PROCEEDINGS OF THE FIFTEENTH ANNUAL MEETING
OF THE
INTERNATIONAL ASSOCIATION OF INDUSTRIAL
ACCIDENT BOARDS AND COMMISSIONS
HELD AT PATERSON, N. J.
SEPTEMBER 11–14, 1928

JUNE, 1929

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## ANNUAL MEETINGS AND OFFICERS OF THE INTERNATIONAL ASSOCIATION OF INDUSTRIAL ACCIDENT BOARDS AND COMMISSIONS

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The first session of the fifteenth annual meeting of the International Association of Industrial Accident Boards and Commissions was called to order by the chairman, Dr. Andrew F. McBride.

The Chairman. It is indeed a great pleasure for me to welcome you to New Jersey. We are proud, indeed, to have the fifteenth annual convention of the International Association of Industrial Accident Boards and Commissions meet in our State, and I trust that it may be a most successful convention.

This is a very worthwhile organization; it accomplishes much for the general betterment of the positions we occupy in the respective Provinces of Canada and States of the United States. I believe that these meetings do much good. They bring together the men and the women who are engaged in this work for better understanding, for an interchange of ideas, and for a frank discussion of the problems that confront us in our work, and in that way great good comes of these conventions.

I am sorry only that the conventions are not attended by representatives from every State in the United States and from every Province in Canada. These meetings really warrant attendance, and I hope that the governors of the various States of the United States and the lieutenant governors of the various Provinces of Canada will see to it that hereafter all of the conventions of the International Association of Industrial Accident Boards and Commissions are attended by one or more representatives from their respective jurisdictions, so that greater good may come.

The work we are engaged in is a serious work; it is an important work, and it merits the greatest cooperation and the greatest help. Perhaps in the past some organizations have wasted their State's money unnecessarily by not rendering service for the expense entailed in their attending conventions, but that is not so with this association. I believe that every dollar expended in travel or hotel bills,
etc., is thoroughly justified by the amount of good accruing to the States represented in our conventions.

It is a great privilege to introduce to you this morning the governor of this great industrial State of ours. New Jersey, as you well know, is one of the greatest States in the Union industrially; within the confines of this State there is perhaps more industry per mile than in any other State in the Union. It is not a large State territorially, but it is large industrially. It is important, being adjacent to New York, the metropolis of the country—next-door neighbor to it—and having the second largest city in the United States, Philadelphia, on the other side. The governor of this State is intensely interested in the State and in the workers of the State, and has shown it by the many splendid bills affecting the workers and the industry of the State which he has made laws by his signature. We will now hear from our governor, the Hon. A. Harry Moore.

Governor Moore. I came here to welcome you, and to tell you how glad we are that you are here in New Jersey. Doctor McBride has spoken with pride of the State. I know he loves the State because he renders such wonderful service to New Jersey. I will say, without fear of contradiction, that I do not know of a head of a labor department in the United States, or in the world, who gives more of his time and of his talents than Doctor McBride, and when he believes a thing is right, he goes through with it. He is the type of man to have in an office such as that and one of whom I am very proud.

New Jersey, as he said, is an industrial community, so much industrial that, small as it is (it is the forty-seventh State in the Union in size), it is third in manufactured products of the United States. When you look at the skyline of New York and see how wonderful it is, remember the terra cotta over there comes from New Jersey. And when you are talking of wealth, New Jersey is sixth in the United States in wealth. When you think about farm products, remember that little New Jersey is third, in comparison with size—and that is the only one of those figures that is in comparison with size—third in farm products, because of its intensive farming, its intensive agriculture, and its forward movement in that regard. When you want to find the largest dairy farm in the world, you do not go to Washington or to Oregon or to any other place in the world, for right here in New Jersey is the largest dairy farm in the world—the Walker Gordon Farms, outside of Trenton.

We in New Jersey believe that we are first in compensation and in trade relations in the United States. We have the only industrial museum, and I hope Doctor McBride will take you to see that industrial museum in Jersey City. It is up-to-date—there is nothing obsolete there. There you can see the safety devices. When Doctor McBride says to a manufacturer, “You have to have lights that do not throw a reflection on that machine,” he can say, “Come with me, I will show you the lights.” And if he says to a manufacturer, “You must protect this machine in such a way that it will be safe,” he can take the manufacturer to the museum and show him what he means. All these things are there in the museum. They are doing a remarkable work there. Every month there is issued a statement by the Department of Labor of New Jersey. We keep right up to the
moment in the great work that is being done. I do not want to talk about that. Whenever I talk to men who know more about business than I do I think of the story of the fellow who was hired one day to come into a big factory. An engine had broken down, and nobody could start it. Finally they sent for this fellow; he came in, asked for a hammer, tapped here and there for a few minutes, and then said to the engineer, "Start it." The engineer started it, and away it went. The young man sent a bill for $250, and when he got the bill the president of the company said, "My stars! For tapping with a hammer, $250. Send it back to him and tell him to itemize it." The bill came back, itemized as follows: "For tapping with a hammer, $1; for knowing where to tap, $249." You men must know where to tap; you must know your business; it is not for me to tell you of it. After all, what is a conference? What does it mean to you; what do you get out of it? It is only as you get something out of it that it means a thing to your State or your city. It will be a waste of your time and of the money of the city or State that you come from, unless you take back with you a spirit which will carry this thing through to a better, a larger, fulfillment.

I think it was Thompson who said:

By the red blood in an artery
Or the blue blood in a vein,
By the brute strength of a muscle
Or the grey cells of a brain,
We are apt to sit in judgment
On the passing caravan
And denominate some mortal
In the coterie, a man.
But there is a higher standard
Taught by Him who preached of old,
That can't be bought with money
And it's finer far than gold,
For it binds poor humans closer
In its sympathetic strain
Than the red blood in an artery
Or the blue blood in a vein.

That something is fellowship; that something is to get to know the other fellow's viewpoint; that something is not to be so bigheaded that you think you are the only one who knows. The other fellow may know something, and you can get something from him to take back with you to your town.

Some of you come from cities, some of you come from States—some of you come at the expense of a State or of a city—and you owe it to your city or to your State to get the best you can out of this convention and take it back. Why? When you read the Declaration of Independence you read these words, "all men * * * are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness." You men and women represent that part of the Declaration of Independence—life, happiness—because in the old days, when a poor fellow was all crippled up, he was thrown out of his job and went home to his wife and children, done for and thrown on the scrap heap. He wasn't getting his right of happiness, was he? And then along came this organization, or these laws in the States which say that the Declaration of Independence says to that man that he is entitled to be happy. You take him and fix up his arms, or his legs, or his spine, or whatever
is necessary, and send him back to his wife and children; and they are happy, aren't they? Therefore you are rendering service under the Declaration of Independence.

In these days when men in politics are saving the Nation, as they do every four years, let us look back and realize that this Nation was formed, this Government was formed, for just three things—as the Declaration of Independence says—life, liberty, and the pursuit of happiness.

I congratulate you because I see in you the potentialities of a wonderful service to the States and the cities which you represent; I see you going back with the spirit that, no matter what opposition there may be, you will act according to your conscience—not according to any political party, not according to any political fealty, but according to your conscience—and carry out that part of the Declaration of Independence as to life, liberty, and happiness, life and happiness being part of your job.

I remember standing in Philadelphia not long ago—they were having the sesquicentennial, and I represented New Jersey. As I stood there they were reenacting the evacuation of Valley Forge. George Washington came down the line on his gray charger, and as I looked at him my heart beat fast; and then I saw the troops of New Jersey, as well as the troops of the other twelve Colonies, coming down the hill. As I looked at them I visualized those splendid men of the Revolution—splendid, not because of their uniforms, not because of their military bearing, but because, though they were half starved, yet they realized that they were performing a service; splendid because, though they were half frozen, out of the travail of their souls and out of the agony of their bodies came this Nation, and the flag, and something else—the American spirit. When a man gets into an office where he can be of service to the people, he should not sit back and think that he knows it all. He can learn something from someone else, something he can carry back to his city or to his State, and thus he can be of greater service, of greater help, to his State, to humanity, to his God.

Because of the potentialities which are yours, and because I believe that you are honest enough to go back and perform your duty without regard to any political connection, because I believe that you have that spirit that realizes the opportunity for service which is yours—because of all that, I welcome you to New Jersey, and say that I, as governor, am glad to have you here.

[The chairman here introduced the Hon. Wilmer A. Cadmus, acting mayor of Paterson, N. J., who welcomed the convention to the city as follows:]

Mayor Cadmus. You who are delegates to this convention have come to Paterson, our city, which we all love so well, and we want you to go away from it in love with it also; we want you to love it at first sight, if that be possible. Some of you may never have been here before, but we want you to know that we greet you with a handshake and with a pressure that denotes sincerity; we want you to know that you are coming into our city just as you might come into our own homes, to be greeted there most warmly.

Personally, I think it is a privilege and an honor to have a convention such as this come to the city of Paterson. We deem it so.
It is a wonderful work you are doing—something you should be proud of, something we are proud of, and that is the reason we welcome you so warmly, and we want you to go away from Paterson feeling that our welcome was sincere in every way.

Conventions are places where some people go to have a good time. I have attended conventions with friends, where every time I looked around for them, I found they were out seeing the town or something of that sort. That is all very well—we want you to see our city—but conventions are places where men confer; where men learn the thoughts of others; where conferences are held that give you something to take back to your homes and to use to advantage. Conventions are places where we become better educated. We are never too old to learn. If you come here and confer with those who are doing the same type of work that you are doing, and get new ideas and take them back, there is no doubt that you have been a real delegate; that you have not come just for the good time that we want you to have; and that you have absorbed something worth while, and will take it back to your home town.

The governor welcomes you to New Jersey—a wonderful State. I welcome you to Paterson, a wonderful city in that State, and I hope you will go away from here feeling that that welcome was sincere. We will try to make it so.

The Chairman. We are fortunate in having one of the most capable men in our organization respond to the welcome given us by the governor of our State and by the mayor of our city, the industrial commissioner from the great State of New York.

Doctor Hamilton. We were all very much impressed by the exhilarating enthusiasm of the Governor of New Jersey. It is a splendid thing that New Jersey welcomes us in this way, because, as has been pointed out, New Jersey is a great industrial State, as is my own State of New York, and we are interested in solving those problems of industrial life. When we think of the thousands upon thousands of victims of industrial accidents and how the number seems to be mounting, it might perhaps cause some of us to fear that we are not solving that problem, but I believe that we are. And I believe that in New York State, largely through the influence of this organization, we are beginning to see daylight. For years and years those figures mounted up. When we used to tell the people of our State that there was not a single day that went by that there were not at least 1,500 men, women, and children injured while on the job—not on the highways and byways, but while at work—it was absolutely true. In New York State, on January 1, 1925, we changed the noncompensated waiting period. Thereafter a larger number of cases were reported, perhaps for that reason and perhaps because of better reporting generally as the compensation law became better known. Nevertheless, I believe that at the present time, through these influences, through the education of the people in regard to accident prevention as well as the operation of the workmen's compensation law, we have virtually reached the peak. In New York State for the fiscal year ending June 30, 1927, out of 588,000 industrial accidents reported there were 99,000 compensation cases in which awards were made, and for the fiscal year just closed, June 30, 1928, the number of compensation cases in which awards were
made was only 93,000, so that there has been a decrease in that re­
spect from 99,000 to 93,000, and this is so because the attention of the
people of our State has been focused upon this particular matter of
accident prevention.

For years we were interested in the measure of social justice that
the New York State workmen's compensation law afforded to the
victims of industrial accidents, but later on we realized that that was
not solving the problem. While the law was rendering assistance
when it was sorely needed, and that assistance was sure and certain
and definite, nevertheless we came to realize that the ultimate solu­
tion of this problem, in so far as the industrial life of New York
State was concerned, lay along the path of accident prevention, and
I believe that it is through the influence of this organization and the
statistics it has gathered—so that we have scientifically accurate data
and information upon which to proceed—that we have been in posi­
tion to tackle successfully that problem in the Empire State. This
organization has every reason to be proud of its existence, and on
behalf of the State of New York I want to tell you that our hearts
are filled with gratitude for what you have done, and we hope that
you will go right on enlightening the public, so that in the days to
come we will have accident prevention rather than the mounting
statistics of industrial accidents. On behalf of this organization I
thank the governor, the mayor, and the ex-mayor of Paterson for the
generous welcome they have given to us.

[The president's address was then read, as follows:]

Address of the President

BY ANDREW F. McBRIDE, M. D., COMMISSIONER OF LABOR OF NEW JERSEY

On behalf of the State of New Jersey Department of Labor, I
desire to express deep appreciation for the honor that has been paid
to us by the decision of the International Association of Industrial
Accident Boards and Commissions to hold its fifteenth annual meet­
ing in the State of New Jersey. While this is the first time in the
history of the association that it has held a meeting within the confines
of our State, I feel that it is peculiarly appropriate that it should
convene in the historic city of Paterson where Alexander Hamilton,
that great constructive American of early colonial days, arranged for
the application and use of mechanical energy that gave birth to infant
industries on the banks of the Passaic that encouraged and stimu­
lated our people during those early times, and which, undoubtedly,
has done much to inspire American inventive genius with the courage
that has enabled our people to become leaders in industrial produc­
tion throughout the civilized world.

In those early days when Alexander Hamilton was building a monu­
ment of enduring worth to his political vision and economic fore­
sight, a pioneering spirit of independence and self-confidence of such
proportions prevailed among our people that social legislation of the
kind comprehended under the generic term "workmen's compensa­
tion insurance" would probably not only have been undesirable,
but would have met with opposition from the ones who might have
been favored by its passage.
The complexities of modern industrial life, however, have created the necessity for these new social burdens, for it is unthinkable that to-day humanitarian society would consider for a moment the possibility that workmen injured in the performance of duty by accident arising out of and in the course of employment should bear the whole loss as well as endure the suffering and pain inseparable from personal injuries. It is a good thing for modern society that the old notion of the relationship that exists between employer and employee (under the ruling that, in case of accident it was necessary for the employee to show that his employer had failed to discharge a legal duty which he owed to him) has been abandoned in nearly every one of the American States and a more just appreciation of the worker’s value to society has led to the establishment of the principle that compensation should be paid to the worker because of his injury and the handicap from an accident arising out of his employment, rather than that damages should be based on a claim that the employer was dilatory and negligent toward his employee.

It is a cause for congratulation, too, that the judicial barriers erected with such tortuous precision by the learned judiciary of the last century under the operation of which an injured man was unable to appear in court to have his claim heard if it could be proved that the injury was the result of the act of a fellow servant, or was tainted with contributory negligence, or that the injured man assumed the risk of the employment, have been removed. These barbaric relics of the old and cruel period of trial for the working man, when he was in a large measure a prey to the avarice of the stronger groups of society, no longer obtain and he is nearsighted, indeed, to the tremendous benefits that have flowed from this modern legislation, who can not see in it an enduring sign of an approaching time when men will really feel that in the broader and better sense they are their brothers’ keepers.

It is fitting and appropriate that this convention should be held within the confines of the great State of New Jersey, for here was carried on a long legislative battle, covering a period of many years, by the social forces within the State for the passage for the first time of a law that contained an elective schedule of workmen’s compensation benefits to replace the old common-law principles that had obtained until that time. For the last five years I have attended these conventions with regularity and interest, greatly to my edification and instruction, and I feel that the grouping together of trained experts once each year in convention assemblies such as this, where these questions relating to the administration of this social legislation can be discussed, is so valuable that no State in the Union, nor Province within the Dominion of Canada, can afford to be recorded as absent.

While compensation benefits are, naturally, the first questions for serious consideration by this esteemed assemblage, I am conscious that workmen’s compensation insurance has been valuable in many other respects not generally noted in the addresses usually delivered by our speakers. It is true that when a workman is injured immediate financial assistance is a matter of major importance, superseding all other consideration, and that generalizing and speculating on the beatitudes that could be enjoyed if the accident had never
happened can have but little interest for the injured man suffering on his bed of pain and have less value for the helpless dependents of the industrial soldier who has made the supreme sacrifice in the gigantic industrial efforts of our Nation. Nevertheless, no opportunity should be passed at any convention of this organization without giving the fullest and freest expression to the tremendous influence that the passage of the workmen’s compensation laws has had on the preventive efforts that are now being concentrated on the accident problem of our country. It should be remembered that in 1911 when the first workmen’s compensation laws were passed there was no organized effort on the part of society to add a fuller measure of safety to the work hours of employed labor. Standardization of industrial equipment, buildings, machinery, etc., had been given no thought whatsoever by the engineers of that period and accident reporting was of such a meager and unsatisfactory type that but little value could be attached to available statistics. The facts of the matter were that industry had no knowledge whatsoever of the toll in life and limb that it was taking from the working forces of our Nation, and a satisfactory appreciation of this human wastage was never felt until workmen’s compensation laws were passed with the added provision that all accidents should be reported, tabulated, and made a matter of record for future studies. Lord Kelvin, one of the greatest physicists of the last century, said: “When you can measure what you are speaking about, and express it in numbers, you know something about it; and when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the stage of a science.”

If there is one thing that is badly needed in many of our jurisdictions, perhaps in every one, it is the necessity for a more general recognition by departmental officials of the fact that good bookkeeping in the statistical division of industrial accident-prevention work is an essential and important factor of administrative success. In modern business the requirements demand a correct and accurate listing of debits and credits, for a successful industrial enterprise in our day keeps in close and immediate touch with costs and production in order that the balance sheet may show a favorable condition at the end of a fiscal year. Unless accident statistics are tabulated in a careful manner it becomes impossible to determine whether or not the working people in their daily employment are being given that substantial measure of protection that was contemplated by the legislature when labor laws were enacted. While the pioneers in our movement were badly handicapped by a lack of proper statistics, fortunately, during the last 17 years a great improvement has taken place in this line of administrative effort so that in most of the States and Provinces it is possible to form some estimate of the toll that is being taken by industrial accidents.

