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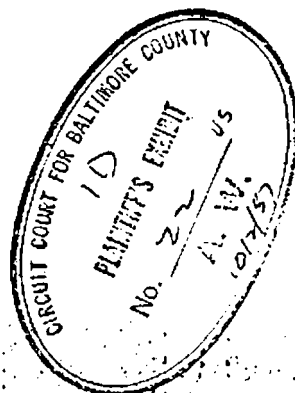
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Association of American Railroads

PROCEEDINGS
OF THE
SEVENTEENTH ANNUAL MEETING
OF THE
MEDICAL AND SURGICAL SECTION



HOTEL TRAYMORE
ATLANTIC CITY, N. J.

JUNE 7, 8, 1937

MONDAY MORNING SESSION

June 7, 1937

The Seventeenth Annual Meeting of the Medical and Surgical Section of the Association of American Railroads convened at the Traymore Hotel, Atlantic City, New Jersey, at nine thirty o'clock, Dr. D. B. Moss, Chairman, presiding.

THE CHAIRMAN: Gentlemen, we will now begin our Seventeenth Annual Meeting.

The first item on the program is "announcements" which will be presented by the Secretary.

. Announcements

THE SECRETARY: A few days ago I received the following wire from Dr. McCombe, of the Canadian National Railways, dated "Toronto": "Greatly regret owing to continued ill health impossible for me to attend annual meeting of Section. Regards." Signed "John McCombe."

DR. G. G. DOWBALL (Illinois Central System): I move that the Secretary be requested to wire Dr. McCombe and convey our extreme regrets at his unavoidable absence, and our hope for his early recovery, with lots of love.

. The motion was seconded, was put to a vote and unanimously carried The Secretary then wired Dr. McCombe as follows: "Medical and Surgical Section in convention assembled extremely regrets that illness prevents you from being present today. Best wishes from all for a speedy recovery."

THE CHAIRMAN: The next number on the program is an address by the Chairman. I haven't an address, but I have a few remarks to make on a subject which I think will become of increasing interest to us as time goes by; that is, occupational diseases, and I want to refer particularly to the Illinois law which was passed last year.

OCCUPATIONAL DISEASES - THE ILLINOIS LAW

By

D. B. Moss, M. D.

The subject of occupational diseases has become a matter of great importance in the last two years, and is of concern to the employer, the employee, and the public as well, because the livelihood of so many citizens of the state depends upon the continuing good health of employees working in these recognized hazardous occupations. I have chosen this subject for discussion for the reason that for the past year I have been a member of a committee known as the Railway Engineering and Shop Committee. This committee was appointed by the

General Managers' Association of Chicago to make a survey of present practices and equipment of the railroads operating within the state of Illinois and submit recommendations which would serve to bring these railroads into substantial compliance with the requirements of this new law. There are 31 Class I railroads operating within the state, and considering short lines, there are 78 railroad corporations more or less interested in the subject of occupational disease. This investigation and the reports which will be issued will be of the greatest importance to these roads, and may serve the interests of railroads in other states, because the indications are that such legislation by other states will not be long delayed.

From time to time, this committee has issued bulletins recommending procedures designed to minimize the risk of exposure in occupations known to carry a hazard and which are of immediate concern to the railroads. Forty-six states now have Workmen's Compensation Acts which provide for compensation for accidental injury causing disability or death. Recognition of the principle of compensation for occupational diseases has been slow, and even now only 16 states have any provisions for compensation for disability or death due to an occupational disease. Many of these states do not provide for complete coverage. The Illinois Occupational Diseases Act was approved March 16, 1936, to take effect October 1, 1936. Accompanying this Act were two others—the Health and Safety Act, and the Grinding, Polishing and Buffing Act. The latter is a temporary measure bridging over the period until the Industrial Commission establishes rules having the effect of law to replace all previous legislation in certain fields.

Section 6 of the Health and Safety Act provides that the Industrial Commission may appoint an advisory committee to suggest rules or changes in existing rules. Representation on this committee must be equally divided between employer and employees. It is under this provision that the Railway Engineering and Shop Committee acts in assisting the railway member of the committee.

