workrooms should be painted with a flat finish, non-absorbing color, preferably white.

The exercise of the Workmen's Compensation Acts has also stressed the fact that many of the occupational diseases once thought to be necessary are now known to be avoidable and employers are using intelligence and care in work where there is danger of disease. Many of the preventive measures include the use of such safety devises as goggles, shields, and masks.

The United States Bureau of Mines and the National Safety Council, in conference with the United States Public Health Service, made an investigation to determine the value of respirators in eliminating the dangers of lead, benzol, and silica poisoning in spray painting. "It may be stated, as a result of the tests that in general, the respirators with cotton, paper, or fabric filters remove 90% or more of the lead from air carrying paint mist. These respirators restrain none of the solvent vapors, however, but the addition of a canister or cartridge of activated charcoal to the respirator removes all solvent vapors until the charcoal becomes saturated---when the charcoal is saturated the cartridge must be exchanged for a fresh one.

"The respirators were somewhat less efficient against the silica-dust sprays, but they restrained 24% or more of the dust from the air passed through them; most of them were

more than 50% efficient."(I)

Besides respirators, there are other means of preventing industrial poisons. The preventive procedures for chrome poisoning consists in the following:

"1. The use of inclosed machinery for grinding raw materials.

2. The use of efficient local exhaust ventilation.

3. Where such means of handling dust and fumes are not available, the use of efficient respirators.

4. The use of impermeable rubber gloves.

5. The anointment of face, hands, and arms with a mixture of petroleum (three parts) and lanolin (one part).

6. The proper change of working clothes and caps."(2)

The following rules do much to prevent lead poisoning in printers:

1. Ample ventilation and proper lighting.

2. Electric heating of lead pots or exhaust for carrying off gas fumes.

3. No dry sweeping or dusting.

4. Prevention of excessive heat.

5. Separation of processes which produce lead dust or fumes from other processes.

6. Ample washing facilities.

(I)- Respirators for Protection against Poisonous Sprays. Public Health Reports . XXXXIII, (July,1928)? p.1985.
(2)- Chrome Poisoning. Monthly Labor Review,XXVIII,(May,1929), p.122-123.

7. No speeding up of work or excessively long hours.

"There are three lines along which we may proceed in the control of the industrial poison hazard.

1. Such means as may be introduced for the control of the spread of the toxic material in the atmosphere of the workroom. Where the material is in the form of dust or fumes, the mechinal enclosure of the process constitutes a very satisfactory procedure.

2. Exhaust ventilation may be introduced for the removal and collection of the toxic agent.

3. Where it is impossible to remove the substance by means at our disposal, the possibility of the protection of the worker by a mask or respirator may be worthy of consideration."(I)

Manufactures of paint, varnish, and lacquer have reduced the hazard of paint spraying considerably by the substitution in many products of less harmful materials for these which cause disability. Paints for finishing the interior of buildings are usually lithopone paints, the base consisting of zinc and barium composition instead of lead composition. The use of lead paints on metal structures has been supplanted by iron oxide paints and for other work considerable success has been achieved in substituting titanium oxide for lead, especially for white outside paints.

(I)- Greenburg, Leonard. Medicine Develops with Industry's Needs. National Safety News, XVIII, (August,1928), p.15.

Workers in industrial poisons should be examined often so that their physical condition may be noted. When a man is affected he should be transferred to another department or occupation. The discovery of any new industrial poison should be investigated in a scientific manner and preventive steps taken immediately. The use of very dangerous poisons should be discarded. The phosphorous match was abolished in 1910 and the radium watch dial should receive like treatment. Regarding radium poisoning, "It is strongly contended that the use of luminous dials on watches and clocks is a fad and without economic value. As a fad, it may have, of course, certain commercial advantage in extracting from the buying public more money for a watch or clock than that watch or clock is intrinsically worth. It must be said for the American manufacturers that enough of them to represent a large percentage of the total producers have signified their willingness to stop the business entirely provided that all will agree to stop and that the importance of luminous dials and the watches will be prohibited. The trial of death- and death of the most horrible kind- that this industry has made would suggest that such importation might well be prohibited at once and then a mutual agreement for its abolition be secured in the United States."(I)

Much remains to be known about the chemistry of the industrial processes and the raw and finished products.