The International Association of Industrial Accident Boards and Commissions may feel gratified to know that during the entire history of the organization efforts have been made by it to impress upon its members the necessity for the careful compilation of the statistical records as an important adjunct to preventive work. A résumé of the progress that has been made in accident-prevention efforts during this period shows clearly that each year greater and
more determined efforts are being made to operate industry safely. The National Safety Council, with its ramifications in every State and the weight of its tremendous influence being felt in the largest industries in our country, holds annual conventions which are attended by 5,000 to 6,000 delegates and visitors, whose expenses are paid either by themselves or the plants which they represent, to consider and analyze methods calculated to prevent accident. A large number of engineering publications are available to the student, while in the larger groups the problem itself is considered a production matter and the same careful attention to detail is given to it that is accorded to the work of manufacturing products; in short, a network of safety organizations covers American industry, while an intensive effort to educate workers on the care and thoughtfulness that it is necessary to exercise in everyday life is going on constantly. I feel that we have an important part to play in this vast movement for a greater measure of industrial safety, and that the compilation of industrial statistics showing the costs of accidents and the burden that they impose on industry itself is a most helpful factor in encouraging the laggard employer to speed up on safety work.

I should feel very much dissatisfied if I thought that the only advantage to the worker that could be noted in the administration of workmen's compensation laws was merely the collection and distribution of the fund out of which the injured man is paid a compensation claim. Far from this, I am satisfied that the greatest advantage resulting from the enactment of this social legislation is the influence it has had in arousing our people to the necessity for a vigorous preventive campaign that would eliminate from industry those preventable and distressing accidents that to-day reflect upon the business and administrative ability of our people. So far as the administration of compensation itself is concerned, I feel satisfied that in all the States and Provinces laws have been enacted that are best suited for the economic and social needs of the people of those localities. From my observation of the subject I am not convinced that it is possible to establish uniform rates and methods to apply equally in all localities, but, rather, I believe it should be the aim of this organization to pursue certain definite administrative practices that might be helpful in many divergent administrative crises.

In New Jersey we try to prevent accident through the medium of factory inspection and the promotion of safety education in our industries. Efforts are made to encourage plant managers to take their workmen into their confidence, establish safety committees, and carry on continuous safety propaganda in their plants. When accidents occur it is our aim to have hearings in each industrial locality, easily accessible to those who are injured, and to insist that carriers or self-insurers pay claims promptly and without unnecessary equivocation.

The question of coverage is one that should be given serious consideration by every State in the Union, for, as the case stands now, numerically large groups of male and female workers who may be injured during the course of their employment are excluded from the benefits of this social legislation for reasons that are not within their control. In New Jersey the question of casual employment involves complications that many times work hardships on the individual, and
I hope that at some time in the near future some plan will be evolved that will arrange for the establishment of a fund that may be used for instances of this kind. Interstate workers constitute another large body of citizens who have been deprived of the relief guaranteed to other citizens through the operation of the compensation laws.

I think it should be our policy to advocate a coverage broad enough to cover every employed person independent of the character of the man's employment and dependent only upon the fact that the person is employed for wages. The domestic and the farm worker need protection as well as the factory hand or the building-trades man, although in some jurisdictions no relief has been granted to these two classes of employment.

In the case of occupational diseases in States where payments are limited to groups of causes, workers may be excluded who have suffered severe injuries to health from the nature of their employment. It is well to face these facts, admit them, and give such counsel as we can in quarters where measures of relief may be expected to be influenced. The injured people should be given the most liberal medical, surgical, and hospital treatment and the State should be prepared at all times to decide whether or not in a certain instance a workman is being given satisfactory treatment.

The industrial rehabilitation of injured workmen has attracted such noteworthy attention during the past 10 years that but little need be said in favor of its establishment. This rehabilitation service should be in the hands of the most competent experts in their line and not only should it include surgical and medical treatment but also should undertake to help the injured person to find a new place in industry where an honest and self-respecting living could be earned. On these broad organic principles of common sense and modern social justice, departmental activities can function that will have a most helpful influence on the lives and the futures of those unfortunate ones who may be struck down at their daily tasks in our industries.

Even though there was less legislative activity this year than last (because many of the legislatures meet in odd years), still on the whole the cause of workmen's compensation legislation has made substantial progress. Of the 43 States having compensation laws, only 7 met in regular session in 1928 (Kentucky, Louisiana, Massachusetts, New Jersey, New York, Rhode Island, and Virginia). All seven acted on the subject of workmen's compensation. Two States not having compensation acts (Mississippi and South Carolina) held regular sessions but took no action. The legislatures of seven States met in extra session in 1928 (California, Illinois, Iowa, Kansas, Nevada, North Dakota, and Wisconsin) but did not enact any compensation legislation. In addition to their regular sessions the Mississippi and New Jersey Legislatures met in extra session, the latter in three extra sessions, but, except for the first New Jersey extra session, their legislation is not yet available. The legislature of Arizona met in extra session in 1927, after our meeting last year, and passed a few amendments of minor importance. The Congress of the United States has also been in session since our last meeting and has contributed its part in the development of compensation.

The outstanding progress to report is the act of Congress extending the benefits of the longshoremen’s and harbor workers’ compensa-
tion act to employees within the District of Columbia. That Dis-

trict, long without a compensation act, now has a law which may

well be used as a model by some of our States which wish to better

their own laws. The coverage of the act is probably its most out-

standing feature, as it is binding on all employers having one or more

employees, excepting only seamen, interstate railroad employees,

employees covered by the Federal employees' compensation act, and

employees engaged in agriculture, domestic service, and casual

employment.

Of the eight States acting on the subject of workmen's compen-

sation, the greatest number of amendments was passed by New York,

which showed an active interest in liberalizing the law and im-

proving its administration. No single act of any of the States stands

out as deserving particular attention, with the possible exception

of the act of New Jersey, which increased maximum weekly benefits

from $17 to $20 and minimum weekly benefits from $8 to $10. The

general tendency of the legislation passed in the several States was

to extend the coverage of the act to employees of small employers,

to liberalize benefits, and to improve the administration of the acts.

The promptness with which Congress acted to correct the serious

obstacle to the better administration of the Federal longshoremen's

compensation act after the Attorney General had ruled that district

attorneys should not appear in connection with the longshoremen's

act calls forth the admiration of those who know how difficult it is

to get compensation legislation through the legislature.

Two Territorial legislatures passed workmen's compensation laws.

The Philippine act is compulsory, applies to public as well as private

employments, is liberal in its coverage, allows fairly large percentages

of wages in the awards, but places the maximum on awards at 3,000

pesos or $1,500. Injuries covered include illness as well as those

resulting from accidents.

Following the report this year of the Porto Rican Bureau of Labor

to the legislature admitting the failure of the State fund, the

legislature passed a new compensation law. The exclusive State fund

system was replaced by the employers' direct liability secured by

contributions to a competitive State fund, by insuring in an insur-

ance company or mutual association, or under certain conditions by

"self insurance." Administration of the act is now in an industrial

commission of three members in place of the former "workmen's

relief commission" of six. The coverage of the act was extended to

include more workers but the compensation awards were decreased

in several instances, as: For death the maximum was reduced from

$4,000 to $3,000; for total permanent disability the minimum from

$2,000 to $1,000 and the maximum from $4,000 to $3,000, and instead

of allowing fixed amounts for permanent partial injuries scales are

now provided with minimum and maximum limits. By separate

acts the "Porto Rico Mutual Insurance Association" was provided

for and a liquidating board was created to liquidate the present

"Workmen's Relief Trust Fund."

Of the eight Canadian Provinces having compensation laws, Que-

bec, Alberta, Nova Scotia, and Ontario acted on the subject of work-

men's compensation. British Columbia, Manitoba, New Brunswick,

and Saskatchewan did not act.
Quebec passed a new act which is wider in its scope than its predecessor and covers more industries, the benefits allowed were changed and maximum amounts were placed on certain payments, insurance is compulsory with certain exceptions, and, most important of all, the act is administered by a workmen’s compensation commission of three members which has been newly created and which has headquarters in the city of Quebec. The Alberta act was amended by increasing the possible coverage, by increasing the basis of awards from 62½ to 66⅛ per cent of average earnings, by making several additions to the schedule of industrial diseases, and by making several other changes. Nova Scotia solved the difficult problem of the fishing industry by providing for the employers’ liability, secured by insurance in private companies, and by making special provisions for losses of $50,000 or over. Other less important changes were made in the Nova Scotia and the Ontario acts.

Among the great mass of decisions rendered by the courts on the subject of workmen’s compensation during the past year two deserve special attention. The first is the case of Bountiful Brick Co. v. Giles, decided by the Supreme Court of the United States on February 20, 1928. It is important to us because it recognizes as constitutional an interpretation of “arising out of or in the course of” as including not only a death to a man on his way to work before entering upon his employer’s premises, but also a man killed while on his way to work while off the public road and taking a short cut across the land belonging to another person. The case is interesting as showing the development and possibilities in the cooperation between industrial commissions and legal aid societies, as this is the first time in which legal aid counsel, as such, argued a case before the Supreme Court of the United States.

The other case was that of Chernik v. Clyde Steamship Co., in which the constitutionality of the Federal longshoremen’s and harbor workers’ compensation act was upheld in the Court of Appeals of New York on April 10, 1928. No opinion was filed. It is understood that both parties to the action are anxious to take the case to the United States Supreme Court, where it may be argued and decided during the coming year.

In conclusion, permit me to congratulate this organization on the splendid achievements that have marked its yearly progress since it was organized and to hope that it will continue indefinitely to throw light on the perplexing problems that are met daily by compensation boards and commissions.

It would be difficult indeed for anyone to attend these conventions and not return to his home office convinced of the integrity and high standing of the men to whom has been intrusted the work of administering the compensation laws of our country, nor to feel that he, as a delegate, had not been greatly improved in his knowledge and understanding of workmen’s compensation procedure as a whole. I bid you welcome to our city and hope that your stay with us will be a pleasant and a profitable one.

[On motion made, seconded, and carried, the address of the president was referred to the committee of resolutions.]
BUSINESS MEETING

[The following convention committees were appointed by the president:]

Committee on nominations.—L. W. Hatch, of New York; G. A. Kingston, of Ontario; A. E. Brown, of Maryland; W. M. Scanlan, of Illinois; P. P. Deans, of Virginia.

Auditing committee.—W. J. Maguire, of Pennsylvania; Miss R. O. Harrison, of Maryland; F. M. Wilcox, of Wisconsin; J. P. Meade, of Massachusetts; F. M. Williams, of Connecticut.

Resolutions committee.—F. A. Duxbury, of Minnesota; F. M. Wilcox, of Wisconsin; F. W. Armstrong, of Nova Scotia; E. I. Evans, of Ohio.

The CHAIRMAN. The next on the program is the report of the secretary-treasurer.

REPORT OF THE SECRETARY

During the year just passed there has been no change in the list of active members of the International Association of Industrial Accident Boards and Commissions, there being 36 active members, as follows:

- United States Employees' Compensation Commission.
- Arizona Industrial Commission.
- California Industrial Accident Commission.
- Connecticut Workmen's Compensation Commission.
- Delaware Industrial Accident Board.
- Georgia Industrial Commission.
- Idaho Industrial Accident Board.
- Illinois Industrial Commission.
- Indiana Industrial Board.
- Iowa Workmen's Compensation Service.
- Kansas Public Service Commission.
- Maine Industrial Accident Commission.
- Maryland State Industrial Accident Commission.
- Massachusetts Department of Industrial Accidents.
- Minnesota Industrial Commission.
- Montana Industrial Accident Board.
- Nevada Industrial Commission.
- New Jersey Department of Labor.
- New York Department of Labor.
- North Dakota Workmen's Compensation Bureau.
- Ohio Industrial Commission.
- Oklahoma State Industrial Commission.
- Oregon State Industrial Accident Commission.
- Pennsylvania Department of Labor and Industry.
- Utah Industrial Commission.
- Virginia Industrial Commission.
- Washington Department of Labor and Industries.
- West Virginia Workmen's Compensation Department.
- Wisconsin Industrial Commission.
- Wyoming Workmen's Compensation Department.
- Department of Labor of Canada.
- Manitoba Workmen's Compensation Board.
- New Brunswick Workmen's Compensation Board.
- Nova Scotia Workmen's Compensation Board.
- Ontario Workmen's Compensation Board.
The above list includes three organizations—the United States Bureau of Labor Statistics, the United States Employees' Compensation Commission, and the Department of Labor of Canada—which are given full powers of membership by the terms of the constitution itself and are exempt from the payment of dues.

Mr. I. K. Huber joined as an associate member since the Atlanta meeting. There are now seven such members, as follows:

**Associate Members**

- George E. Beers, attorney and counselor at law, New Haven, Conn.
- E. I. du Pont de Nemours & Co., Wilmington, Del.
- I. K. Huber, Empire Cos., Bartlesville, Okla.
- Industrial Accident Prevention Associations, Toronto, Ontario.
- Porto Rico Industrial Commission
- Republic Iron & Steel Co., Youngstown, Ohio.

Mr. Benjamin W. Kernan, of New Orleans, who joined the association as an associate member just prior to the Atlanta convention, died on April 17, 1928.

On January 19, 1928, Mr. Charles H. Verrill, a member of the United States Employees' Compensation Commission, and former secretary of the association, died suddenly at his home in Washington, D. C.

The committee on investigation of results of compensation awards met in the secretary's office in Washington, D. C., on April 10, 1928. The results of that meeting will be included in the report of the committee.

Inasmuch as Dr. Francis D. Donoghue, medical advisor of the Department of Industrial Accidents of Massachusetts, was attending the Fifth International Conference for Medical Science as Applied to Workmen's Accidents and Occupational Disease, held in Budapest September 3-9, 1928, he consented to represent the International Association of Industrial Accident Boards and Commissions at that conference. His report of the meeting has not, of course, yet been received.

As authorized by the executive committee at its meeting just after the Atlanta convention the proceedings of the last three meetings were indexed and bound, and copies furnished to the membership of the association. Bound copies of Bulletin No. 212, which was not included in the previous binding, were also distributed. The proceedings of the association now in the files of its membership comprise four bound volumes.

At the meeting of the executive committee following the Atlanta convention the honorarium of the secretary-treasurer was increased to $600.

In January, 1928, the secretary addressed a circular letter to the members of the association requesting information relative to the cooperation between them and the legal-aid organizations. The result of that letter is included in the report of the committee on legal aid.

The following principals and alternates represent the association on the safety code correlating committee of the American Standards Association (formerly the American Engineering Standards Committee):

To serve until December 31, 1928—

**PRINCIPALS**

- Ethelbert Stewart, United States Commissioner of Labor Statistics.
- John Roach, Department of Labor of New Jersey.
- L. W. Hatch, Department of Labor of New York.
BUSINESS MEETING

ALTERNATES

G. N. Livdahl, Workmen's Compensation Bureau of North Dakota.
Henry McColl, Industrial Commission of Minnesota.
M. H. Christopherson, Department of Labor of New York.

To serve until December 31, 1929—

PRINCIPALS

Sharpe Jones, Industrial Commission of Georgia.
Charles A. Waters, Secretary of Labor and Industry of Pennsylvania.

ALTERNATES

H. R. Witter, Department of Industrial Relations of Ohio.
G. R. Yearsley, Industrial Commission of Utah.

To date, the United States Bureau of Labor Statistics has published the following safety codes, in the formulation of which the association took part:

- Bulletin No. 351. Safety code for the construction, care, and use of ladders.
- Bulletin No. 364. Safety code for mechanical power-transmission apparatus.
- Bulletin No. 375. Safety code for laundry machinery and operations.
- Bulletin No. 433. Safety codes for the prevention of dust explosions.
- Bulletin No. 436. Safety code for the use, care, and protection of abrasive wheels.
- Bulletin No. 447. Safety code for rubber mills and calenders.
- Bulletin No. 463. Safety code for mechanical power-transmission apparatus.
(First revision.)

Copies of these codes can be obtained on request from the Bureau of Labor Statistics.

In response to the letter sent out by the secretary on January 20, 1927, appealing to the administrators of the workmen's compensation laws of the United States and Canada to cooperate in gathering records from which to compile an American remarriage table, we now have on file information for 11,600 cases. Additional records are expected later. New York stated that they intended to work up some material along this line, but owing to press of work had had to abandon it, though they might be able to furnish information later. Letters from Indiana, Maine, Ohio, Ontario, and the United States Employees' Compensation Commission stated that the information is available, but they are unable to furnish it because of the work involved. Georgia, Minnesota, and Utah have promised to send in their forms at an early date, while West Virginia will furnish records as to additional experience along this line.

As the material at present on file covers a greater experience than that upon which the Dutch remarriage table was based, it is desired to know whether the association wishes the committee on statistics and compensation insurance cost to go ahead with the compilation of the table, using the material at hand, or whether the matter should be postponed until a further amount of material is available.

The Association of Governmental Labor Officials of the United States and Canada at its New Orleans convention passed the following resolution in
regard to legislation which prevents members of the various commissions from attending conventions outside of their States:

Whereas several of the State legislatures in recent years have enacted legislation which restricts their labor department officials from attending conventions of this association, regardless of the fact that they are members; and

Whereas many of these States have in the past sent delegates who have made valuable contributions from their experience in the administration and enforcement of labor laws and in turn have received valuable information to aid them in the administration of their laws; Be it

Resolved, That the attention of the State legislatures be called to the fact that exceptions should be made to conventions where State officials are going to conventions and conferences with other State officials administering the same character of laws or performing the same functions; that we believe these meetings have become real specialized institutes and that the State loses more than it gains by prohibiting the attendance of labor officials at these gatherings; and be it further

Resolved, That an effort be made to have such State legislatures exempt those who make up the membership of this association and the International Association of Industrial Accident Boards and Commissions from the restrictive provisions of such acts.