Section 2 provides that this Act shall apply to all employers engaged in any occupation, business or enterprise in the state of Illinois, and their employees, the only exemption being the agricultural class.

Section 3 provides that it shall be the duty of every employer under this Act to provide reasonable protection to the lives, health, and safety of all persons employed by such employer. The Industrial Commission shall from time to time make, promulgate, and publish such reasonable rules as will effectuate such purposes.

Section 4 provides that to effectuate the purposes stated in Section 3, the Industrial Commission shall make rules for (a) Proper sanitation and ventilation of all places of employment to guard against personal injuries and diseases. (b) The arrangement and guarding of machinery and the storage and placing of personal property to guard against personal injuries and diseases. (c) The prevention of personal injuries and diseases by contact with any poisonous or deleterious dusts, vapors, gases, or fumes. (d) The prevention of personal injuries or diseases caused by exposure to artificial atmospheric pressure.

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It is this law for the prevention of disease or injury which urgently demands our best thought. The Workmen's Occupational Diseases Act is optional. The employer may elect to operate under its provision by simply filing notice with the Industrial Commission to that effect, in which case his liability is limited to the provisions of the Act. The employer who chooses to remain under the common law takes no action. His liability is limited only by the amount fixed by the jury after weighing all of the evidence presented in the trial of the case, except that for death the maximum is \$10,000. It is further provided under the common law that it shall not be a defense that the employee expressly or implicitly assumed the risk or that the disease or death was caused in whole or in part by the negligence of a fellow servant. Also, that any violation of the rules of the Health and Safety Act shall constitute negligence of the employer.

The primary purpose of the Workmen's Occupational Diseases Act, like the Workmen's Compensation Act, is to provide security to the employee and his family when he is overtaken by the tragedy of disability or death. The primary purpose of the Health and Safety Act, through the penalties provided for failure to comply with its provisions, is to compel the employer to install safety devices or take such other action as will protect the employee from accident or disease. Be it understood that no employer, whether under the compensation act or under the common law, is relieved of the necessity of complying with the Health and Safety Act. The penalty for the first failure upon conviction is a fine of not less than \$25 and not more than \$100, and subsequent failures not less than \$50 nor more than \$200. Each day of failure constitutes a separate offense.

Referring again to the provisions of the Occupational Diseases Act, Section 5 provides that under the Act the employer shall be liable for compensation on account of an occupational disease which occurs within one year after the last day of the last exposure to a hazard, except in cases of silicosis and asbestosis, where the liability extends to three years. Section 3 provides that the employer under the common law is liable for three years after the last day of the last exposure to the hazards of the disease, and that every such action for damages in case of death shall be commenced within one year after the death of such employee, and within five years after the last day of the last exposure to the hazards of the disease. It is quite evident from these provisions that the employer is not immediately quit of an employee who resigns or who leaves the service from any other cause.

Prevention of occupational disease is of greater importance, more humane and less expensive, than the palliative of paying compensation after the disease has developed. The principle of this law is sound, and I believe that no person opposes the idea of compensation for disability or death whenever it is clear that the immediate cause can be attributed to a hazard which is associated with an employment. The proper application of the law will be difficult, and will require the intelligent cooperation of every agency concerned in its administration.

One of the dangers lurking in the Workmen's Occupational Diseases Act is the propaganda in the educational program of the State Department of Labor.

When this Act was approved a year ago, thousands of pamphlets were printed and distributed throughout the state describing in a fragmentary way the symptoms of various occupational diseases and the kinds of work which may cause them. The only purpose served will be to create a fear complex, and every employee who becomes ill will imagine that he has an occupational disease, or the one discharged or relieved will imagine or misinterpret many of the symptoms of some occupational disease and a claim will result. I believe this is more apt to occur under the Act than under the common law.