(I)- Radium Poisoning. Monthly Labor Review, XXVIII,(June, 1929),p.6-21.

New materials and their substitutions may influence the health of the worker and so must be studied for possible dangers.

"Workmen should be impressed with the importance of wearing goggles. They are absolutely essential in nearly all shops. Goggles are made for every conceivable type of hazard, from hot metal to dust. Superintendents, managers, foremen, and even visitors should be supplied with goggles so as to set an example for the workmen. Every new workman ought to have his eyes tested and fitted with proper goggles. A good lens must be strong enough to resist impacts; must have a clean crystal surface; and must be relatively free from prism and focus. Goggles are expensive for industry but eyes are very expensive. In New York state an eye is worth $3,300 and with this amount a factory could buy 3,300 pairs of good goggles. Everybody at the Pullman Company wears goggles, whether he be laborer or manager. Dr. H.P.Davidson, oculist for Pullman Co. says: "We have spent approximately $75,000 for eye protection and of this sum $25,000 was spent for special goggles. By this I mean prescription lenses for workmen with defficient vision. No sane person will question an expenditure which saves sight and money, means more and better work, and inspires men with confidence so that they go about their work without fear of flying chips or splashes of hot metal.

"Special goggles mean increased production, to say nothing of the protection afforded the man who is indust-

rially blind, that is, with vision up to 1/10 of normal in either eye.

It is my firm conviction that the goal for which we are striving will never be attained until a mandatory ruling is issued to the effect that every employee in the shops must wear goggles while on duty." (I)

A nation-wide educational campaign is now under way for the prevention of blindness and the conservation of vision among the industrial workers of America and their families. It is being conducted by the joint efforts of the National Society for the Prevention of Blindness and the American Federation of Labor. It is being carried on through the various publications of the American Federation of Labor and the local labor bodies, through radio broadcasting, exhibits in meeting places of labor organizations, etc.

Regarding the campaign, Director Lewis H. Carris of the National Society for the Prevention of Blindness said: "The Campaign is being undertaken because of our conviction that eye hazard of industrial occupations, that is, accidents, diseases affecting the eye, and eyestrain now constitute probably the most serious cause of blindness and impairment of vision among workmen in America. It is the belief of the officers of both organizations that a very large percentage of industrial blindness is preventable and that many eye hazards in

(I) - Guilbert, Harry. Eye Protection. National Safety News, XVI, (December, 1927), p.13-14.

the home, on the street, and in other places outside of industry, which at present threaten the sight of the wives and children of our workmen, also are preventable."(I)

The announcement of the campaign reads: "---The industries of this country are at present paying approximately $10,000,000 a year compensation to workmen who have been totally blinded while at work. This expense is inevitably reflected in the cost of commodities and therefore in the cost of living. The direct loss to the working men and women of America through lowered efficiency or earning power following blindness or serious impairment of vision is probably much more than $10,000,000 a year. There issa further loss, intangible, but probably more serious than the foregoing, in the tragedy which enters every home in which a person has been blinded or has lost a part of his sight permanently- a tragedy which often spells disaster."(2)

Safety clothes must be provided for workers in occupations where they come in contact with chemicals, dusts and substances which are liable to cause infectious skin diseases or other forms of dermatitis. These outfits may be made on the simplest lines and of materials suitable to the substance to be handled. Such materials may comprise oiled, rubberized, lead-treated, fire-proofed materials or untreated heavy quality denim. In foundries, men will need special shoes and clothing to protect them from

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(I)-Campaign for the Prevention of Blindness Among Industrial Workers. Monthly Labor Review, XXVIII,(January,1929),p.74.
(2)-Campaign for the Prevention of Blindness Among Industrial Workers. Monthly Labor Review, XXVIII,(January,1929),p.75.

the molten metals they are pouring.

Every adaption causes a certain amount of wear on the nervous system. Investigators have found a definite relationship of unnecessary noises to loss of personality and individual efficiency. Noise is the great evil of business and little has been known of it until recent years. Today, doctors, psychologists, acousticians are discovering the behavior of sound waves and the fighting reaction of the living cell-organism.