It is suggested by your secretary that this association pass a similar resolution, and take it home with you and inform the State officials that you mean what you say. We continue to get letters urging that we hold conventions in States where the legislature would forbid the attendance of the commissioners at a meeting in any other State.

Purely for the purpose of the record and not in any sense to provoke discussion in this convention, I will say that the self-insurers' association of one State is circulating a petition requiring the workmen to pay 25 per cent of the insurance premium. Ultimately this question will become an issue. As you know, one State—Oregon—charges each workman 1 cent a day, which amounts to about 9 per cent of the total premium paid under the State fund of that State. Twenty-five per cent would amount to somewhere around 2½ cents a day for each worker. I am advised by the Oregon commissioner that most of the employers do not deduct this from the workmen's pay roll but pay it themselves, as it is not worth the amount of figuring involved. Incidentally, this casts some side light on the terrible hardship that workmen's compensation is upon employers.

The secretary is frequently called upon for statistical information which in the nature of things could be secured only from the States and which under present conditions can not be so secured. The question of actual coverage is not answered by the terms of the law. The law which says that all persons employing more than five people are covered by the law does not tell you how many people are employing five persons or more. The Census Bureau has stopped taking manufacturing establishments or employers in terms of employees and are simply taking them in terms of value of output. The subletting of contracts and the subletting of subcontracts have so divided the question of legal employment that we know less and less each year about what "cover" actually means. I recommend the serious consideration of the terms of the California law, which, if you strike out certain industrial exceptions, would give us a compulsory compensation coverage for every human being employed. I have called special attention to some of the methods of side-stepping coverage in an article which is listed on the program.

It is an old and time-worn, and I may say useless, theory or fetish that would have this association work up a uniform compensation law, including rates, etc. I am taking no time even to discuss the matter. But there are certain things upon which in my opinion the longevity of this association
depends which ought to be definitely worked out into a uniform code and agreed upon—not only agreed upon, but the association should use its utmost efforts to have them written into the law of every State. These are—

1. Extraterritoriality.
2. Complete coverage, with methods for securing it.
3. A method of securing and publishing annually information as to administrative costs, which will take into consideration and be graduated by the benefits in each jurisdiction.

Some time ago I sent out a circular asking for a statement of administrative cost per case actually handled. One State ran as low as 22 cents. Other States ran way up into dollars—I don’t remember the exact amount, but I think one went as high as $12. But the injured man and society got more in proportion in the State that cost $12 than in the State that cost 22 cents. Therefore administrative costs must be stated in terms of ratio between the individual and social gain and the actual administrative cost. Granting that this is not an easy task, I insist it is not an impossible one. The quicker it is done the better for the association and the various States. You are not going to get a very high speed rate in the State that says its actual administrative cost is 22 cents for each case and utterly ignores the benefits bestowed.

The proceedings of the Atlanta convention have been published by the United States Bureau of Labor Statistics as its Bulletin No. 456, and copies are available at the headquarters here or will be sent from the bureau upon request.

Respectfully submitted.

Ethebert Stewart, Secretary-Treasurer.

AUGUST 31, 1928.

FINANCIAL STATEMENT OF THE TREASURER

BALANCE AND RECEIPTS

1927

Sept. 15. Balance, in bank $2,135.74; unexpended postage and telegraph fund, $3.89. $2,139.63
16. Montana Industrial Accident Board, 1928 dues 50.00
   New Brunswick Workmen’s Compensation Board, 1928 dues (exchange on above 25 cents) 49.75
29. I. K. Huber, 1928 dues 10.00
Oct. 15. Interest on registered Liberty bonds (two at $100 and one at $500) 14.88
Nov. 5. Industrial Accident Prevention Associations, 1928 dues 10.00
10. Interest on $1,000 coupon Liberty bond 21.25
15. Manitoba Workmen’s Compensation Board, 1928 dues 50.00
Recall of two $500 Liberty bonds (Nos. E-00170425 and E-00192340) 1,000.00
Interest on above Liberty bonds 21.24

1928

Jan. 1. Interest on bank account 14.95
Mar. 6. Interest on Canadian bonds as of Feb. 1, 1928 (5 of $100 each) 13.75
Apr. 16. Interest on registered Liberty bonds ($700) 14.87
19. Interest from Dec. 12, 1927, to Apr. 19, 1928, on $1,500 certificate of Paterson Mortgage & Guaranty Title Co. 29.10
25. Interest on $1,000 coupon Liberty bond 21.25
July 1. Interest on bank account 7.91
7. E. I. du Pont de Nemours & Co., 1929 dues 10.00
George E. Beers, 1929 dues 10.00
12. Ontario Workmen’s Compensation Board, 1929 dues 50.00
13. Virginia Industrial Commission, 1929 dues 50.00
16. West Virginia Workmen’s Compensation Department, 1929 dues 50.00

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<tr>
<th>Date</th>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>July 17</td>
<td>Republic Iron and Steel Co., 1929 dues</td>
<td>$10.00</td>
</tr>
<tr>
<td>19</td>
<td>California Industrial Accident Commission, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>21</td>
<td>Massachusetts Department of Industrial Accidents, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td></td>
<td>Industrial Accident Prevention Associations, 1929 dues</td>
<td>10.00</td>
</tr>
<tr>
<td>23</td>
<td>Connecticut Workmen's Compensation Commissioner, first district, 1929 dues</td>
<td>10.00</td>
</tr>
<tr>
<td>24</td>
<td>New Brunswick Workmen's Compensation Board, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>25</td>
<td>Massachusetts Department of Industrial Accidents, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>26</td>
<td>Massachusetts Department of Industrial Accidents, 1929 dues</td>
<td>50.00</td>
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<tr>
<td>27</td>
<td>Connecticut Workmen's Compensation Commissioner, fifth district, 1929 dues</td>
<td>10.00</td>
</tr>
<tr>
<td>28</td>
<td>Arizona Industrial Commission, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>29</td>
<td>Ohio Industrial Commission, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>Aug. 1</td>
<td>Oklahoma State Industrial Commission, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>2</td>
<td>Illinois Industrial Commission, 1929 dues</td>
<td>50.00</td>
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<tr>
<td>3</td>
<td>Nova Scotia Workmen's Compensation Board, 1929 dues</td>
<td>50.00</td>
</tr>
<tr>
<td>7</td>
<td>Iowa Workmen's Compensation Service, 1929 dues</td>
<td>50.00</td>
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<tr>
<td>8</td>
<td>Connecticut Workmen's Compensation Commissioner, second district, 1929 dues</td>
<td>10.00</td>
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<td></td>
<td>Connecticut Workmen's Compensation Commissioner, fourth district, 1929 dues</td>
<td>10.00</td>
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<tr>
<td>11</td>
<td>Georgia Industrial Commission, 1929 dues</td>
<td>50.00</td>
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<td>8</td>
<td>New Jersey Department of Labor, 1929 dues</td>
<td>50.00</td>
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<tr>
<td>15</td>
<td>Connecticut Workmen's Compensation Commissioner, third district, 1929 dues</td>
<td>10.00</td>
</tr>
<tr>
<td>17</td>
<td>Utah Industrial Commission, 1929 dues</td>
<td>50.00</td>
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<tr>
<td>21</td>
<td>Connecticut Workmen's Compensation Commissioner, fifth district, 1929 dues</td>
<td>10.00</td>
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<td>22</td>
<td>Wyoming Workmen's Compensation Department, 1929 dues</td>
<td>50.00</td>
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<td>29</td>
<td>Maine Industrial Accident Commission, 1929 dues</td>
<td>50.00</td>
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<td>Sept. 1 and 4</td>
<td>Interest on Canadian bonds ($500)</td>
<td>13.75</td>
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<td>4</td>
<td>Nevada Industrial Commission, 1929 dues</td>
<td>50.00</td>
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**DISBURSEMENTS**

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<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Sept. 15</td>
<td>Postage and telegraph fund</td>
<td>3.89</td>
</tr>
<tr>
<td>16</td>
<td>Chas. G. Stott &amp; Co., 100 pencils for use at Atlanta convention</td>
<td>1.80</td>
</tr>
<tr>
<td>Oct. 3</td>
<td>Glenn L. Tibbott, work at Atlanta convention</td>
<td>25.00</td>
</tr>
<tr>
<td></td>
<td>Elizabeth Ragland, work at Atlanta convention</td>
<td>25.00</td>
</tr>
<tr>
<td></td>
<td>Mrs. W. G. Causey, work at Atlanta convention</td>
<td>25.00</td>
</tr>
<tr>
<td>4</td>
<td>Ethelbert Stewart, expenses attending Atlanta convention over amount allowed by Bureau of Labor Statistics</td>
<td>9.26</td>
</tr>
<tr>
<td>21</td>
<td>Helen W. Johnson, reporting proceedings of the Atlanta convention</td>
<td>300.52</td>
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<td></td>
<td>Maryland Casualty Co., bonding secretary-treasurer for year ending Oct. 23, 1928</td>
<td>12.50</td>
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<td>Nov. 9</td>
<td>Glen L. Tibbott, partial payment for indexing proceedings, Salt Lake City, Hartford, and Atlanta convention</td>
<td>50.00</td>
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<tr>
<td>21</td>
<td>Glen L. Tibbott, partial payment stenographic and clerical services, 1927-28</td>
<td>75.00</td>
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<tr>
<td></td>
<td>Eva M. Taylor, partial payment stenographic and clerical services, 1927-28</td>
<td>75.00</td>
</tr>
<tr>
<td></td>
<td>Postage and telegraph fund</td>
<td>5.00</td>
</tr>
<tr>
<td>Dec. 2</td>
<td>Gibson Bros., printing 2,000 letterheads and 1,000 envelopes</td>
<td>33.75</td>
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<tr>
<td>10</td>
<td>Paterson Mortgage &amp; Guaranty Title Co., investment in mortgage certificates</td>
<td>1,500.00</td>
</tr>
<tr>
<td>22</td>
<td>Ethelbert Stewart, partial payment honorarium 1927-28</td>
<td>200.00</td>
</tr>
</tbody>
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BUSINESS MEETING

1928

Feb. 18. Glenn L. Tibbott, final payment for indexing proceedings Salt Lake City, Hartford, and Atlanta conventions... $100.00

Apr. 18. Ethelbert Stewart, partial payment honorarium 1927-28... 250.00

George A. Simonds & Co., binding proceedings of Salt Lake City, Hartford, and Atlanta conventions and Bulletin No. 212 (75 copies) .................................................. 98.15

June 14. Postage and telegraph fund ................................................... 5.00

26. Ethelbert Stewart, balance of honorarium 1927-28... 150.00

July 9. Glenn L. Tibbott, balance for stenographic and clerical services, 1927-28... 75.00

Eva M. Taylor, balance for stenographic and clerical services, 1927-28... 75.00

Aug. 1. Exchange on 1929 dues New Brunswick Workmen's Compensation Board ........................................... 25

14. Postage and telegraph fund ................................................... 5.00

22. Exchange on 1929 dues Nova Scotia Workmen's Compensation Board ........................................... 25

July 27. Exchange on 1929 dues Ontario Workmen's Compensation Board ........................................... 25

Sept. 4. Balance, bank deposits ................................................... 1,591.71

SUMMARY

RECEIPTS

Cash in bank ................................................................. $2,135.74
Cash in postage fund ................................................... 3.89
Membership dues ...................................................... 1,379.75
Recall of two Liberty bonds ........................................... 1,000.00
Interest:
Securities ................................................................. $150.09
Bank deposits ...................................................... 22.86

Total .............................................................. 4,692.33

DISBURSEMENTS

Binding proceedings, twelfth, thirteenth, and fourteenth conventions... 98.15
Printing ................................................................. 33.75
Postage ................................................................. 18.89
Indexing proceedings, twelfth, thirteenth, and fourteenth conventions... 150.00
Reporting proceedings, fourteenth annual convention ........................................... 300.52
Bonding secretary-treasurer ........................................... 12.50
Purchase of mortgage certificates, Paterson Mortgage & Guaranty Title Co ........................................... 1,500.00
Honorarium and clerical service in secretary-treasurer's office ........................................... 900.00
Clerical service at fourteenth annual convention ........................................... 75.00
Exchange on dues for 1929 of Workmen's Compensation Boards of Ontario, New Brunswick, and Nova Scotia ... 75
Miscellaneous ................................................................. 11.06

Total .............................................................. 3,100.62

Balance: Cash in bank ................................................... 1,591.71

4,692.33

1 Of this check for $5 for postage and telegraph fund, there is an amount of $4.63 unexpended at this time.
FIFTEENTH ANNUAL MEETING OF I. A. I. A. B. C.

ASSETS

Cash in bank_______________________________________________________ $1,591.71
Cash in postage fund---------------------------------------------------------------------------- 4.63
Securities:
United States Liberty bonds--------------------------------------$1,700.00
Canadian bonds_______________________________________ 500.00
Mortgage certificates, Paterson Mortgage & Guaranty Title Co----------------------------------- 1,500.00

Total____________________________________________________________ 3,700.00

In addition to the assets enumerated above there are the following unpaid dues:

1928:
Porto Rico Industrial Commission__________________________________$10.00

1929:
Idaho Industrial Accident Board__________________________________ 50.00
Indiana Industrial Board________________________________________ 50.00
Kansas Public Service Commission________________________________ 50.00
Maryland State Industrial Accident Commission____________________ 50.00
Minnesota Industrial Commission__________________________________ 50.00
Montana Industrial Accident Board________________________________ 50.00
New York Department of Labor____________________________________ 50.00
Oregon State Industrial Accident Commission______________________ 50.00
Washington Department of Labor and Industries____________________ 50.00
Porto Rico Industrial Commission___________________________________ 10.00
Manitoba Workmen’s Compensation Board____________________________ 50.00

520.00

The following securities are in safety deposit box S-363, National Savings & Trust Co., Washington, D. C.—Ethelbert Stewart:

United States Liberty bonds:
No. 1217874___________________________________________________________ $100
No. 1217875____________________________________________________________ 100
No. 283204_____________________________________________________________ 500
No. A-60031071________________________________________________________ 1,000

Dominion of Canada bonds (5) Nos. 1832-1836 Inclusive, at $100 each___ 500
Paterson Mortgage & Guaranty Title Co., certificate No. 6296, Series 221, due Oct. 19, 1930.____________________________________ 1,500

3,700

Respectfully submitted.

ETHELBERT STEWART, Secretary-Treasurer.

SEPTEMBER 4, 1928.

[On motion made, seconded, and carried, the secretary’s report was referred to the resolutions committee and the treasurer’s report to the auditing committee.]

The CHAIRMAN. The next order of business is the report of the regular committees. The first committee report is that of the committee on statistics and compensation insurance costs, of which Doctor Hatch is chairman.

REPORT OF THE COMMITTEE ON STATISTICS AND COMPENSATION INSURANCE COST

The committee has nothing to present at this meeting for action by the association. On one matter, however, it is in order to make a progress report at this time. This is the revision of the standard plan for accident statistics.
originally formulated by your committee and adopted by the association. The reports of the committee on statistics at the Hartford and Atlanta conventions indicate how the movement for such a revision originated and the steps taken to carry it out under the procedure of the American Standards Association (formerly the American Engineering Standards Committee) which procedure has heretofore been followed in a number of instances for the formulation of safety codes in which this association has been interested. Since the last convention further developments have been as follows:

The revision committee which, under the procedure of the American Standards Association, is known as a sectional committee, has been appointed and stands at present as follows:

Leonard W. Hatch, New York State Industrial Board, chairman.
C. B. Auel, Westinghouse Electric & Manufacturing Co.
David S. Beyer, Liberty Mutual Insurance Co.
E. F. Blank, Jones & Laughlin Steel Co. (representing the metals section of the National Safety Council).
M. H. Christopherson, New York State Insurance Fund.
C. L. Close, United States Steel Corporation (representing the American Iron and Steel Institute).
Edward Crane, Interstate Commerce Commission.
T. Norman Dean, Ontario Workmen's Compensation Board.
Lewis DeBlois, National Bureau of Casualty & Surety Underwriters (representing the National Safety Council).
Paul Dorweller, Aetna Insurance Co.
E. I. Evans, Ohio State Insurance Fund.
John H. Hall, Virginia Bureau of Labor and Industry (representing the Association of Governmental Labor Officials).
L. L. Hall, National Council on Compensation Insurance.
H. W. Heinrich, Travelers Insurance Co.
E. L. Hewitt, Detroit Industrial Safety Council (representing the rubber section of the National Safety Council).
John F. Jackson, New York Edison Co.
W. Dean Keefer, National Safety Council.
E. W. Kopf, Metropolitan Life Insurance Co.
M. G. Lloyd, United States Bureau of Standards.
W. J. Maguire, Pennsylvania Department of Labor and Industry.
J. A. Morford, National Industrial Conference Board.
O. F. McShane, Utah Industrial Commission.
E. B. Patton, New York State Department of Labor (representing the committee on governmental labor statistics of the American Statistical Association).
D. J. Price, United States Department of Agriculture.
Dan L. Royer, Ocean Accident & Guarantee Corporation.
E. L. Sinclair, United States Navy Department.
Ethelbert Stewart, United States Department of Labor.
David Van Schaack, Aetna Insurance Co.
W. G. Voge, New York State Insurance Fund.
S. W. Wilcox, Illinois Department of Labor.
H. E. Wilrig, Lumber Mutual Casualty Co.
Herman R. Witter, Ohio Department of Industrial Relations.