In the agitation which has led to legislation in the last two years, silicosis has been emphasized almost to the exclusion of other diseases which may have an occupational origin. We may accept as axiomatic that dust from whatever source, if in an excessive amount, is injurious. A recent comment in the *Journal of the A.M.A.* states that only silica is capable of inducing silicosis, but that other mineral dusts under prolonged and gross exposure may cause some increase in pulmonary fibrosis. If the relative potential harm of silica is rated as 100, then other non-toxic mineral dusts may be rated only on the order of 5 or 10. Dusts in industry are formed by processes of abrasion, grinding, polishing, blasting, and the like. Such dusts are not altered in any way, but maintain the same chemical composition as the material from which they come, the only difference being the particle size. The smaller these particles are and the harder and less soluble they are, the more apt they are to cause permanent changes in the pulmonary tissue. There are two schools of thought in regard to the method by which silica causes silicosis, one being that the hard particles of silica cause an irritation, producing a defensive fibrosis, and the other that the silica in the body undergoes a chemical change and becomes a cellular poison. The evidence appears to favor the first view.

Silica, asbestos, and lead are the principal substances generating toxic dusts to which railway employees may be exposed. To these we may perhaps add coal dust generated in handling coal from cars to coal chute or other enclosed places, because this is excessively dusty work. A recent preliminary report was issued by the U. S. Public Health Service in a study of health conditions, including physical examination of 2711 men, in three representative anthracite coal mines in Pennsylvania. The presence of anthracosis-silicosis among the group was 23%. Among a control group of hard-coal mining employees where dust exposure was less than 5 million particles per cu. ft., no cases of anthracosis-silicosis were found. Among men employed more than 25 years in dust containing 5 million to 50 million particles per cu. ft. with less than 5% silica, 7% developed anthracosis-silicosis. Where the dust contained 100 million to 199 million particles per cu. ft., 54% of the employees developed anthracosis-silicosis, and with the dust containing in excess of 300 million particles per cu. ft., 89% of the employees exposed developed anthracosis-silicosis. Analysis of the data for the purpose of determining safe limits of dust exposure indicates that employment in an atmosphere containing less than 50 million particles per cu. ft. would produce a negligible number of cases of anthracosis-silicosis when the quartz content of the dust was less than 5%. Where the silica content was about 13%, a safe limit appeared to be 10 million to 15 million particles per cu. ft. It is obvious that avoidance of great exposure to toxic dusts and other poisonous substances

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A large percentage of the population is exposed to dusts from the operation of the automobile. It is operative professions, which v-

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used in or generated by manufacturing processes and of unfavorable working conditions, is the first essential in preventing and controlling occupational diseases.

A large part of the problems which will arise will relate to the question of disability, and will be medical problems, consequently the medical profession, particularly those who are interested in the industrial phases of medicine, must solve them. The problems which will arise in the application of the Health and Safety Act and the prevention and control of occupational diseases will be engineering; and the less, it is important that the medical men be familiar with the engineering features in order to assess the proper value between cause and effect. It is apparent, therefore, that prevention and control demand the co-operative efforts of the engineering and the medical professions. It is to the professions that industry and labor alike must look for a solution of the problems which will arise.

Medical control consists of a careful pre-employment occupational history extending over a period of five years at least, and supplementing a satisfactory pre-employment history, a careful physical examination, paying particular attention to any signs indicating diseases of the heart or lung, aided by any laboratory investigation which the physical findings may suggest. The environment in which an employee may be required to work makes necessary the inquiry into the personal and occupational history, to ascertain that there is no history of previous exposure which may have caused impairments and no condition present which may be made worse by the occupation.

It is important, also, that careful inquiry be made into the history of employees who come for aid, if a correct diagnosis is to be made and a proper balance struck between diseases which are unfavorably influenced by occupation and other diseases in which occupation has no bearing. Therefore periodic physical examination of all employees, in so far as that is possible, is important. In occupations in which known hazards exist, such as where workers are exposed to lead or in sandblasting, examination should be made semi-annually, or more frequently whenever there appears to be indications for doing so, with transfer of employees who are becoming impaired, to less hazardous work.