While healthy persons seem capable of adapting themselves to noises, still there is a drain in the amount of energy used in inhibiting the undesirable stimuli. Where a noise is rhythmic and uniform in quality, pitch, and intensity, the average person apparently bears it with little injury, but noises which are irregular in any of these qualities do serious injury.

Noise stored up in the system is poisonous not only to the worker but to those with whom he deals. It wrecks his nerves, digestion, powers of concentration, and memory. It may cause partial or complete amnesia. It is blamed for high blood pressure and disturbed poise. Psychologists have found that 20% more energy is consumed under noise conditions in the ordinary office than is used when the same work is done in a silent room. Besides causing nervous and mental diseases (as explained on page 69), noise is often a cause of deafness. No indications have ever been found where a workman "gets used to noise".

Noise can either be reduced at its source, absorbed,

or its transmission through structure can be hindered. The use of the radio, and the talking-moving-picture industry have recognized absorption as the best method of eliminating noise. They have found that carpets and heavy fabrics are the best silencers.

When new office and factory buildings are being planned it is necessary to consider the factor of noise. Office equipment, such as multigraphs, addressographs, duplicating and billing machines, typewriters, and telephones are the chief source of noise in offices. Manufacturers of office equipment are gradually endeavoring to eliminate noise in the operation of their machines.

F. S. Armistead of the Benefield Furniture Co. states that noiseless typewriters, silencers for telephones, and deep pile rugs, especially under typewriter desks should be installed, for if comfort and health are to be considered at all, it is worth while to install noise preventing devices.

By carpeting an office floor it was found that with a reduction of noise by only 15%, a 5% increase in typing output was obtained and much less energy expended by the typists.

Regarding factory machinery noise, Prof. Donald A. Laird says: "Much noise can be conquered at its source. Noiseless gears, chain belts, and canvas-tired truck wheels will engineer more quiet into workplaces. Heavy and noisy machinery that makes a building vibrate can be muffled

somewhat by mounting the machinery on a base of resilient sound-absorbing material." (I)

If these precautions were taken to eliminate noise, there would be less nervous tension, disease, and ear trouble amongworkmen.

Because of the ever growing list of occupational diseases arising out of our increasingly complex industrial system and because of the expense incurred by occupational diseases, it is the responsibility of society, industry and especially the employer to do everything possible to lessen their liability.

(I)- Laird, Donald A. Noise Does Impair Production. American Machinist, LXIX, (July, 1928), p.59-60.

CHAPTER V

POSSIBLE EXTENSIONS OF WORKMEN'S COMPENSATION FOR OCCUPATIONAL DISEASES

Workmen's Comp nsation for Occupational Disease should be introduced into the less progressive states, where health hazards abound and go unrecognized. Nearly all of the following states have Workmen's Compensation Laws for accidents but none of them have provisions in their laws for occupational diseases. They are: Alabama, Arkansas, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Iowa, Indiana, Kansas, Louisiana, Maryland, Maine, Michigan, Missouri, Montana, Mississippi, New Hampshire, North Carolina, Nebraska, Nevada, New Mexico, Oregon, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Tennessee, Utah, Virginia, Vermont, Washington, West Virginia and Wyoming.

There is still much improvement to be made in the laws of the eleven other states which compensate for occupational disease. Uniformity of the compensation laws throughout theentire country is essential. Today, some industrial diseases are compensated in one state and not in another. The list of diseases compensated should be such as to include all diseases agreed upon by industrial physicians, chemists, and scientists as true occupational diseases. At present, in Ohio, if a man develops lead poisoningfrom breathing lead dust, he is

compensated, while if he develops silicosis from breathing silica dust he is not. Silicosis is as severe and deadly and true an occupational disease as lead poisoning but the Ohio law does not include silicosis in the list. Again, blindness due to ultra-violet rays is not compensable in Ohio while it is in many other states. This is true of hernia, heart disease, erysipelas and many other diseases.

Dr. McCord states---"that compensation for occupational diseases should be limited to those pathologic states that exhibit features characteristically related to particular kinds of occupation.