There was a meeting of the sectional committee in New York City on March 9, 1928, attended by 16 of the members. At this meeting it was agreed that the work of the committee should be confined to accident statistics for the aid of accident prevention, and should not include statistics of compensation. The scope of the committee's work agreed on is more specifically indicated by the four working subcommittees which it was decided should be appointed by the
chairman, these being subcommittees on: (1) Definitions; (2) accident rates; (3) classification of industries; and (4) classification of causes.

After the above-mentioned meeting the chairman appointed the following as members of the four subcommittees:

On definitions:
- W. Dean Keefer, National Safety Council, chairman.
- Edward Crane, Interstate Commerce Commission.
- Paul Dorweiler, Aetna Life Insurance Co.
- Evan I. Evans, Ohio Industrial Commission.

On accident rates:
- T. Norman Dean, Ontario Workmen's Compensation Board.
- John Price Jackson, New York Edison Co.
- Edwin W. Kopf, Metropolitan Life Insurance Co.

On classification of industries:
- David S. Beyer, Liberty Mutual Insurance Co.
- J. A. Morford, National Industrial Conference Board.
- S. W. Wilcox, Illinois Department of Labor.

On classification of causes:
- E. F. Blank, National Safety Council, metals section.
- H. W. Heinrich, Travelers Insurance Co.
- W. J. Maguire, Pennsylvania Department of Labor and Industry.
- Dan L. Royer, Ocean Accident & Guarantee Corporation.

The work in these subcommittees of preparing tentative revisions for presentation to the sectional committee for its consideration is now well under way.

Respectfully submitted.

L. W. Hatch, Chairman Committee on Statistics.

[On motion made, seconded, and carried the report was received and the committee was continued with power to act.]

The Chairman. The next report is that of the committee on investigation of results of compensation awards by Miss R. O. Harrison.

REPORT OF COMMITTEE ON INVESTIGATION OF RESULTS OF COMPENSATION AWARDS

By Miss Rowena O. Harrison

At the Salt Lake City convention of the International Association of Industrial Accident Boards and Commissions a committee was organized on the subject of investigation of results of compensation awards. At that time it was pointed out that the various boards and commissions, with the exception of the State of Massachusetts, were not following up, to any satisfactory extent, the awards that were passed by them, to see whether they proved themselves by events to be the proper award in the case, and that students in some colleges and universities were investigating the results of workmen's compensation laws.

At the Hartford convention of this association the committee recommended that State compensation boards and commissions begin as soon as possible, in each State, to inaugurate a systematic follow-up system of (1) all lump-sum settlements regardless of the nature of the injury; (2) all permanent par-
tial and permanent total disability cases, whether or not the same are settled in lump sums; and that they use, as part of their plan, a questionnaire prepared by the committee and which may now be found in Bulletin No. 432 of the United States Bureau of Labor Statistics, so that when a number of States have made investigations, no matter how narrow or broad the investigation may be (as there is no thought on the part of the committee of controlling the State investigations), we may have certain essential and comparable information from all. It was further recommended that the secretary of this association communicate with the principal universities and colleges in the United States and offer, when the student undertook such investigation, the cooperation of the Bureau of Labor Statistics or that of the International Association of Industrial Accident Boards and Commissions.

The committee desires to report to this association that 650 universities and colleges in the United States have been communicated with and offered the cooperation of the Bureau of Labor Statistics or that of the International Association of Industrial Accident Boards and Commissions in this line of work. The International Association of Industrial Accident Boards and Commissions, having charge of all records pertaining to the adjudication of the workmen’s compensation laws, can make accessible to the student investigating the results of compensation laws such information, which would be of assistance to him, and can advise him of other students doing the same line of research work, and on the other hand it will get the results of such work for the benefit of State boards and commissions.

The committee, through its investigation of this work, finds that several commissions, as a side issue and for their own satisfaction and benefit, when an investigator of the bureau is in a locality in which there is a claimant who has received a lump sum or who has a very serious injury and is drawing compensation for either permanent partial or permanent total disability, have the investigator report on that particular case. The committee recommends that States making such survey of the results of its own work use as a part of its plan the questionnaire prepared by the committee, so that all of the States may have knowledge of and profit by the experience of each.

The committee further reports that several States have started a systematic investigation of the results of compensation awards, which investigations are being made either through the mail or by inspectors with little cost to the commissions.

Maryland is making its investigation through the mail. It is sending out questionnaires on all lump-sum awards of over $500, in all permanent total disability cases, in permanent partial disability cases of serious injuries, and in all fatal cases where lump sums have been granted. Four-fifths of the number of questionnaires sent out have been returned satisfactorily answered and showing appreciation of our interest. Several of the questionnaires were returned with a written invitation to visit the beneficiaries at their stores or to see their homes purchased with the lump sums granted by the commission, and some of the answers requested advice. Up to this time not a single reopening of a case has been requested because of our investigation.

The results of these investigations are to be furnished to the secretary of this association and combined by him in such a way as to furnish for all the States the results of the investigation in each.

[On motion made, seconded, and carried the report was referred to the resolutions committee.]

The Chairman. The next order of business is the report of the committee on national legal-aid organizations, by W. H. Horner, chairman.
REPORT OF JOINT COMMITTEE OF THE INTERNATIONAL ASSOCIATION OF INDUSTRIAL ACCIDENT BOARDS AND COMMISSIONS AND THE NATIONAL ASSOCIATION OF LEGAL-AID ORGANIZATIONS, 1928

The joint committee representing the two organizations, which was continued at the Atlanta convention of this association for further consideration of the legal-aid problem, has now reached the point where the next step is proper contact between the various compensation jurisdictions and the legal-aid representatives or authorities located in these districts. At the convention of this association in Salt Lake City a complete list of legal-aid organizations in operation throughout the United States was submitted as part of the report of the committee and is published in Bulletin No. 406 of the United States Bureau of Labor Statistics. A later list was published in the July, 1928, issue of the Monthly Labor Review of that bureau. The directory is available to the compensation authorities for the purpose of making plans for securing the services of the legal-aid organizations in certain cases.

The plan which is being followed in the State of Massachusetts between the State Industrial Accident Board and the Boston Legal Aid Society has been referred to repeatedly in the reports of this committee as the most practical way of cooperation between the two organizations, and we believe it can be used to good advantage in other States in disposal of troublesome or controverted cases.

In order to ascertain the extent to which the cooperation in the legal-aid organizations in the various States is being utilized as suggested at the Salt Lake City and subsequent conventions of the International Association of Industrial Accident Boards and Commissions, a questionnaire was prepared and sent out by the secretary of this association to the workmen's compensation and labor officials of the various States.

Among the questions asked were the following:

1. Is there a legal-aid organization in the city in which your office is located?
2. If so, has a contact with that organization been formed along the lines suggested by the conventions named above?
3. In how many workmen's compensation cases has there been actual appearance before your commission of agents of the legal-aid organization as representatives of the injured?

In reply to question No. 1 the answer "No" was received from the following States: Alabama, Arizona, Arkansas, Delaware, Idaho, Iowa, Kansas, Maine, Maryland, Missouri, Mississippi, Montana, Nebraska, Nevada, New Hampshire, North Carolina, North Dakota, Oklahoma, Oregon, Porto Rico, South Dakota, Texas, Virginia, Vermont, and Wyoming.

The following States replied in the affirmative in answer to questions Nos. 1 and 2: Colorado, Georgia, Louisiana, Massachusetts, and Rhode Island.

The following States answered "Yes" to question No. 1 and "No" to question No. 2: Kentucky, Minnesota, New Jersey, New York, Ohio, Tennessee, and Wisconsin.

The States reporting actual appearance before the compensation authorities of agents of the legal-aid organizations as representatives of the injured in reply to question No. 3 were: Colorado, Georgia, Louisiana, Massachusetts, Rhode Island, and Tennessee.

In the State of Minnesota the industrial commission gives legal aid in compensation cases. This situation also applies in the State of Pennsylvania, where legal aid is furnished in some cases by attorneys connected with the workmen's compensation board. In the latter State the adjusters connected with the
Bureau of Workmen's Compensation represent the claimants in many contested cases before the referees and the workmen's compensation board.

A conference was held between the referees located in the city of Philadelphia and the legal-aid authorities in that city for the purpose of discussing the legal-aid problem. It was agreed that in cases where the services of the legal-aid association would be helpful such cases would be called to the attention of the representatives of the legal-aid society.

Since the replies from the States where contact with the legal-aid organizations has been made indicate that this arrangement has been satisfactory, we desire strongly to recommend that advantage be taken of this service in the States where there may be unusual delay in disposing of contested cases due to the fact that the injured person is not properly represented at the hearings before the referees, workmen's compensation boards and industrial commissions.

Respectfully submitted.

INTERNATIONAL ASSOCIATION OF
INDUSTRIAL ACCIDENT BOARDS AND COMMISSIONS,
W. H. HORNER, PENNSYLVANIA, CHAIRMAN,
NATIONAL ASSOCIATION OF LEGAL AID ORGANIZATIONS,
JOHN S. BEADWAY, SECRETARY.

Mr. Stewart. I want to raise the question—this is not a permanent committee but one simply to form a contact with the legal-aid organizations: Has this association not gone about as far as it can? It seems to me this is purely a local matter. If the States where they have legal-aid organizations want to form these contacts, they have been advised by us how to do it. We have said it over and over again, and I wonder if we need to go any further. One of the States that certainly got its money's worth is Utah, for instance. The legal-aid organization took up a case for it and carried that case through the United States Supreme Court. There is no question about the value of the legal-aid organization to these States; but it is the affair, locally, of each State, and I wondered if the association might not just as well relieve this committee of any further work.

Mr. Horner. I want to say that I heartily agree with Secretary Stewart; and I so pointed out in my report. I do not see that there is any further work that this committee can do; it is your job now. We have brought the situation up to that point where it is up to the members of the various jurisdictions as to whether or not they want to avail themselves of that service.

[On motion made, seconded, and carried the report was received and the committee discharged with the thanks of the association.]

Mr. Stewart. I am going to ask the association to include in the program a paper by Mr. Deans, of Virginia, which is right now in a mix up on this longshoreman's bill, and I think we ought to hear about it.

Mr. Deans. I want to say that I have not prepared any paper on the subject; I read to Mr. Stewart last evening only a consensus of opinion from the majority of my committee.

Mr. Stewart. It certainly states the situation down there in such a way that it seems to me the association ought to have it.

The Chairman. If there is no objection the opinion of Mr. Deans will be received this afternoon.

[Meeting adjourned.]
TUESDAY, SEPTEMBER 11—AFTERNOON SESSION

Chairman, George A. Kingston, Commissioner Workmen’s Compensation Board of Ontario

LONGSHOREMEN’S AND HARBOR WORKERS’ COMPENSATION ACT

The Chairman. From our point of view the longshoremen’s problem during these years has been an academic one—I mean from the point of view of an inland jurisdiction like Ontario—but I have read with a good deal of interest the problems presented in New York and California and other ocean border States. I think we have not had a convention but that somebody has had something to say about this vexed longshoremen’s problem. I thought the Supreme Court not long ago had settled it once and for all, but from what I have heard the secretary say there still seems to be a problem which needs some discussing. So this afternoon’s session is devoted entirely to the subject of longshoremen’s and harbor workers’ problems under compensation laws, and Jerome G. Locke, of the United States Employees’ Compensation Commission, will address us on this subject at the present time.

Longshoremen’s and Harbor Workers’ Compensation for the Port of New York

By JEROME G. LOCKE, Deputy Commissioner United States Employees’ Compensation Commission

I am glad indeed to have the opportunity to meet, for the first time, the association in which I have enjoyed a membership for quite a number of years. Prior to 14 months ago my connection with compensation administration was out in Montana, which is a long way from most of the convention places that have been selected. Even when the association was in Salt Lake City, two or three years ago, there occurred a combination of circumstances that foreclosed my plans for attendance. I am now going to hope that the fates will deal more kindly in the future because I sincerely believe that the annual meetings of this organization are milestones in the path of progress toward equitable, scientific, and satisfactory handling of a specialist’s business, the development of which is as yet only fairly begun.

Many of the members of this association are more or less familiar with the history of the longshoremen’s and harbor workers’ compensation act. The necessity for the legislation arose from the fact that the jurisdictions of the several States do not go beyond their respective shore lines and that there was no provision for handling accident claims in thousands of cases of injury to longshoremen and harbor workers of all kinds when these men were injured on navigable water,
except by voluntary agreed settlement or through recourse to personal injury suits in admiralty courts.

As is always true where there is no form of compensation act, injured men and their dependents in literally thousands of cases obtained little or no benefit following accident, while the admiralty courts became overburdened and congested with thousands of other cases, the final adjudication of which often exacted unduly large penalties from the employers and almost universally put at least 50 per cent of this money into the hands of attorneys and doctors rather than into the hands of the injured workmen and their dependents. Several of the States attempted to remedy the situation by extending their compensation laws to cover injuries on adjacent navigable water, but the United States Supreme Court frowned on this as an unconstitutional extension of State jurisdiction. Finally, after several years of consideration and debate, the Congress enacted the present longshoremen’s and harbor workers’ compensation act, which became effective on July 1, 1927.

The act is compulsory as to employers and all inclusive as to workmen. It provides two forms of coverage, namely, self-insurance and old-line insurance by policy with any approved carrier. The maximum weekly rate is $25, not exceeding two-thirds of the weekly wage or two-thirds of the weekly loss in earning capacity as the case may be, and not exceeding $7,500 payable in any one case. Burial benefit is $200; waiting period 7 days retroactive after 49 days’ disability, and there is provided all necessary medical, surgical, and other attendance at the expense of the carrier. The act also makes provision for safety work and for rehabilitation. The entire cost of administration is borne by the Federal Treasury.

Quite unlike any other compensation law with which I am familiar, the Federal act sets up a dual form of administrative machinery. All matters of general administration such as control of funds, regulation as to proper coverage for employers, provision of forms, coordination of general routine, compilation of statistics, direction of safety work, control of rehabilitation, and other general administrative features are vested solely in the United States Employees’ Compensation Commission at Washington. All decisions on controverted matters in individual cases is vested solely in the deputy commissioner who presides over the district in which the injury occurred. Appeal from his decision is to the Federal District Court without review on the part of the commission. In short, all administrative function is vested in the United States Employees’ Compensation Commission and all judicial function is vested in deputy commissioners.

Inclusive of the District of Columbia, the United States has been divided into 15 districts, each in charge of a deputy commissioner, except in two cases where one deputy commissioner presides over two districts, so that there are 13 deputy commissioners all told. In the District of Columbia the act has been extended to cover all occupations as well as longshore and harbor work. District No. 2, to which I have been assigned, embraces the State of New York (except the Great Lakes) and the port of New York, which includes about one-quarter of the area of New Jersey. Due to the fact that the
great volume of our export and import, as well as passenger, traffic
is through the port of New York, district No. 2 furnishes a much
larger volume of cases than any other district. I am told that ap­
proximately 40 per cent of the injuries on navigable water of the
United States are within the port of New York alone.

When I first came to New York, some 14 months ago, I found that
there was great apprehension on the part of employers, carriers,
and workmen that it would be next to impossible to get the new
act fairly inaugurated and smoothly effective in less than several
years. I heard many stories from all sides as to some of the peculiar
local conditions that obtained, the practices that were in effect among
the people with whom we would have to deal, and many predictions
as to the difficulties to be met. Happily much of this widespread
belief proved to be fallacy. The policy in the New York district
has been based on a few cardinal principles that we believe to be
basic in the successful handling of any compensation law.

The primary purpose of compensation is to compensate cripples
and the dependents of those who have been killed and not to furnish
fees for professional men. We therefore discourage the appearance
of attorneys and other representatives in cases and continually say
to the workmen, “You don’t need a lawyer. It is our business to see
that you get the compensation which the law gives you. You will
get neither more nor less regardless of the number of attorneys you
employ.”

Injured workmen need the compensation while under disability
and not after they have returned to work. Consequently, no case
should ever be permitted to drag longer than is absolutely necessary
to get the facts and apply the law.

A very large percentage of employers, carriers, and workmen are
honest and will cooperate fully and fairly in equitable settlements
by informal means and there is no necessity for extended hearings
or other red tape in about 99 per cent of the cases.

There are, however, among all classes a few individuals who are
disposed to cheat and these must be dealt with promptly, effectively,
and as drastically as the authority vested by the law will permit.
This has been done in the few cases where such action appeared to be
clearly warranted.

Selfishness is a human characteristic common to all of us and it is
the natural thing for an individual to present his case in the way
that he thinks will be most favorable to himself. In disputed matters
the truth of the situation is generally somewhere between the claims
of the contending parties and rarely all on one side of the case.
Doctors, despite their learning, experience, and painstaking en­
deavors, are not infallible. They make mistakes. Settlements can
not always, therefore, be based solely on the findings of examining
surgeons but must sometimes be predicated in part on the other
known elements of the case, and these are not always in confirmation
of the doctor’s report.

In the settlement of compensation cases the psychology of the
situation is often quite as important as the facts and the law. The
great fundamental purpose of the act is to furnish relief to the in­
jured and to do equity to both the workman and the carrier. The
more simple and expeditious the method by which this is brought about, the greater the satisfaction on the part of all parties concerned.

Suspicion is a dangerous thing. To guard against it we have adhered to the policy of discussing actual settlements only when both parties to the case are present or by letter or memorandum, copy of which reaches both parties. Likewise, information on a case obtained from the carrier is promptly furnished to the claimant and vice versa. There is no confidential dealing.

Last, but not least, compensation administrators are human and liable to err. When a mistake has been made it is the duty of the compensation administrator frankly to acknowledge his mistake, back up, and start over.