Engineering is concerned in investigating the occupational environment, estimating the hazards scientifically and instituting the proper methods for control, and thereafter supervision to make certain that the safeguards which have been installed are adequate and their performance effective. Whether the matter is removal of silica dust, coal dust, or the dust or fumes of lead or zinc, the basic principle remains unchanged--ventilation by a method best adapted to meeting the condition to be solved. We have for consideration: (1) The use of mechanical devices, such as exhaust ventilating systems applied to the room or to the plant as a whole, or local exhausts through a suction hood applied close to the point of dust generation. (2) Changing the processes: Substituting non-poisonous materials for those known to be poisonous; substituting wet grinding for dry grinding; or changing from natural sandstone grinding wheels to artificial abrasive wheels which are harder and contain but little or no free silica. (3) Personal protection: Control of hazard by means of protective equipment furnished the individual employee, provided the device

is effective and the employe can be depended upon to wear it continuously while at work. Thereafter it is a matter of good housekeeping—knowing that the atmosphere is maintained in a state which is not a hazard to the workmen. All dusts and all poisonous fumes may not be completely eradicated, but they may be controlled and reduced to a degree which is recognized by sanitarians and by experience to be non-hazardous. This can be accomplished by frequent dust counts of the air at a point where dust is generated, or chemical examination of air samples where lead or other poisonous materials are used. Sandblasting is perhaps the most dangerous dust producing agency to which employes may be exposed, because the sand used is a pure silica which produces a veritable dust flood. Sandblasting has come into extensive use on railroads in recent years. In the shops it is used for cleaning and polishing small articles. It is also used in removing paint from cars, buildings, and steel water tanks, preparatory to repainting. Used indoors it is imperative that all employes be protected, consequently a dust-proof cabinet or room, fitted with a local exhaust system, will be required. Only the air pressure mask is safe for the employe engaged in sand-blasting cars or buildings, and this work should be done only when other employes are not required to work in the vicinity. The air hose should be long enough to bring the air from outside the dust zone, or the air should be washed by being forced through a water bath.

A respirator is a filtering device for removing particulate impurities from the air and is not effective against gaseous impurities. Special masks for this purpose are manufactured. The essentials of a respirator are a close fitting and dust-proof face piece covering mouth and nose, with a minimum of dead space to prevent accumulation of carbon monoxide, the inhalation and exhalation valves must not cause effort in breathing and must be dust-proof, the filtering device should have an exposed surface area large enough to permit free breathing, the filter discs should be easily removable for replacement, and the respirator should fit comfortably and not obstruct vision, and should permit of wearing spectacles or goggles. There are various types of respirators which may be used for non-toxic dusts or for short exposure to toxic dusts. I would recommend that only respirators and gas masks which are approved by the U. S. Bureau of Mines be furnished to employes.

Silicosis and asbestosis are strictly dust diseases, and can be contracted only by breathing silica or asbestos dust. Lead poisoning is most frequently contracted by breathing the dust or fumes of lead, rarely by ingesting lead. Prevention and control, therefore, consists of protecting the employe against exposure by the means best adapted to preventing the generation and dispersion of these harmful dusts.

THE CHAIRMAN: We have received the following wire from Mr. J. M. Symes, Vice-President, Association of American Railroads, same having been addressed to Dr. Bartle as Chairman of the Program Committee:

"WASHINGTON, D. C., June 5, 1937.

Dr. Harvey Bartle:

Your letter June second. Because of some pressing matters of unexpected development here in Washington it will be impossible for me to

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(Circular M. & S. 196)

ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

REPORT OF COMMITTEE ON DISABILITY AND REHABILITATION

Dr. J. D. Collins (Chairman), Chief Surgeon, Southard Air Line Railway.
 Dr. T. J. Hansen, Chief Surgeon, Chicago, Rock Island & Pacific Railway.
 Dr. W. J. Lancaster, Superintendent & Medical Director, Relief Department, Atlantic Coast Line Railroad.
 Dr. John McClellan, Chief Medical Officer, Canadian National Railway.
 Representative from Committee of Directors
 Dr. J. R. Garner, Chief Surgeon, Western Railway of Alaska.

New York, N. Y., May 6, 1937.