"---It is to be hoped that legislative assemblies may know more about the insidiously developing occupational diseases, and the injustice that will be perpetuated if this increasing source of industrial disability is further ignored."(I)

Liberality in the inclusion of diseases should be accompanied by liberality in benefits. Laws need to be revised so as to increase their benefits and shorten the waiting period to one week or less. Under the Ohio law the maximum amount for disability is $3,750.00 but in many other states it is much less. Death benefits should be paid according to the number and character of dependents. In nearly all cases they should be paid in periodic installments instead of a lump sum. Where there

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(I) - McCord, Dr.Carey P. - Compensation for Occupational Disease. National Safety News XVIII,(October,1928)p.66

is a long period of convalescence, in such diseases as tuberculosis, rheumatism, typhoid and lung diseases from dusts, a weekly payment ought to be made to the sufferer. This is done in Italy in controlling tuberculosis and has proven very successful. There, the disabled tubercular worker receives treatment at a hospital and cash benefits weekly for six months. In severe cases these cash benefits may be prolonged by a decision of the special commission in charge.

Compensation laws also need to make provision for expert medical and hospital care on the part of industry, for all workers ill of industrial diseases. When this provision is added to the laws then no family will suffer unnecessarily from enormous doctor bills.

Laws ought to require that the industrial physician employed be a graduate of a medical college where occupational disease has been thoroughly studied. Many medical colleges furnish no proper training for this special work. A proper conduct of claims adjustment for occupational disease calls for the service of physicians highly trained in this special branch of medicine.

The control of occupational disease does not depend upon the factory physician alone. It often happens that incipient disease goes by unnoticed by the family physician. When the time comes that the family doctor can detect occupational disease and will co-operate with the factory physician regarding it, then much will be accomplished to facilitate the extension of Workmen's Compensation

for Occupational Diseases.

Factories should require all physicians to list all occupati nal diseases of workers with a history of each case and medical attention given. By a careful investigation and a thorough comprehension of the work the occupational diseases of each individual factory can be ascertained and the type of man who is physically fitted for each department can be determin d.

In factories, where dangerous substances may cause occupati nal diseases, it might be wise to have a "safety court", to try all employees who disregard rules and are extremely careless in the handling of poisonous substances. Someth ng similar to this, regarding accidents, has been successfully tried in the Newport Rolling Co., Newport, Kentucky. A reduction of accidents per month from thirty to four was accomplished. This "safety court" is still in operation. A safety judge having no immediate connection with any of the company's workmen presides, while fellow employees act asprosecuting attorneys. After the decision, an appeal may be taken to a reviewing board, consisting of the general superintendent, the assistant to the president, and the superintendent of the galvanizing department.

"Offenders convicted by the court are sentenced on a day basis. At the end of a year an employee is automatically discharged if his assessed fines or penances total one hundred days. Careful watch upon the observance of safety rules is kept by a group of workmen, who are

appointed safety inspectors by the general superintendent. Carelessness on the part of any employee is reported to the general superintendent, who in turn notifies the foreman of the department in which the man is working. The offender is then instructed to appear before the safety court. Names of the safety inspectors are not divulged."(I)

Often a sick worker has been in the employ of several factories or establishments before he finally becomes incapacitated. In such cases the last employer should not be penalized by the Workmen's Compensation Acts to pay the entire amount of compensation. In California and a few other states, the Acts have been amended to relieve the employer of this extreme penalty. All Workmen's Compensation Acts ought to provide for the apportioning of compensation among the different employers the sick man had since the occupational disease first appeared.

Compensation laws have been seriously handicapped, in many states, by the limitations placed by the acts upon the salaries which a state may pay to employees of the Industrial Commission Boards. Often there is no referee to hear and determine claims for compensation. These limitations should be removed so that the Workmen's Compensation Acts may achieve their high purpose in an effective way.

Since health is that condition of the body that makes

(I)-Reduction of Accidents Through Safety Court. Iron Age (September, 1926)p.713.

possible the highest enjoyment of life, as well as the greatest constructive work; that condition of the body which shows itself in the best service to the world; and since every man and woman is entitled to his health, then the enforcement of Workmen's Compensation for Occupational Diseases is the fulfilling of industry's duty to the individual and to the community.

The relief from suffering due to industrial accidents was an early motive in the history of Workmen's Compensation. Lengthening the span of life by a wise conservation of human resources through elimination of occupational diseases, secured by scientific research and compensation, is the goal of the present.

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