Based on these basic principles the system for handling cases in district No. 2 is as simple and direct as we know how to devise. The employer is required by law to report the accident. The attending physician must report the nature of the injury and the disability. The carrier must, under the law, begin payment within 14 days after he has knowledge of the injury unless he controverts the claim. In cases where payment is voluntarily begun our office takes no action other than to check the reports until served with notice that compensation has been suspended unless some question is raised by either carrier or claimant.

When compensation is suspended by the carrier a form is sent to the claimant briefly reciting the facts in the case as these appear from our files and the amount and nature of the payment he has had. He is requested if dissatisfied either to report in person or otherwise to advise within 10 days. If he is satisfied or fails to reply, the case is closed and both parties are given notice.

All matters of dispute of every kind go to claims examiners, who are in effect examiners and arbitrators. It is the duty of the examiner who handles the case to effect a settlement that complies with the law by any method that he deems advisable and on terms that are satisfactory to both parties. He may use the telephone, write letters, have personal interviews, make field investigations, order medical examinations by the staff attached to the office, conduct a conference, or hold an informal hearing. The examiner has no power to order action, but may adopt any reasonable method to get proper action by agreement. Every action taken in the handling of a case, be it only a telephone conversation, is recorded on a memorandum which is put in our files, with copies to all interested parties. Approximately 99 per cent of the cases are handled and closed by this method.

Only cases in which there has been failure to obtain proper handling and settlement by agreement are put on the calendar for formal hearing before the deputy commissioner. Such hearings are conducted in a manner quite similar to the trial of a personal injury suit in court, except that the claim and notice of controversion take the place of the bill of complaint and answer as pleadings and there is allowed greater latitude in the introduction of evidence.

Usually the claimant does not have an attorney and his side of the case is developed by examination at the hands of the deputy commissioner. If an attorney appears, his fee is fixed commensurate with the service he has actually performed for his client. If it appears that there was no actual need for him in the case, the fee is so
nominal that he decides this class of practice does not pay and sends the next injured workman and his troubles direct to the compensation offices.

In simple cases involving decision on questions of fact alone or on questions of fact to which the application of law is clear, the deputy commissioner announces his decision at the conclusion of hearing in the form of an order that recites the questions involved and the findings of fact and conclusions of law with reasons therefor; as well as the nature and amount of the award, if any. Unless there is notice of appeal within the statutory period of 30 days, the record other than the deputy commissioner's decision is not transcribed. In involved cases the record is transcribed and the decision written in about the same form as a court decision after the deputy commissioner has reviewed the evidence and consulted such legal authority as he can find. In exceptional cases the deputy commissioner may call for briefs before preparing his decision. As before stated, the appeal is to the Federal district court.

In so far as I am able to judge, this simple system has worked perfectly and with almost universal satisfaction in our district. I have heard almost no complaint, and the spirit of cooperation on the part of employers, carriers, and workmen has generally been very generous.

During the first year's operation there were approximately 1,000 cases per month. At the close of the year, on June 30, all of these had been finally closed except some 1,400, of which number about 600 were on the live roll drawing compensation for permanent disability or death, and 800 drawing compensation for temporary disability or in process of adjustment. There were only three appeals to the courts, one of these a friendly suit for the purpose of getting an interpretation of an obscure point of law. In another the court sustained the deputy commissioner's order in passing on a motion to stay the award, and the appeal will likely be withdrawn, while in the third case there is now substantial agreement as to all issues except some $70, which will probably be compromised and the case settled without trial.

Due primarily to the whole-hearted spirit of cooperation that has obtained on the part of all those who are interested in the act and to the efficiency, fidelity, and zeal with which claims examiners, medical staff, and clerks in the New York office have labored to make the administration of the act in this district all that it should be, I think I can safely report that the new work has been fairly launched. There now appears no reason why it can not be efficiently and satisfactorily handled in the future as it has been for the past year.

DISCUSSION

Mr. Stewart. Mr. Locke, you stated that the law covered all cases. Doesn't that law exempt from its operation boats under 18 tons?

Mr. Locke. Yes. I said that the longshoremen's and harbor workers' act is all-inclusive. That is not literally true; there is exempted, first, seamen; second, Federal employees; and third, the members of the crew engaged in loading or unloading a boat of less than 18 tons net, provided those members have been engaged for that purpose by
the master of the vessel. It does not exclude all vessels under 18 tons, but only those where the loading and unloading have been secured at the behest of the master of the vessel. The purpose of that provision, I am told, is to exempt fishing smacks from the operation of the act.

Mr. Stewart. I understand that in the single State of Virginia that provision excludes from all compensation a very large number of men.

Mr. Wilcox. I understood Mr. Locke to say he has a transcript of the testimony made. Is that required? What is its purpose?

Mr. Locke. It is optional with the commissioner as to whether or not he has a transcript made. In conducting a hearing where I am unable to announce a decision at the conclusion of the hearing, it is generally because I want to review the testimony—at least that is one of the reasons—that the transcript is then made.

Mr. Wilcox. Don't you have a reporter in the department?

Mr. Locke. The testimony is all taken, but it is not transcribed, in most cases, unless there is a notice of appeal; we save that work of transcribing, that is all. A notice of appeal under the law must be given within 30 days, and a reporter's notes will not be so cold within the 30 days that she can not transcribe them.

Mr. Wilcox. I do not see the advantage. With your reporter in the room, I do not see the advantage of spending the time transcribing a record, when you must know right where the point as to which you are in doubt is in the record, and you have the reporter there to get it.

Mr. Locke. I do not quite understand your question.

Mr. Wilcox. You are not going to be in doubt about the whole field of the record—there will be some one point that you are in doubt about?

Mr. Locke. Yes; one or more.

Mr. Wilcox. Then, why have an entire record transcribed in order to clear your mind on those one or two points, when you have a reporter right there to turn to the notes and give you the thing you need.

Mr. Locke. I do not believe that will quite work. In the first place, in making a transcript of a record that is developed after court procedure, you may have something pertaining to that point on the first page, something on the thirteenth page, and something on the one hundred and twelfth page, and in order to know of all the things that pertain to that point in the record you will have to have a complete record. So if it is going to be transcribed at all, it must all be transcribed.

Mr. Wilcox. That means that you read the whole thing?

Mr. Locke. No; the first thing I do is to find out what questions we are hearing. I do not hear the whole field of questions. If the pleadings which have been filed in the case are not sufficiently specific as to the actual questions involved, before we start the hearing at all I get admissions into the record from the contending parties as to what is involved, and that is what we try and nothing else.
The Chairman. Have you found that there is any conflict of jurisdiction between your board and the local workmen’s compensation board of the State?

Mr. Locke. Not a single case in which there has been any contention, and I want to acknowledge with thanks the cooperation that we have had from the New Jersey commission and the New York commission.

As a matter of practice this is about the way it is done: If the case goes over to the New Jersey commission, it is first reported to that commission and if it thinks it is without jurisdiction, it sends us the papers and we assume jurisdiction and settle the case. The same applies to New York.

The Chairman. But it is conceivable that there is a border-line type of case?

Mr. Locke. Yes; that is true, but it is also true that a large number of cases involve only a few dollars. You can not, in justice, in such a case throw the man into a lawsuit to determine who is going to have jurisdiction.

Mr. Stack. Which end of the gangplank—the one resting on the water?

Mr. Locke. I suppose we have had some of those cases. I do not think there has been any decision on the matter. I do not think we have had a formal decision in a single case involving a question of jurisdiction, because always by agreement with the New York and New Jersey commissioners either they would accept it or we would.

Mr. Stack. You can not express your personal opinion?

Mr. Locke. My personal opinion is that if the man was on the gangplank still over the wharf he would be on the land.

Doctor McBride. I am very much interested—of course, I think we all are—to see that each injured person gets what is provided without unnecessary expense to either side. I am particularly interested about the counsel fees. New York has very few controverted cases, as Mr. Locke says. I would like to know what the average counsel fee in controverted cases is.

Mr. Locke. It depends altogether.

Doctor McBride. What will it average?

Mr. Locke. The highest fee I have ever awarded was $250, and that was in only one case—a death case in which the attorney went out and did a lot of real work to develop the facts. The highest we have ever awarded in disability cases was $50; generally $25 for an appearance if the attorney performed any service at all, and if his service was not worth anything to the client, about $5.

Doctor McBride. I want that in the record. We have considerable difficulty.

Mr. Stack. If the one representing the client has found it necessary to consult physicians—to have certain examinations made by physicians, as we frequently have before the State boards—is that claim allowed by you or your representative—the expense that is involved in the medical examinations plus the fee?

Mr. Locke. It all depends on the case. We have followed this practice in our district: If a case comes to a formal hearing and the
appearance that it should not have come to a formal hearing persists, because the carrier should have paid it without protest, we tax the cost to the carrier. If, on the other hand, a claimant insists on bringing a claim when he has nothing to hear and when he is not going to get any more by bringing a formal claim than he otherwise would, we tax it to him. If it is an action that has merit, we apportion the costs between the parties.

Mr. Stack. You mean you include in that cost any expense the claimants have been to in medical examinations?

Mr. Locke. Yes.

Mr. Stack. And get away with it?

Mr. Locke. Yes.

Mr. A. Klaw. Isn't it a fact that the commission has announced a rule with reference to the gangplank question, that if a man was in the act of going aboard he would come under the State law and if he was coming off the boat it would come under the Federal law?

Mr. Locke. I can explain that. I think the attorney who represented the United States Employees' Compensation Commission at Washington for the purpose of putting the act into operation rendered a number of opinions as to what he thought the law was, and he rendered an opinion to that effect. That opinion, under the law, is not necessarily binding on any deputy commissioner. It is the opinion of a common lawyer, of course, so if a case actually comes up involving that point, any deputy commissioner can follow that opinion, but if he sees more and better law to the contrary, he is not bound to follow the opinion.

Mr. Klaw. Was this discussion as to determining the average weekly wage by agreement with the labor union in a particular district?

Mr. Locke. We have been, again largely due to the New York commission, very fortunate in our district in that we have no questions involving the earnings of longshoremen, because a conclusion was arrived at by a gentlemen's agreement before the act became effective. For compensation purposes earnings of longshoremen are fixed by agreement between the employers and carriers on the one hand and representatives of the labor unions on the other, and sanctioned by the New York State commission, at $30 a week or a compensation rate of $20 a week, and that is for all longshore cases.

The truth of the matter is that that is merely a gentlemen's agreement. If the thing went into court the court might overturn it, but the employers, the carriers, and the workmen have all been so considerate in the matter that nobody has taken it into court, and I doubt whether anybody will.

Mr. Klaw. Then a workman in the New York district would receive a maximum of $20 a week.

Mr. Locke. A longshoreman only; not a maximum, but a flat $20; we do not have maximum or minimum.

Mr. Hatch. May I add a word about the rate in the New York district, just a bit of evidence as to how well it works out? Prior to the passage of the Federal act for longshoremen we had under the New York compensation law this gentlemen's agreement between the
longshoremen's union and the employers and carriers as to a rate when our maximum in New York was $20 by law, and when the New York Legislature amended our law and raised the maximum to $25 the question came up whether or not that old rate was adequate. Without action by the New York board, which had no power, as Mr. Locke said—neither of us had any power to prescribe such a uniform rate—the unions, employers, and carriers came to an agreement to make the rate $20 in conformity with the Federal act, under which the benefits are much the same as in New York, and that was done without any trouble at all, just a question of what average would about hit a normal case; and so far as the New York district is concerned, that $20 rate has gone into effect. That gentleman's agreement on rate has been in effect under the New York law for quite a number of years, and it has been taken up by the Federal commissioner and works there just as smoothly. Anyone who is familiar with the difficulties in trying to find out what the average weekly wages of a longshoreman are in the port of New York under conditions of employment there, where he works in one week for a dozen different employers, just going where there is a boat to unload, realizes that, from the point of view of the claimant himself, so long as you get a fair average you have something that is much better for him and is giving him equity infinitely more promptly than anything you could get if you tried to investigate each case.

Mr. Wilcox. Mr. Locke, what is the status of members of a crew doing longshoremen's work?

Mr. Locke. Just offhand I would say that a member of the crew would continue to be a member of the crew even though he is doing longshoremen's work, because a man becomes a member of the crew by virtue of the fact that he signs the ship's articles and is a member until he is released by those articles; that would be my personal opinion.

Mr. Andrews. The Federal act has two or three special provisions authorizing the commission to make studies and recommendations on the subject of accident prevention. Perhaps Mr. Locke can tell us whether the administrators of that work have it under way.

Mr. Locke. I am sorry I can say but little about that; it is an administrative duty vested solely in the commission at Washington. I do know that it has made some preliminary studies of the situation with the idea of working out some safety plans, but as to how far it has gone in that direction or what plans it has in mind I have no knowledge.

The Chairman. Of those at the first convention of this association which I attended, that in Seattle 13 years ago, there are only three of us here to-day—Mr. Wilcox from Wisconsin, my good friend Marshall from Oregon, and myself. Mr. Wilcox and I have attended nearly all of the conventions since then, with the exception of one, but Brother Marshall became a victim of that law of which the secretary spoke this morning, by which commissioners are not permitted to travel out of the State. We are mighty glad, however, to see Mr. Marshall's face with us again, and I understand now, while he is not in the Oregon workmen's compensation work, he is in the work we are now discussing, being a deputy commissioner having
charge of a district. I am sure Mr. Marshall can at this point make some contribution which will be valuable.

Mr. Marshall. I assure you that I have thoroughly enjoyed meeting some of these gentlemen with whom I have associated in past years. I think it would be well to speak briefly on several questions here as to which our conditions may vary.

One of the gentleman asked some questions about the agreed average wage which I think obtains all along the Atlantic coast. In the agreements which have been reached between employers and the labor unions on the Pacific coast, however, where the territory is divided into two districts, the six southwestern States and the Hawaiian Islands being in district 14, with the office in San Francisco, and the five northwestern States and Alaska in district 15, the situation is entirely different with respect to that question. There, with but few exceptions, the longshoremen's union is not affected, and when the act went into effect there were very few places where the records of the individual longshoremen were in existence. There were generally gang records, so called, where men were in the habit of working in gangs, but that was not regarded as being a fair basis for even estimating the earnings.

In the northwestern district, beginning with July 1, many of the ports started keeping such records for the first time. In the two large ports, Seattle and Portland, they have kept such records. In the outlying and smaller ports they have such records now for the entire year. That has materially relieved the deputy from attempting to determine what the rate should be in the individual case. In San Francisco the efforts to secure an agreement between the existing organization and the employers has so far met with failure. There, too, I understand that they do not in any instance have individual records of the longshoremen and it makes a most difficult problem for the deputy in that district.

Another question was asked with respect to accident prevention. I visited the commission yesterday and I understand that that subject is being given considerable consideration. One safety engineer has been appointed and is starting his work in the Chicago district, and another left several days ago to go over to the southern Pacific coast ports and work there. I understand there will be others; that there will be additional men hired for the purpose of developing that work.

The Chairman. The next on the program for the afternoon is Fred W. Armstrong of the Workmen’s Compensation Board of Nova Scotia, who will address us on “Longshoremen and Workmen’s Compensation in Halifax.”

Mr. Armstrong. There was some misunderstanding in regard to the paper I was supposed to have read. It turned out, when I got word that I was asked to prepare such a paper, that there was really no problem for us in connection with longshoremen’s work in Nova Scotia.

At the meeting in Halifax in 1924 there was a very good paper read by the chairman of our commission, Mr. Paton, telling exactly why we did not have the problem of the longshoreman or interstate commerce in our Canadian jurisdictions; that there was no conflict between the Federal Government at Ottawa and the different Provin-
cial governments, due to the fact that the Privy Council, which is the highest court of appeals for the British possessions, looked upon the question when it was put up to it in a somewhat different light from the way that your Supreme Court interpreted your Constitution. In a good many cases the division of the powers of your State and Federal Governments, as compared with the Provincial and Federal Governments in Canada, is somewhat similar, and it is only in a decision of this kind that the Supreme Court and the Privy Council have taken an entirely different view. What it amounted to was this: You have a conflict with regard to longshoremen in the United States, while in Canada and the Provinces the longshoremen automatically fell under the jurisdiction of the different Provinces. It was not in connection with compensation that this subject came up, but in connection with other matters that were decided long before the compensation act. So, when the compensation acts were passed by the various Provinces there was no question but what longshoremen were to be treated by the different boards exactly the same as lumbering or coal mining or any other work that came under the act. For that reason we have no problem at all, and that was the reason why I wrote to Mr. Stewart that I did not think it was necessary to prepare a paper in regard to this, but that I would explain the matter from the floor.

If a longshoreman gets hurt, he is treated exactly the same as any other workman in the Province. It is not necessary to go into the question why the Supreme Court and the Privy Council decide these matters differently; that is touched on in the article in the 1924 proceedings.

There is just one matter that came up in the discussion here that I want to mention, and that is the question of average wage. We in Nova Scotia, knowing how hard it is to get at the longshoreman’s wages, or his average wages, on account of his being shifted with one gang one day and another gang the next day, having different employers, entered into an arrangement, a gentlemen’s agreement, with them that we would give them the maximum amount. That was based on $100 a month earnings, which gives them the maximum of $12.69 a week, which is not as large as that in some of your States here. One of the points I want to ask Mr. Locke is this: You have jurisdiction over New Jersey and New York——

Mr. Locke. Part of New Jersey.

Mr. Armstrong. Well, what is known as the Port of New York. Is there any difference in the rate of compensation in New Jersey and New York?

Mr. Locke. Yes.

Mr. Armstrong. The point I want to make then is this: If you do not decide these points as to which jurisdiction they come under, these men will very likely go where they get the most compensation.