TO THE MEDICAL AND SURGICAL SECTION:

Your Committee regrets that it is unable to offer much new material in this report. An endeavor has been made to review some of the previously discussed subjects and bring them up to date. We feel that in the future this Committee should undertake more research work in the rehabilitation of employees who are disabled on account of injuries and diseases. The Committee will welcome any helpful suggestions in this connection.

The Use of Sodium Chloride by Workmen Exposed to High Temperatures

During the past thirty years numerous articles have been written on the use of sodium chloride by workmen exposed to high temperatures, following investigations by physiologists and various medical officers of industrial concerns. It was noted by these investigators that exposure of human beings to extreme heat causes both heat cramp and heat exhaustion. These two conditions are essentially different as regards symptoms, treatment and prognosis.

In heat cramps the etiological factor is a disturbance of the water-salt metabolism, whereas in heat prostration the cause lies in a disturbance of the thermoregulating system. In heat prostration the complaints are of weakness, headache and vertigo, all of which develop so suddenly that often the victim collapses at work. In cases of heat prostration the workman is usually fit to return to work within two days, whilst in cases of heat cramp, it takes four or five days for restoration of body weight and of normal blood picture as far as haemoglobin and salt are concerned.

Heat cramps are also often called "Miners' Cramps," "Muscle Cramps" and sometimes wrongly called "The Bends." The condition consists in painful tonic spasms of any of the skeletal muscles, but usually of those most actively in use.

Except in quite young employes the danger of dementia praecox is slight. In any event if the employe begins to get seclusive, abstracted, inattentive, slovenly, has occasional temper explosions, and has fanciful ideas he should be investigated with the possibility of dementia praecox in mind. On the other hand if his change of personality is such that he is suspicious, accusatory, feels that he is persecuted, will not listen to argument, and wants to carry his difficulties to some high authority, a trend toward the development of paranoia may be suspected.

There are other forms of nervous and mental states which might be dismissed. Leaving out mention of the dangers of alcoholism, acute, periodic, or chronic, there is another danger of which we should be on the outlook and that is the mental state brought on by drug taking. Morphinism fortunately is rare among railroad and other hard working men. But what we do wish to mention is the habit of taking all sorts of the easily obtainable depression drugs of the barbital and similar groups. An employe who is found to use these drugs habitually in any excess should at first be examined and cautioned and then if he persists in their frequent use he should be removed from any potentially dangerous position.

In the handling of mental cases it is advisable to secure the assistance of a psychiatrist and also members of mental institutions in order to provide proper care and rehabilitation.

We know that we have not adequately discussed the occurrence and handling of mental conditions in railroad employes, but two things we feel certain of and on firm ground; first that we can attack these problems, with any hope of beneficial effect, only at the price of eternal vigilance; and second that we must be firm in seeing that the suspected individual is immediately withdrawn from a responsible position and put under neuro-psychiatric care.

Pneumoconiosis

Pneumoconiosis is the reaction of the lungs to the presence of any kind of dust. Silicosis is the reaction of the body, especially the lungs, to the presence of silicon dioxide, or silica, in a finely divided state. It is widespread fibrosis.

During the last few years silicosis has come to hold a prominent place in the industrial world because of legislative action. Silicosis is an old disease. Collis gives a very complete report on the literature from the time of Hippocrates up to the present. Little was written on the subject until 1717 when Ramazzini wrote his famous book "Diseases of Tradesmen."

The Committee on Pneumoconiosis of the Industrial Hygiene Section of the American Public Health Association, defined silicosis as "a disease due to breathing air containing silica (SiO₂), characterized anatomically by general fibrotic changes and the development of milary nodulation in both lungs, and clinically by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever, increased susceptibility to tuberculosis (some or all of which symptoms may be present), and by characteristic X-ray findings."

There are at least two distinct types—acute and chronic. Acute—reported as early as 1713, may develop in two years, or even less. Chronic—or most common type, takes from 10 to 15 years or more to develop.