Mr. Locke. I do not want to attempt to answer that alone; I would rather call on the chairman of the New Jersey commission. I want to say this: There is no difference in the disability rate between the Federal and the New York commission. I believe there
is a difference of $2.50 between the New Jersey and the Federal—your maximum is $17?

Doctor McBride. $17 now, $20 the first of January.

Mr. Locke. Then the trouble will automatically disappear at that time. As a matter of fact, no one has raised the question of the $3 differential in rate.

The Chairman. Is any commissioner here sufficiently versed with the subject to be able to discuss intelligently the employers’ point of view? I think the commissioner should see both points of view when he comes to deal with these cases. Does anyone wish to have the floor on this subject?

Mr. Heaberlin. As commissioner of our West Virginia compensation law I would like to get a little information from these gentlemen with reference to their attitude or ruling on that point of the employer. It seems to me quite a problem for us, although we haven’t very much inland work of that kind, and are not at all familiar with the various problems that come up. What I would like to ask is what attitude the Government or District Commissioners take with reference to enforcing the act against the employer, the fines or penalties for failing to comply with the Federal act, when he can get that compensation coverage from the State in which he resides or has his main point of business.

You might get my point better when I say that our statute provides that the West Virginia compensation fund is not a compulsory fund, but any employer employing labor of any nature in the State of West Virginia has a right to subscribe to the fund. We have heretofore carried a great number of those who are operating boats on the Ohio River, and that class of work. We deal with them exactly as we do with our other subscribers, and they comply fully with the laws of the State, and can not be sued for counterdamage either; but I would like to know, if we approve the application of a subscriber, a company which is chartered in West Virginia and plies the Ohio River, to cover its liability and its risk so far as the satisfaction of the statute is concerned, will the Federal Government in turn impose the fine for failing to subscribe also to the Federal fund?

Mr. Locke. To answer that I want to explain that what I am doing is not a part of my business, but a part of the business of the commission’s in Washington; it is charged with all matters pertaining to coverage of employers. There are two kinds of coverage under the Federal act—self-insurance and old-line insurance. Old-line insurance is only by those insurance carriers that have been approved by the commission in Washington, so your State fund in West Virginia may, if it desires, make application to the commission in Washington to become a carrier under the Federal act. The New York State fund and the Michigan fund and one or two of the other State funds are under it. If the commission in Washington approves the application it may become a carrier. Having done that, it is in the same position as any other carrier. In order to protect the longshoreman or the man who is going to be on navigable water it is only necessary to put an indorsement on the policy reciting that the longshoreman is protected as well as other classes of labor.
In the event, of course, that your State fund was covering the liability on land, and it had not been approved as a carrier or it had not indorsed a policy covering longshoremen on navigable water, and one of these men was injured on navigable water, the employer without coverage would be subject to the penalty of the law for being without coverage, which is a fine of $1,000 or two years in the penitentiary. It does not deny the right to anybody, but it does provide that no carrier may carry a risk until that carrier has been approved by the commission in Washington.

Mr. Duxbury. Then your expression as to the old-line companies is not exactly accurate.

Mr. Locke. I do not mean that literally; I mean any insurance.

Mr. Duxbury. What you mean is, any duly authorized company?

Mr. Locke. Yes.

Mr. Duxbury. It may be a mutual, a State fund, or any other, if it is duly authorized.

Mr. Klaw. I think it should be stated, in order to clarify the situation in regard to Mr. Locke's remarks as to the possibility of the West Virginia State fund being approved by the United States Employees' Compensation Commission, that only those State funds where the act itself specifically authorizes the fund to carry liability of that sort could carry it.

In other words, as I understand the West Virginia fund it is created for the purpose of carrying liability under the West Virginia compensation law, and in the absence of a specific authorization, such as in the New York act, West Virginia could not apply to the United States Employees' Compensation Commission in order to overcome the difficulty which Mr. Heaberlin raised.

The Chairman. Is there no provision in the State laws whereby any industry can come under the State fund by application?

Mr. Klaw. Only those industries which come under the compensation law; in other words, the fund is created for the purpose of carrying into effect the particular compensation law of that State only, and the State fund, as I understand it, is not authorized to incur potential liabilities in other lines. In other words, it is created for one specific purpose, the compensation law of that particular State, and it can not go out and write insurance covering liabilities under other laws.

The Chairman. I take it there is no question about that, nevertheless could it not accept applications from groups of employers? Because after all a State fund is simply a fund contributed to by employers in the State, covering a particular liability. If those employers are in the State you are not covering any potential liability outside of the State, but you are covering a liability for an accident that occurs within the State to men employed by people within the State.

Mr. Klaw. The difficulty there, as I see it, would be that you would be covering a liability which would not be covered by the compensation law for which the State fund was created, although the employer might be in the State and the accident might happen in the State. If the accident was not covered by the compensation law
for which the fund was created, any risk of that nature would be outside the purview of the fund.

The Chairman. Unless the law is elastic enough to cover further application.

Mr. Duxbury. I think that is a vital question. We had it demonstrated in New York. The New York fund, according to statements made here, can be accepted and approved as a carrier of this class of insurance. Now it is possible that the West Virginia fund can not be. We would waste a lot of time in discussing it without investigating the facts. When the West Virginia fund makes application for that the commission will inquire into the limits of its power and if the powers are limited the commission will know it.

Mr. Marshall. There is one angle that occurs to me: The Federal act says substantially that the third form of coverage can be by State funds in the States where the laws of those States authorize it. There are several gentlemen here interested in this subject because they are contemplating that very thing. In other words, Washington and Oregon can not write that insurance at the present time because their laws have not been so amended.

Mr. Horn. That is true in Pennsylvania.

Mr. Duxbury. They can not do business outside of the purpose provided.

Mr. Haebelin. The West Virginia act does not exclude anything so far as West Virginia is concerned; it also provides that where one of our subscribers has a man injured in New York, if he is out of West Virginia on the business of that concern, we protect our subscriber against liability from that accident.

Mr. Stack. That is only the West Virginia act.

Mr. Haebelin. I appreciate that.

The Chairman. My own observation was from the point of view of the law which is restricted only to the limited extent of not permitting farmers and domestic servants to come under the law; they are excluded, but any other industry, no matter what it is, can apply to the board in Ontario and get the protection of the law. Our law is elastic enough to do that.

Mention has been made, of course, to State funds. There is a kind of feeling that a State fund means a fund contributed to by the State, which is entirely erroneous. It is not a State fund; it is a fund that is contributed to purely and solely by the employers, and if the employers wish to make contributions and form a group which will be another insurance group, the same as those that are specifically under the law, there is every opportunity under our law to do that. I presume some of the State funds are restricted so that they can not do that.

Mr. Stack. You are thinking in terms of the Canadian Provinces. You cover longshoremen and you cover your other domestic employments under your one act, but here we have a different liability, one under a Federal act and one under a State act. Those concerns that are organized under the State law to cover the State liability, liability under a local compensation act, may not cover liability under the Federal act, unless, as Mr. Marshall says, authority is given by
the legislature of that State to write this outside compensation. You have to think of two different laws.

Mr. Marshall. One word may tend to clarify the question further. Irrespective of definite authority, if the schedule of compensation in the State is different from the Federal compensation, there again they might not have authority to pay the different compensation.

Mr. Andrews. This question first came up and was discussed while the bill was pending. At one stage a letter was sent to each one of the managers of the State funds throughout the country, drawing attention to the phraseology in the Federal bill, which very simply provides that the employer may insure his risk under the Federal act in any of the companies or funds authorized to do this business; and the Federal commission is authorized also to make a list of the carriers which will be acceptable. Now it happened, of course, that in some of the State fund laws, as in New York State, it was provided specifically that the State fund was authorized to insure under the terms of this New York act. That was liberally interpreted by the attorney general during the interim before the next legislature met, when, in order to take care of any possibility of doubt, the legislature added the words, “or under the Federal compensation act.” In California it was deemed necessary to do that; in Michigan it was not, because the wording of the Michigan State fund act was broad enough to include that; in Ohio they have to go to the legislature, and in several other States they will have to, but the insurance must be under the benefit provisions of the Federal act, and not under those of any State.

The Chairman. I wonder if we could not devote a few minutes to a little round-table discussion on some of the problems that may present themselves to us? I will suggest one, and no doubt many of you have others.

I am going to take the liberty of asking Mr. Duxbury to say what he does in his State on the subject of lightning accidents. I know what he does, because we had a little discussion on this during the luncheon hour to-day, but it is one of the problems which, no doubt, all of the jurisdictions have to contend with, as to whether a man injured or killed by lightning while he is working is injured or killed in the course of his employment, and whether or not such an accident arises out of the employment. Mr. Duxbury, will you take five minutes on the subject?

Mr. Duxbury. The subject is one that we discussed at luncheon to-day, and I do not know that it is a matter of very great perplexity except the contribution which Mr. Hatch brought to that discussion. I think it is settled, so far as the general principle is concerned, that accidents or death caused by lightning are compensable if it can be established as a matter of fact that the circumstances surrounding the employment made the employee more susceptible to the evil influence of lightning than the community in general. That may be a rather rough statement of it; it applies to some other conditions rather than just particularly to lightning. The perplexity always is in determining that fact, and my experience in compensation administration for several years is that about 99 per cent of the perplexities we have are in determining the fact.
law is easy enough to apply, but it is the fact which is involved in a lot of perplexities. To say whether or not, under a particular set of circumstances, the individual employee is more likely to have suffered from the effects of lightning than the community generally, or what he would have done had it not been for the circumstances of the employment, is something that really needs a Solomon to determine, and Solomon, I think, would have had more sense than to try it.

But we have lots of things to determine that are just as perplexing as that, and it is largely a matter of inference from all the facts that surround a particular case whether the fact is one way or the other. One person with reasonable judgment may draw one inference reasonably, and that inference will be sustained by the Supreme Court every time, while some other person of equal capacity will draw another inference and that will also be sustained every time. I think each individual case is a matter of perplexity.

When I worked on the farm (I was raised there) I remember being in the field with a pitchfork in my hand when a sudden lightning storm came up and crackled around a little while. I thought that that pitchfork imperiled me, and stuck it into the ground and left it there. I do not know whether it did or not, but that is what I thought, and possibly if we had a case like that, where the man had an instrument of that kind in his hand and was affected by lightning, I would be influenced to draw the inference that his employment subjected him to more peril on account of the circumstances of his labor. Scientifically it might be absurd. I suppose the question is one for men who can qualify as experts on the question of how lightning might be attracted or if a certain person might be more imperiled than people generally. I do not think you can get a hard-and-fast rule in relation to it; you will have to consult your own conscience, as I or some other person with experience of that kind would, and draw an inference. I am inclined to think that because of the humanity which actuates you your inference will be as favorable to the injured employee as it is possible to warrant.

There is a specific course, where there is nothing you can find surrounding the case that will balance your conscience by saying that that was nothing but a pure act of God, but when you get those cases I do not know anything for you to do but pray.

I suppose most of these lightning cases arise this way: The first thing the average fellow does when a lightning storm comes is to run to shelter either to the nearest tree or the nearest barn or a shed or something, perhaps more to escape the rain than the lightning, the tendency to run to shelter seems to be natural to all of us, and most lightning cases that we have had are due to that circumstance; they ran for shelter and they were killed or injured while seeking shelter. The problem we have had to deal with is the question whether or not death or injury under such circumstances is in the course of employment.

One word further: If you ran up against a telegraph pole, and the pole was struck, I would be inclined to think that the environment there had something to do with making it more perilous than anywhere else.

The Chairman. There is no shelter under a telegraph pole.
Mr. Duxbury. I would say the same thing with a tree. I remember a case when I was a boy, of a man going out in the pasture to drive in his cattle; he was struck by lightning in the open field. If he had stayed in his house he would probably have been all right. The law seems to be well established, but the difficulty with me is in determining the fact—whether you can determine as a matter of fact that the circumstances and environments of his employment created greater hazard than would otherwise have existed.

Mr. Wenzel. I believe that the conclusions reached by Mr. Duxbury are entirely correct with respect to a certain kind of law; that is, a law which provides for injuries arising out of and in the course of employment. However, where you have the broader provision of merely “in the course of employment,” I doubt whether that perplexity will exist or arise. I know that although I am the representative of the employers in our bureau I would hold in any case in which the person met with such an accident in the course of his employment, in the course of his work, that it was in the course of employment. I recognize, however, that where the distinction is made in the law that the injury must arise “out of or in the course of employment,” then you have the difficulty suggested by Mr. Duxbury.

Mr. Wilcox. I think the mind of an administrator, in thinking of this subject, must immediately turn to a group of cases. You more or less unconsciously bring together not only lightning cases, but the windstorm, the cyclone, the tornado—which we speak of as an act of God—and the heat stroke and frostbite cases. You dispose of them all pretty much along the same line, because, after all, it is a cardinal principle of compensation that the industry must cause the injury. You can not hold industry liable for benefits to injured workmen if, after all, that industry did not have something material to do with the fact that the man is disabled; and so when you come to deal with lightning cases you have to find out whether or not anything about this man’s employment or his place of employment added to the hazard of the lightning stroke. Likewise with heat stroke and tornado and freezing cases, they are all problems for the administrator, but in each of those cases we have to find out whether the employment—the thing he was doing or the place where he was doing it—added to his hazard. If it did, then there is liability; if not, then there is not.

Mr. Duxbury and I have argued on more than one occasion as to whether or not there was any great perplexity in this type of case and in other types of cases. I really do not think there is, because I think it is quite easy for minds to become clear—reasonably clear—as to whether or not the place of employment added to this particular hazard.

We had a case in Wisconsin where a man was working on a dam in the Fox River and a storm came up and he was picked off; at the time he was holding a flashboard that they were applying to the dam; it was wet and he touched it with his other hand while it was being fastened, and the lightning followed through his body into the stream. We took a volume of testimony which at that time—and I am still impressed with it—I believed to be interesting. We called men who were professors at the University of Wisconsin and who had studied
this matter of electric currents and contacts, and the things that attract the bolt, and they told us that scientists recognized two different types of lightning designated as type A and type B, and that one of these types struck indiscriminately. We usually think that lightning strikes indiscriminately in any event, but these professors said that physically they did work according to some formula; that in one of these types the bolt would strike at random, and in the other type the current would come out of the clouds and into the atmosphere and hit points that attract, like high trees. We undertake to meet that principle when we put lightning rods on our houses and barns. We do that for the purpose of reaching this one type of electrical current, the type which hits, rather uniformly, the things that attract current and is carried off into the ground. One of these professors in his testimony said that in those cases of the type which hits all high points like trees and poles, if a man was exposed under such a tree or pole then it would be a hazard of which the place where he was at that time formed an important element. On the other hand, if it was a type which hit indiscriminately there was nothing about it that was of importance.

Mr. Marshall. Does that give you any aid in determining which it was?

Mr. Wilcox. This man was out on a dam on the level with the water of Fox River, a wide expanse, and we concluded from the testimony and from all the records in that case that there was nothing there which might really be said to have been an attraction to the current; that it struck indiscriminately.

I do not quite see the point that Mr. Wenzel makes. I think that this language "out of the course of employment," or "in the course of employment," or "in employment," and so forth, must after all finally be loaded with this proposition that either the operation of the industry itself, or the place where the man was at the time, exposed him unusually or was the hazard upon which his liability was based.

I do not think that means that types of injury which like heart disease might strike a fellow without any effort being expended at the time, although he is at work, are compensatory. The fact that he is at work at the particular time when the disease strikes him is not the crucial thing; the question is whether or not the work caused the heart failure.

Mr. Duxbury. For fear that Mr. Wilcox or I might be misunderstood, because sometimes we are—I know that sometimes I am—he suggested to my mind that I have perplexities where he does not think I ought to have perplexities. I believe that is true. If I had Mr. Wilcox's discriminating mind, I would have fewer perplexities than I have; but I do have them. My experiences have been with perplexities in determining what are the facts, and my perplexity in this class of cases is to determine what the fact is with reference to whether or not the injury is connected in any way with the industry or the work which the man was doing, and that is a mighty hard thing for me to determine with my limitations.

Mr. Horner. I am inclined to agree with Mr. Wenzel's viewpoint that it depends largely on the provisions of the law. In Pennsyl-
The act reads that it shall cover all accidents occurring during the course of employment; we compensate cases of lightning, heat stroke, ivy poisoning, and frostbite, provided it can be proven that those things happened during the course of employment. Therefore it seems to me that it is largely a matter of what your law provides.

The CHAIRMAN. That other expression would hamper a good many jurisdictions. It is easy to determine that an accident happens in the course of employment, but a more difficult problem to determine that it arose out of it; that is what this presents.

Mr. HORNER. Our act reads, “shall cover all accidents occurring during the course of employment.”

Mr. Wilcox. Would you cover heart failure?

Mr. HORNER. No, sir.

Mr. Wilcox. Why, if a man is at work?

Mr. HORNER. There was a case in Pennsylvania where a man was compensated for heart failure. The man was unloading flour; he was hired by the man who had the contract to unload that car, but the principal employer failed to post notice that he would not be responsible for accidents occurring on his premises. The case was carried before a referee; medical testimony was offered that the lifting of bag after bag, even though this man was probably afflicted in that way, finally caused his death and compensation was awarded, and the board sustained it.

Mr. Wilcox. You are introducing a new element—you are introducing the carrying of the bags as to why his heart gave way. I am asking whether any State compensates for heart failure without undue evil causing the giving way of the heart.

Mr. HORNER. We have not treated heart failure in that way, so far as Pennsylvania is concerned.

Mr. Wilcox. I think Pennsylvania does exactly as the rest of us do; it waits to see whether there is some hazard in the industry that causes the injury.

The CHAIRMAN. Take the man who falls from a scaffold in an epileptic fit and is killed.

Mr. Wilcox. We compensate him; he was not injured because he had an epileptic seizure, he was injured because he fell from the scaffold.

The CHAIRMAN. Suppose he was on the floor?

Mr. Wilcox. Then there was nothing about the employment that created the hazard from which he suffered.

Mr. STACK. I would like to ask Mr. Wilcox if in his illustration he does not forget that the accident has to happen in the course of the employment and out of the employment—not the injury but the accident.

Mr. Wilcox. When you speak of a man falling from a scaffold, he fell from the scaffold because of the seizure.

Mr. STACK. But the seizure was the cause, not the falling.

Mr. Wilcox. But his injury was not because of the seizure, because if he had been seized anywhere except upon a scaffold he would be a whole man, or just as good, after the seizure was over, but he falls
from a height and is injured; the putting of an epileptic in that place was wrong to begin with.

Mr. Stack. Don't you overlook the fact that the accident did not arise out of his employment but was due to his misfortune in having epileptic fits?

Mr. Wilcox. When we are talking on compensation we are talking on compensating for the disability which a man has. I recognize the fact that some States are holding away, or did in an earlier day hold away, from the idea that a man who had an epileptic seizure and fell from a height or fell into machinery—moving parts—was a noncompensable case, but I think all the States are back to the viewpoint now that when you put an epileptic at work on a scaffold or around dangerous machinery you subject him in his condition to a hazard for which the industry must respond when he has an epileptic seizure and that there is liability; and that is independent of whether or not he knows it. We do not have to know what the previous disability of men may be in order to decide whether they get compensation.

The Chairman. You would not compensate him if he were standing on the floor and simply toppled over, although he hit himself pretty hard on the floor?

Mr. Wilcox. He would have struck hard on any floor probably.

The Chairman. Would you draw a distinction between striking a cement floor and a wooden floor—that one is compensable and one is not?

What do you do, Mr. Marshall, with blister cases? A man while working gets a blister on his hand, and at some time or other it breaks and becomes infected and very serious disability results?

Mr. Marshall. I do not recall having such cases so far under the Federal act.

Mr. Wilcox. It happened under your Oregon act.

The Chairman. Have any of the delegates had that problem?

Mr. Wilcox. I can not conceive of compensation administrators not having cases of blistered hands, and blisters breaking and becoming infected, and things of that kind. I do not see the reason why they are not compensable.

The Chairman. Wherein is the accident?

Mr. Wilcox. I do not think you have to have an occupational disease amendment in order to get compensation for the breaking of a blister.

Mr. Duxbury. It depends upon the construction of what constitutes an accident.

Mr. Horner. In Pennsylvania, if you could fix definitely the time and place when that blister came on the hand it would be a compensable case, but if it came on from the constant using of an instrument it would probably be a case of occupational disease.

The Chairman. Does the action depend upon the getting of the blister, the breaking of the blister, or the getting of the infection into the wound?

Mr. Scanlan. The infection of the wound is the answer.
Mr. Wilcox. There is the question of the man who claims he got the blister the first day of the month and who comes to you the last day of the month and complains of an infection; of course we have many cases in which men do not report their injuries, and they are the worst problem that the compensation administrators have to deal with. The man who claims to have been injured and lets no one know about it until weeks and perhaps months have gone by is the fellow who perplexes me, Senator Duxbury, and not so much these other questions. You have to settle them as you would any other litigated question. It is a question of integrity, credibility, and medical proofs, and everything that goes along with it.

Mr. Wenzel. It occurs to me that the issue in a case of that kind would be whether the man got his blister while he was handling a shovel, or a pick, or his fork.

Mr. Hall. I had a case like that and I will tell you how I solved it to my own satisfaction, if you please, though we have other cases of blisters that we can not solve so readily. This was a case of an ex-service man; he was out with others one evening helping to dig a cellar for a little hall they were going to build, and in doing that work with the pick and shovel he raised a large blister on the palm of his hand. He went to work the next morning with that large blister on his hand. He was second hand in a woolen mill and his duty was to look after the machinery. Some machinery went wrong and it was his duty to fix it, and in the using of a screw driver and a wrench he twisted that blister off and had a subsequent infection. I said that the raising of that blister in the work the night before was not the accident that placed him in a condition of weakness as to that particular part of the epidermis on his hand, which was weaker when he went to work the next morning than it had been the day before, but that when he broke that blister, the same as a pin prick, that was the accident and it was in the course of his labor.

The Chairman. You held that the breaking of the blister was the accident and not the getting of the infection?

Mr. Duxbury. Why make that distinction? You have been doing too much thinking about whether that was the accident; the breaking of the blister or the infection entering the place is the accident.

The Chairman. There is an important case—no doubt the members of the convention will remember it—in which the Privy Council held that the accident was the impinging of the germ on the hand—that was the infection—and in that particular case, where a man was working in a dirty situation, fertilizing or something of that sort, it was easy enough to draw the inference that that germ came from that particular spot in which the man was working. But it might be difficult to draw such an inference in a great many cases.

Mr. Duxbury. In this case Mr. Hall cited, had the blister been broken the night before and the infection come on some time after he got back to his regular employment, it would not have been compensable; though it would have been infected while he was employed.

Mr. Hall. That is something you can not prove, because we carry infection around with us all the time; the germs wait for a chance to work through the epidermis.
Mr. Duxbury. The accident is when the germ enters; it would have been a realm where nobody knows when it did happen—in-capable of human proof; that's all.

The Chairman. Is there anyone else?

Doctor McBride. I was very much interested in the discussion concerning persons hit by lightning. We have not had a case of that kind in New Jersey since the beginning of the work. If I were deciding a case of that kind—our act specifically states “arising in the course of employment”—I would decide that the case was compensable. There is no question in my mind that if the person was in his usual vocation I would say that the case was compensable. I do not know how my conferees feel about it.

The Chairman. I suppose that is another of the problems that has to be solved by answering the question: Was there special exposure?

We had a case where a man was employed by a brewery, receiving empty bottles back from the laundry and turning them into the laundry. A wasp came and stung him while he was engaged in the operation. The question whether the smell of beer on the empty bottles was such an attraction to the wasp that it constituted special exposure in that particular instance was considered.

Doctor McBride. The sting of a wasp is an accident.

The Chairman. But did it arise out of the employment? There is no question that it arose in the course of employment.

Mr. Scanlan. I think we are talking as though we were a court of last resort. I think each commission is governed by the decisions of the supreme court of the State. We have decisions, and that is true of many of these States. Our court has not been quite as liberal as some of the other supreme courts, and therefore its decision is much different.

Mr. Wilcox. I think you are lost, Doctor McBride, on that wasp. I think that compensation administrators, by overliberality in some of these fields, do not help legislators and the public to make our acts as liberal as they ought to be. I am convinced that no employer ought to be made liable for any injury to an employee where the industry or the place of employment has not contributed to it, and that when we undertake, in our desire to construe these words in all their outside meanings and to be liberal, to tack on those other classifications of cases in which the employer has had no responsibility whatever, we just gum up the machine and do the thing that sets the public mind against the whole field of legitimate compensation legislation.

Mr. Scanlan. I might suggest that why we get what we call bad decisions from the courts of last resort is that often—as Mr. Wilcox has said—a person wants to be liberal and give somebody something, and finally the case reaches the court of last resort and it upsets a lot of things. I think a person ought to be careful and stay within the act and not try to liberalize it too much.

Doctor McBride. It is not a desire to be liberal but to be just. I still believe that if the man had not been in that particular place, he would not have died; it was because he was in that particular spot that the lightning struck him; surely it was his employment.
Mr. Wilcox. You can say that same thing if a man was riding along the street and a wasp stung him.

Doctor McBride. I do not think I would. It is dissimilar; he might ward off a wasp, but there is no chance of his warding off a stroke of lightning.

Mr. Wilcox. All the more reason why the employer ought to be relieved from its effects because the employer could not ward it off, either.

Mr. Stewart. I was just thinking, lightning strikes so seldom, it seems to me—

Mr. Duxbury. And never twice in the same place.

Mr. Stewart. You wouldn't be there if it did. It seems to me that this question of the longshoreman act excluding boats of less than 18 tons is of rather more importance than bee stings and lightning strokes. In Virginia there are 18,000 men in one State who are deprived of any possibility of compensation. It would take lightning a long time to kill 18,000 men.

A Member. It occurs to me that the question of lightning and being struck by lightning interests every man here and every board in every commission, while the question of those 18,000 men in Virginia interests only that one particular board, and it can remedy that.

The Chairman. You mean the 18,000 men have no benefit of the local State compensation law?

Mr. Stewart. That is the question. They are excluded from the Federal law.

A Member. May they not remedy that themselves?

Mr. Stewart. I would like to call on Mr. Deans for an explanation.

Mr. Deans. I haven't any speech to make. Last evening Mr. Stewart and myself were in conversation as to the question of the jurisdiction of the different States on small boats under 18 tons—Mr. Locke, from the New York district, has told you that boats under 18 tons are excluded.

Mr. Locke. Not all.

Mr. Deans. You exclude the fishing boats when you take the crews. I might say the small boats—boats of, say, 5 tons—do not have to take out any papers. What are the State jurisdictions going to do in those cases? The longshoremen's act does not cover them, and so that question comes up. If I understand it correctly, New York has taken jurisdiction; the same thing is true of California, and I believe Georgia has. We have a discussion in my own State on the question. We are now in the court of appeals on the question of whether it is Federal jurisdiction or whether we have jurisdiction.

My interpretation of the law was that where it was purely local and of no particular prejudice to the Federal maritime laws the State should take jurisdiction.

New York says that maritime jurisdiction is established by the long use of the Garcia case (257 U. S. 233) and by the nature of the work (261 U. S. 479).

In California you have quite a number of cases of fishermen going up into Alaska who are hurt. Your longshoremen's act does not
take jurisdiction. I understand that California has taken jurisdicti-
on recently. Justice McReynolds said in the Alaska Packers' case
(276 U. S. 467) that the work was local in character, and therefore
it came under the local jurisdiction of California. In 256 Pac. 857,
you will find a California case of a pleasure vessel, where a man met
death by drowning in navigable water.

In the Georgia case the fishermen were in navigable water. I
believe the State of New York has had a case on the question of a
barge in navigable water. Possibly Mr. Hatch might tell us some-
ting of that.

You know that the United States Supreme Court in the Rohde
case (257 U. S. 466) held that compensation was applicable where
the employee injured was not under a maritime contract.

If we do not have some uniform ruling or law upon the proposi-
tion we will have to get some local enactment to strengthen the laws,
because, as Mr. Stewart pointed out this morning, somewhere be-
tween 10,000 and 15,000 fishermen, oystermen, or crabbers in the
small boats have to go into navigable waters, and they get hurt.
Can the State take jurisdiction or do we have to go back to the
Federal law and get an amendment to the longshoremen's act? If
I understand the history of the enactment of the longshoremen's act
it was the people interested in the fishing industry who had men on
vessels under 18 tons excluded.

Mr. Locke. I can only say, for the benefit of the gentleman who
just spoke, that in the New York district we have taken the view
that the exclusion of vessels under 18 tons net does not apply to all
vessels under 18 tons net, because the language of the statute is that
there shall be excluded vessels under 18 tons net where the master gets
the men to load or unload the vessel. If the vessel be under 18 tons
net, and if the crew has not been engaged by the master for loading
or unloading, we hold jurisdiction to be in this district. There are,
of course, vessels of less than 18 tons net where the master does en-
gage the men; these are, primarily, fishing vessels. There are also
occasional cases here of vessels under 18 tons net, in the nature of
barges, where a master may engage the men, but those are not very
numerous. Usually if there is a man working on that vessel who is
loading or unloading he is engaged not by the master but by the
owner or the firm who has a contract to transport the freight, so
that the law does not exempt very many men in this district.

I am not qualified to say what remedy can be applied; it seems to
me the Federal law is clear now as to the exemption that is made,
and if the exemption is too large and many men are cut out of the
compensation benefits it must be a case, then, either of amending the
Federal law in Congress so as to narrow that exemption or of the
several States faced with these problems extending their own com-
penation acts to cover them. I do not know which is the proper
thing to do.

Mr. Duxbury. From the course of this discussion there seems to
be an impression that if an accident occurs on navigable waters it is
then outside of the local law. I think there is no basis for that
whatever. It is not a question of whether or not the accident occurs
on navigable water, but whether or not the employment is maritime
in its nature,
As you all know, we have instances of construction of bridges across the Mississippi River, which is navigable water, and of men working on the construction of those bridges, being employed on scows and other crafts in such construction. Their employment is not maritime in its nature, and does not come under the Federal laws at all, but under the State laws, as is the case with many of these other instances of working on boats for particular purposes that are not maritime in their nature. What that means is subject to many interpretations, but if the employment be maritime in its nature, the decision of the Supreme Court of the United States puts it outside of the jurisdiction of any State to determine what the rights of these men are. It may assume jurisdiction—it may usurp jurisdiction because it has no jurisdiction in fact—and determine the rights of the parties and abide by it, but it has no jurisdiction if the employment is maritime in its nature.

Mr. Stewart. What does that mean?

Mr. Duxbury. The Constitution of the United States took such employment out of the jurisdiction of the States and put it under the jurisdiction of the Federal Government, and the only thing to determine is whether the employment is maritime in its nature. I am convinced that the harbor act includes employment that is maritime in its nature; that ought to be covered by compensation as well as anything else that is covered, but I think that limitation ought to be taken out of the act. I feel that the law is defective in so far as it does not afford complete coverage for men engaged in maritime employment, without the limitation on tonnage or anything of the kind. When that is taken out, you will still have those perplexities with reference to whether the employment is maritime in its nature. If it is, it is a Federal question; if it is not, it is a local question.

Mr. Stack. For instance, in Delaware Bay we have large fishing industries. What, in your opinion, is the position of a man not engaged by the master of a small boat, but by an association of oyster merchants, or fishers, to go out into the bay to get oysters, not crossing the line, but working in Delaware on navigable waters? Such men are employed by people who are in the oyster business for the purpose of making money, and are sent, not by masters of the boats, but by an association, to fish for oysters.

Mr. Duxbury. It is a perplexing question, but my offhand conclusion is that that is not a maritime employment in its nature, and that the employment is one that is within the jurisdiction of the State. This law would not take jurisdiction of it because the law can go only to the limits which the Constitution of the United States has specified. That case falls in the category of nonmaritime employment; it is subject to your local laws and could never be made subject to the United States law.

Mr. Stack. Mr. Deans has the same case.

Mr. Deans. You and I agree on that.

Mr. Stack. Maryland has the same.

Mr. Deans. Our question is undecided; two members of the commission have decided that it is a question for maritime jurisdiction and one of us has taken the contrary view, and we are now in our
supreme court on the question. I was trying to ascertain from you what the other States were doing.

Mr. Duxbury. It is not impossible for one court to decide one way and the United States court another way.

Mr. Stack. The Bell Telephone Co. hired a pile driver to pick up a cable that rested on the bed of a canal, and to hold the cable out of the way of the dredge boat while the work was being done. One day when it was stormy, the drawbridge being out of commission, three men, including the pile driver, started ashore in a small boat, were upset, and the pile driver was drowned. The insurance carrier refused compensation on the ground that the man was engaged in maritime labor. An appeal was taken, but about that time the insurance company decided that the board in Delaware was right and the appeal was withdrawn and it paid compensation.

Mr. Duxbury. There are many cases where men engaged in erecting docks have been drowned by dropping into navigable water. There was no question about it, their employment was not maritime in its nature and because of that they were under the jurisdiction of the State authorities and the State laws, but I anticipate that there will be some apparent conflict of jurisdiction between the Federal commission and the State commissions on this matter. Of course, the Federal law is a pretty liberal law compared with other laws, and men will want to get under the Federal law when they do not belong there because they get more compensation. That is human nature, but with the Federal law as it is, there will be cases where it will be perplexing to determine whether or not the employment is maritime in its nature.

Mr. Stewart. How would it do to refer this question to the committee on resolutions and ask that committee to frame an appropriate resolution on the subject?

Mr. Duxbury. I have been honored with the position of chairman of the resolutions committee. I would much prefer that those who have studied the subject prepare a resolution to be referred to the committee, because the technical preparation of the resolution is a thing I am not prepared for. I have no doubt that that resolution ought to be so framed that it will not indicate that we are trying to express an opinion about something on which we do not know the technical language.

Mr. Deans. Don't you think it would be wise to wait until the two courts have decided the question—the courts of Maryland and of Virginia?

Mr. Duxbury. I do not think that will affect the matter. I think all that will amount to is to determine whether or not that is under Federal jurisdiction, and it might not determine this question.

My view of it is that that limitation ought not to be in there; the limitation that the Constitution prescribes is perplexing enough without putting that one in. The Federal law should be a full coverage where the Federal jurisdiction extends, and in that case the State law covers the rest of it; then you have nothing left out.

The Chairman. Perhaps, Mr. Stewart, the gentleman from Virginia will prepare some resolutions in collaboration with the commit-
tee on resolutions, and before the convention is over something can be done which will solve the problem.

Mr. Duxbury. I think Mr. Locke could be of some assistance on that, as he is familiar with the law.

Mr. Andrews. While we are discussing Federal problems in compensation legislation, I would like to ask whether it is not possible for the various compensation commissions to get information concerning the value to a railway employee injured in interstate commerce of his suit for damages under the present Federal liability act as compared with what he might have had under the existing State law.

This question, you will recall, was up before this body three years ago, and you had a special committee which it was hoped would get such information. At that time it did not seem quite so vital because of the other overshadowing issue, but now it does appear that within the course of a few months it will be very important information to have. It is important also for the reason that in the five noncompensation States the representatives of railway organizations often apparently misunderstand the merits of compensation and, mistakenly perhaps, oppose the adoption of the compensation principle.