Etiology:

The primary cause of silicosis is the dust in the lung tissue. It has been shown that the dust must, in fact, be dust penetrating a dust invisible technique of dust standardized by measured in terms of dust.

The probable cause of silicosis is that the harmful dust particles are in its quartz content is that range of dust particles readily of dust. Accidents, precisely, as they is also a factor.

Service, it was found that the limit of allowable dust for workers would produce physical changes in the length of the U. S. Public Health Service dust, the and by four years of silicosis.

Pathology:

According to the findings of the investigation into the development of the disease, the special features of the disease are the nodules in the lungs. The reaction seen in the disease is the increase in size of the nodules and the plaques.

Symptoms:

The disease is described in the following description and picture. First stage: The disease is indeterminate. Many cases often with recurrent

Etiology:

The primary cause of silicosis then, is free silica, inhaled in the form of dust. It has been demonstrated that this dust, in order to achieve its harmful effects on the lung tissue, must be in a fine state of subdivision, that the dust particles must, in fact, be less than 10 microns in their greatest diameter. Most of the dust penetrating the alveoli is less than 5 microns in diameter. It is, therefore, a dust invisible to the naked eye, and its estimation depends on a definite technique of dust sampling and counting. This technique has been defined and standardized by the U. S. Public Health Service. Dust concentrations are measured in terms of million particles per cubic foot.

The probability of one acquiring silicosis depends upon: (1) Nature of silica dust; depends upon the mineral composition of the dust. Knopf states that the harmfulness of a quartz-containing dust usually is in direct proportion to its quartz content. (2) Size of particles of dust; probably the most dangerous is that ranging from 2 to 5 microns, or smaller, because these impalpable particles readily remain in suspension in the air for a long time. (3) Quantity of dust. According to Long the quantity of dust necessary cannot be given precisely, as there is more or less individual susceptibility. Rate of respiration is also a factor. From the results of a study made by the U. S. Public Health Service, it was found practicable to suggest a tentative standard for the upper limit of allowable dustiness between 10 and 20 million particles per cubic foot of air for workers exposed to dust resulting from granite cutting. The same limit would presumably be applicable in the case of other dusts with the same physical characteristics, particularly with a quartz content of 35 per cent. (4) Length of dust exposure. In an investigation of the granite industry the U. S. Public Health Service found that in a group of workers exposed to the heaviest dust, the first case of silicosis appeared after approximately two years, and by four years all in this group seemed to have developed at least an early case of silicosis.

Pathology:

According to Gardner, silica particles smaller than 10 microns are inhaled into the alveoli and are taken up by phagocytes which carry them immediately up the lymphatic channels from one node to another towards the hilum. The special irritation of silica particles seems to enhance this movement. After locating in various nodes the irritation continues and the same type of cellular reaction occurs that is seen in tubercle formation, except the tubercle becomes caseous. The exact cause of formation of this fibrotic nodule is still in doubt. Degenerative changes then take place in these foci and the hyaline nodules increase in size by extension of their periphery, and coalescence of adjacent nodules takes place and brings about involvement of further areas of the lung.

Symptoms:

The disease is divided arbitrarily into three stages for convenience of description and possible compensation purposes.

First stage: Symptoms of uncomplicated first stage are few and often indefinite. Man apparently well, but has slight shortness of breath, dry cough, often with recurrent colds, are most usual symptoms. Earliest specific indica-

tion is the X-ray appearance, consisting of generalized arborization throughout both lung fields with more or less discrete mottling. This characteristic mottling is due to shadows cast by the discrete individual nodules of fibrous tissue in the lungs, and is essential to the diagnosis of silicosis; without this finding the diagnosis of silicosis is not sustained except by autopsy.

Second stage: Definite shortness of breath on exertion, pain in chest, dry morning cough, sometimes with vomiting and recurrent colds more frequent, dyspnea on exertion, and chest expansion noticeably decreased.

X-ray appearance—A generalized medium sized mottling throughout both lungs. Shadows of the individual nodules are discrete and well defined on a background of fibrous arborization, but there may be some larger but limited opacities due to irregular pleural thickening or aggregation of nodules.

Third stage: Shortness of breath marked and distressing even on slight exertion. Cough is more frequent; expectoration is in most cases slight, but may be copious. Individual's capacity for work becomes seriously and permanently impaired; chest expansion is greatly decreased; loses flesh; pulse rate increased and heart may become dilated.

X-ray appearance further accentuated, mottling more intense, nodules larger, and take on conglomerate form so that large shadows are shown corresponding to areas of dense fibrosis.

Diagnosis:

For diagnosis a thorough and chronological occupational history is extremely valuable. Evidence of exposure to silica dust, or lack of such evidence, must be of significance.

The cardinal symptom of silicosis is shortness of breath, and the cardinal sign is decreased chest expansion; the earliest specific indication is the characteristic X-ray appearance. The diagnosis, however, should be made only by the correlation of all the facts, symptoms, signs, occupational history, and laboratory and X-ray observations.

In autopsy, according to McNally, any lung containing over 2 mg. of silicon dioxide per gram of dried tissue, indicates undue exposure to a dusty atmosphere.

Prognosis:

Silicosis is an incurable disease, but the prognosis in the early stages is good if the patient can be removed and placed in the open; but with the advance of the disease the prognosis becomes less favorable, principally on account of the liability of tuberculous infection.

Treatment:

Change of occupation to open air work; high, dry, warm climate best.

Prevention:

The use of various mechanical means of elimination of dust, both the formation and its removal.

Employees entering service should be questioned carefully in order to obtain complete history, especially of any exposure to silica dust; also a careful

physical examination for signs.

In old emphysema and in asthma.

The State's effective data. The highlights are as follows:

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A disease which appears to be directly related to the formation and thus a natural attribute of the nature of the work as the process of work itself must be made relation of any or expected to risk connected national case.

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physical examination should be made, including X-ray film of chest for lung tissue for diagnosis and future record.

In old employees working in dust, periodical examinations should be made, and if symptoms are present, change in occupation.

The State of Illinois has passed a Workmen's Occupational Diseases Act, effective October 1, 1936, for disabilities resulting from occupational diseases. The highlights of the Act, especially as it has reference to silicosis and asbestosis, are as follows:

It defines "Disablement" as meaning disabled from earning full wages at the same work which caused the disease and with the same employer or equal wages in other employment.

No compensation payable for occupational disease unless disablement occurs within one year after the last day of the last exposure to the hazards of the disease, except in occupational disease caused by inhalation of silica dust or asbestos dust where the time limit for disablement is three years after the last day of the last exposure.

"Occupational Disease" is defined as a disease arising out of and in the course of the employment. Ordinary diseases of life to which the general public is exposed outside of the employment shall not be compensable, except where the said diseases follow as an incident of an occupational disease as defined.

A disease shall be deemed to arise out of the employment, only if there is apparent to the rational mind upon consideration of all the circumstances, a direct causal connection between the conditions under which the work is performed and the occupational disease, and which can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment and which can be fairly traced to the employment as the proximate cause, and which does not come from a hazard to which workmen would have been equally exposed outside of the employment. The disease must be incidental to the character of the business and not independent of the relation of employer and employee. The disease need not to have been foreseen or expected but after its contraction it must appear to have had its origin in a risk connected with the employment and to have flowed from that source as a rational consequence.

Amounts payable in case of death are: minimum \$1,000.00, and a maximum of from \$1,000.00 to \$5,500.00.

Amounts payable for disability: (a) In silicosis or asbestosis or either complicated with tuberculosis, employer must provide first aid, medical and surgical and hospital services to cure or relieve the diseases, but not exceeding six months from date of disablement.

In all other cases, the employer shall provide the necessary first aid, medical and surgical services, and all necessary medical, surgical and hospital services thereafter, limited, however to that which is reasonably required to effect a cure from the effects of the disease. The employee may in any case elect to secure his own physician, surgeon and hospital services at his own expense.

(b) Temporary total disability—after six days, compensation (minimum \$7.50, maximum \$15.00 weekly) to be paid, and retroactive to first day after 30 days.