If you are commissioners in the States where compensation exists and could gather a small body of information, it would be very helpful in those other States, and at the same time it would be very helpful indeed in the near future, for some proposals are to be laid before Congress with reference to accidents to railway employees injured in interstate commerce. So I would like to ask if the commissioners can not think of ways of getting such information, State by State, and of bringing it together in the course of the next few months, so that it may be enlightening for those two particular purposes.

The Chairman. You have heard the request of Doctor Andrews. I think the request is a reasonable one, and it will be referred to the executive committee to formulate some plan to collect that information.

[Meeting adjourned.]
WEDNESDAY, SEPTEMBER 12—MORNING SESSION

Chairman, F. H. Todd, M. D., of the General Hospital, Paterson, N. J.

MEDICAL SESSION

The Chairman. The first paper, "Traumatic labyrinthitis—the period of and the measurement of disability," will be presented by Dr. Jack Blumberg.

"Traumatic Labyrinthitis"—The Period of and the Measurement of Disability

By Jack Blumberg, M. D., General Hospital, Elizabeth, N. J.

To gauge the disability resulting from inner ear trauma is sometimes extremely difficult. If one considers that functionally the labyrinth is a prolongation of the brain proper, the difficulties are apparent in view of the fact that trauma to the brain itself is so difficult of measurement in terms of disability. The symptoms are to a great extent subjective; but sufficient objective signs exist to enable the examiner to form a definite opinion in practically every case. In one instance an interval must elapse to observe the progression or recession of symptoms before diagnosis can be made and this instance will be noted later.

Briefly, the labyrinth consists of the cochlea and the auditory nerve comprising the hearing portion, and the vestibule and semicircular canals with the vestibular nerve comprising the static portion, or that part governing equilibrium, all lying in the petrous portion of the temporal bone. The auditory nerve goes to the central centers of hearing; symptoms from the hearing portion are almost purely subjective and consist as one would suppose in disturbances of hearing, namely tinnitus and varying degrees of deafness.

On the other hand the central connections of the vestibular nerve are many and observation of effects from the central ramifications permits an estimation of labyrinthine disturbance. Through connections by way of Deiters' nucleus irritation of the labyrinth affects the oculomotor, trochlear, and abducens nuclei, causing eye movements, and this effect goes to both eyes from each labyrinth. A branch to the cerebellum is the basis for the symptom of past pointing and a third branch to the triangular nucleus in the medulla gives rise to the vegetative symptoms of labyrinth irritation—dizziness and nausea.

Given then a patient who has sustained a head injury presenting spontaneously dizziness, nystagmus, disturbance in equilibrium, and past pointing, that case must be considered as having labyrinthitis until proven otherwise—a labyrinthitis taken to mean a disturbance rather than a true inflammation.
The earliest stage will be a simple hyperæmia with slight tinnitus and dizziness evidenced. These cases generally clear up within from one to two weeks with no permanent disability.

A severe case of labyrinthine hyperæmia comes under Brunner's classification of "concussion of the brain with ear symptoms." Here tinnitus is generally absent. If present it is very slight. Dizziness is, as a rule, present although it is slight and it is of the labyrinthian type—that is, the dizziness is systematic and visible objects seem to turn only in one direction. If the turning dizziness is not of this type, it is not caused by the labyrinth. In order that reliance may be placed on this symptom, it must be volunteered by the patient and not suggested by the examiner. Under labyrinthian dizziness come also those forms where the complaint is that something is turning in the head, or while sitting the chair sways, or where the sense of being pushed backward, forward, or sidewise exists. The dizziness described is not constant; it occurs in attacks and may be brought on by alcohol or excitement. Like the dizziness, nystagmus is present, is slight, and occurs in attacks. These patients generally exhibit a slightly positive Rhomberg, or modified Rhomberg. Tilting the head sharply backward will often bring on the symptoms and syringing the ear with 10 cubic centimeters of tap water will elicit a pronounced nystagmus. Note that here the picture is that of an irritated labyrinth. Whereas mild hyperæmia tends to spontaneous resolution in two weeks and shows normal reactions to the caloric and turning tests, this latter type of case shows exaggerated responses on slight provocation. It is especially important to note that more than one examination may be necessary to determine the condition, because, as said, the symptomatology is periodic. Since there is no treatment known for this condition, and since there is an accompanying head injury, and since the dizziness as judged in cases having no legal aspect whatsoever tends to be permanent, these people should be given a minimum rating of 30 per cent permanent total disability.

The next step in labyrinthian injury is concussion of the inner ear. Ricker states that in concussion of the brain the so-called præstatic blood circulation exists; the blood vessels are dilated, there is a slowing of the blood flow, and lymph and lymphocytes are excluded in the perivascular and perilymphatic spaces. According to Brunner, this same pathology exists in concussion of the inner ear, and he has named it vasomotor internal otitis. Concussion of the inner ear gives a picture of a weakened labyrinth in distinction to the picture of an irritated labyrinth last described. As a rule tinnitus is absent but a distinct diminution in hearing exists, generally unilateral; if bilateral the hearing defect is more marked on one side. The hearing defect is of the inner ear type, or middle and inner ear type combined. Spontaneous dizziness, nystagmus, disturbances in equilibrium and past pointing are slight, but reaction of the caloric and rotation tests is never increased, in many cases is weakened, and in most cases is absent.

Although the actual damage is much greater than in the previous classes due to the additional defect in hearing, since treatment is of some avail the rating in this class of inner-ear injury is 35 to 45 per cent permanent total disability.
The last degree of inner ear trauma is generally caused by frac­
ture of the petrous portion of the temporal bone, although death of
the labyrinth as evidenced by deafness and total loss of reaction to
stimuli may exist independently of fracture.

Fractures are of three types—longitudinal, crossing, or rupture
of the tip of the petrous bone. Longitudinal fractures per se do not
affect the labyrinth except as the causative trauma may cause a con­
cussion of the inner ear. Crossing fractures generally destroy the
vestibule, giving total deafness, and even if the vestibule is spared,
may destroy cochlea and semicircular canals by hemorrhage, giving
a totally dead inner ear. Of particular interest in crossing fractures
is the fact that healing is by fibrous union, one case examined after
15 years having the fracture still filled with connective tissue.

Of all fractures in the temporal bone fortunately the longitudinal
are the most frequent, as the prognosis for hearing is best in this
type. Fracture in the roof of the external canal and rupture of the
drum are generally present. As improvement is progressive, it is
best to wait at least six months before the permanent disability is
rated, the end result generally being not over 30 per cent permanent
total. In crossing fractures the normal drum picture is the rule.
Since functional examination shows deafness and nonirritability of
the labyrinth and there is no hope of improvement the permanent
disability can be gauged early and equals the total loss of hearing
in one ear, plus an additional 10 per cent permanent total for the
loss of equilibrium regulation on the affected side.

It could not be hoped in this short paper completely to cover all
phases of inner ear disturbances, but from what has been given it
can be seen that the careful functional examination of the inner ear
plus cognizance of any other effects of head injury are necessary for
the examiner to make an accurate estimate of the period and meas­
urement of disability in traumatic labyrinthitis.

The Chairman. We will defer the discussion on this paper until
after the papers which are to follow. Dr. William Wallace Maver
will read the paper, “The fractured female pelvis—subsequent preg­
nancies and the measurement of disability,” prepared by himself and
Dr. S. A. Cosgrove.

The Fractured Female Pelvis: Subsequent Pregnancies
and the Measurement of Disability

By Samuel Allison Cosgrove, M. D., F. A. C. S., Consulting Obstetrician
Bayonne Hospital, Attending Obstetrician Jersey City and Christ Hospitals,
Jersey City, N. J., and William Wallace Maver, M. D., Röntgenologist to St.
Vincent's and Misericordia Hospitals, New York City, and Christ and Green­
ville Hospitals, Jersey City, N. J.

Fracture of the pelvis is relatively rare compared with the total
incidence of fractures of all types, the estimates of its frequency
varying from 0.54 to 1.22 per cent. There is little doubt that it is
more common than is generally supposed, however, and that the more
general use of Röntgenologic examination has contributed to its more
frequent recognition. In spite of this, detailed case reports in the
literature are few; we have been able to find less than 300 in American
reports, though there are doubtless many more than are indicated
by this, for Quain, whose bibliography was most relied upon for these, reports only those cases associated with rupture of the bladder; besides, many cases occur which are not reported.

Of 91 cases from the more recent literature, 22, or 24.2 per cent, were in females. It must be recognized that the vastly increasing use of the automobile not only is increasing the number of pelvic fractures but will tend to increase the relative number of females suffering such injuries, as heretofore the dependence of such fractures on occupational accident made for a great preponderance of males suffering therefrom. The latter tendency is shown in the following analysis of causes of injury, of which those due to automobile accidents constitute 29.7 per cent, and those due to industrial causes, 24.2 per cent. If automobile accidents were eliminated, industrial accidents would make up 34 per cent of the whole.

<table>
<thead>
<tr>
<th>Cause of Injury</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial:</td>
<td></td>
</tr>
<tr>
<td>Crush by crane</td>
<td>2</td>
</tr>
<tr>
<td>Mine cave-in</td>
<td>4</td>
</tr>
<tr>
<td>Fall from scaffold</td>
<td>4</td>
</tr>
<tr>
<td>Falling timber</td>
<td>3</td>
</tr>
<tr>
<td>Other falling bodies</td>
<td>2</td>
</tr>
<tr>
<td>Steam shovel</td>
<td>1</td>
</tr>
<tr>
<td>Ore or coal cars</td>
<td>6</td>
</tr>
<tr>
<td>Automobile:</td>
<td></td>
</tr>
<tr>
<td>Passengers</td>
<td>13</td>
</tr>
<tr>
<td>Struck or run over by</td>
<td>14</td>
</tr>
<tr>
<td>Other transportation agencies:</td>
<td></td>
</tr>
<tr>
<td>Wagons</td>
<td>4</td>
</tr>
<tr>
<td>Street cars</td>
<td>8</td>
</tr>
<tr>
<td>Trains</td>
<td></td>
</tr>
<tr>
<td>Fall from</td>
<td>3</td>
</tr>
<tr>
<td>Struck by</td>
<td>1</td>
</tr>
<tr>
<td>Bicycles, falls from</td>
<td>3</td>
</tr>
<tr>
<td>Sleigh, thrown from</td>
<td>1</td>
</tr>
<tr>
<td>Horses, thrown from</td>
<td>2</td>
</tr>
<tr>
<td>Miscellaneous:</td>
<td></td>
</tr>
<tr>
<td>Falls on stairs</td>
<td>4</td>
</tr>
<tr>
<td>Falls from height</td>
<td>11</td>
</tr>
<tr>
<td>Tripping on floor or pavement</td>
<td>4</td>
</tr>
<tr>
<td>Attack by animal</td>
<td>1</td>
</tr>
</tbody>
</table>

Moreover, woman’s entry more widely into the fields of commercialism and travel naturally exposes her to the same accidents as man; and while injuries of the pelvic girdle have certain points in common in both sexes, we find in woman added factors that must be understood when treatment is undertaken, and when adequate compensation is attributed to her for injuries sustained.

Some authors state that all fractures of the pelvis depend on severe injury; on the other hand, they have occasioned been known to follow slight trauma, and several cases are recorded of its dependence on muscular violence. They are usually the result of sudden pressure upon the thighs or hips directly, pressure transmitted through the spine or sacrum, anteroposterior crushing injuries, or direct pressure on individual bones, as in falls on hard surfaces.

Fractures of the individual bones of the pelvis are usually the result of milder forms of trauma, and are not so prone to be associated with injuries to the viscera. Trauma of a more severe type usually involves two or more bones, and displaced fragments are frequently noted which tend to produce visceral damage as an immediate complication, followed by disabling deformities of greater or lesser significance.

The variety of these fractures with reference to the parts of the pelvis involved is great, and they are frequently multiple. More than 50 per cent involve the rami of the pubis and of the ischium. Those of the ilium, sacroiliac joints, acetabulum, body of the pubis, sacrum, body of the ischium, and tuberosity of the ischium occur in the order named.
Considering the pelvis from the anatomical standpoint, we recall that it is composed of three pairs of bones, the ilia, the ischia, and the pubic bones forming the anterior and lateral walls, the sacrum and the coccyx the posterior aspect. These bones are securely held together by dense ligaments, and form a compact basin, which has been divided into an upper, or false, pelvis, and a lower, or true, pelvis, by the ileopectineal lines.

The upper, or false, pelvis contains parts of the intestines and colon and serves as an attachment for a number of muscles as well as blood vessels and nerves. The lower, or true, pelvis contains the bladder, the organs of gestation in the female, the sigmoid, and the rectum, besides also serving for the attachment of tendons and muscles. In this part of the pelvis the organs are closely housed together and do not have the mobility of those in the upper pelvis. This partly explains the frequency of visceral damage complicating fractures of the true pelvis and the comparative freedom from damage of the organs contained in the false pelvis.

In those fractures depending on severe trauma the death rate is high, due to concomitant injury rather than to the fracture itself; thus Quain, in the earlier cases of his series, found 86.7 per cent mortality from bladder rupture alone, this accident occurring in 50 per cent of all cases; although in the later cases, due to more prompt surgical treatment, this death rate was reduced to 38 per cent; the average for the whole series was 74 per cent. Sequelae also depend principally on complicating injury of other structures. Uncomplicated fracture results in from 33 to 86 per cent of cases in full recovery, with little or no deformity. However, marked deformity may occur from extensive comminution, from the intrusion of the head of the femur through a shattered acetabulum, from disturbance of bony development following injuries in the young, and from persistence of excessive callus formation. Such deformities are irregular, altering the symmetry of contour of the pelvis, and of course, in the female, constitute a factor of potential obstetric importance. They depend, in part, on timely recognition and suitable treatment of the original injury.

In our experience, the most disabling type of pelvic fracture is that involving the pubic bones through the symphysis, with separation of the fragments. These are usually accompanied by damage to the sacroiliac articulations and are prone to leave the subject with impaired and painful locomotion, and visceral complications, which render her more or less an invalid.

The least disabling appear to be fractures of the ilia and sacrum. The former occasionally affect posture and body contour, but we do not recall a case of permanent disability subsequent to the usual fracture of the sacrum; as a rule they unite solidly in about three months, without deformity.

We find no record of injury of the uterus itself, the Fallopian tubes, or the ovaries, in connection with fractures of the pelvis; the free mobility of these structures is a large factor of protection; it is easily conceivable, however, that their blood supply and the broad ligaments might be injured, especially as lesions of the iliac vessels have been noted in 4.5 per cent of all cases; no specific description of such injury has been found. In the female, as in the male, the
close juxtaposition and attachment of the bladder and urethra to those portions of the pelvic girdle most susceptible to fracture makes damage to these structures the most frequent complication; the vagina, the soft tissues of the pelvic floor, and the rectum, may be involved; scarring dependent on such involvement may rarely be of obstetric importance.

Considering the influence of any of the deformities or disabilities complicating, or consequent upon, fracture of the pelvis in relation to future pregnancy, we must first of all weigh the marriage ability of the subject. Here we enter upon a field of rather intangible social values. From our own observation of the frequency with which pitifully crippled women do marry, while so many physically well-qualified women never achieve, if you please, matrimony, it does not seem to us that the social handicap represented by such deformities is valid ground for the estimation of disability, unless it should be severe enough to be utterly crippling; in the latter case, the disability as regards locomotion and capacity for gainful employment would probably offer an adequate basis for such estimation, without regarding the social disability at all.

Excepting complete, or nearly complete, cicatricial stenosis of the vagina, no condition resulting from the injuries under discussion would act as an insuperable bar to coitus and conception; even high degrees of dyspareunia due to laceration of the vagina and perineum could not be so classed, nor could interference with normal libido caused by injuries of the lower cord or sacral plexus.

So great is the mobility of the pregnant uterus, and its capacity for accommodating itself to a variety of conditions adverse to its growth, that it is not probable that any of the consequences of pelvic fracture would interfere with the development of a normal intrauterine pregnancy. It is possible that, if the adnexa were involved, either in direct injury or in secondary inflammatory processes incident to such fractures, the tendency to extrauterine pregnancy would be increased; however, the impossibility of recognizing such tendency in advance, and the possible concomitance of such lesions of the adnexa with those arising from more common etiologic factors, would tend to eliminate such tendency from calculation.

This leaves for our consideration, therefore, only the question of the influence of previous fracture on the mechanism of labor. If a woman survives a fracture sufficiently severe to displace fragments into the true pelvis, our conclusions must be purely speculative relative to the effect of these displaced fragments as an impediment to the normal descent of the foetus, unless the encroachment is so obvious that its obstructing effect is conceded by all; and we believe it is only fair that the injured party should have the benefit of a doubtful decision.

Fracture of the pubis and of the ilium, with upward displacement of one-half of the pelvis, may not prove to be a serious handicap to normal delivery. The deformed, asymmetrical pelvis, without projecting fragments, may still permit of a normal delivery in most instances, and it is therefore not possible nor wise to state that such a pelvis precludes it. We have all been astonished to witness, at times, a successful spontaneous delivery through a deformed pelvic tract after all preparations had been made for Cesarean section.
We know of no method by which the degree of disability of the fractured pelvis in the child may be computed. Judging by the ultimate results obtained in apparent severe fracture deformities in children, we are inclined to the opinion that the child's fractured pelvis may not offer the serious handicap to delivery in future life that the fractured adult pelvis may. One can readily appreciate that in a field of so much speculation it is difficult to state with any degree of certainty what ultimate result may be expected.

In regard to all these possibilities, the paucity of case reports and the comment of standard obstetric texts alike attest to the rarity of such problems. In Quain's series of 127 cases complicated by rupture of the bladder there is mention of one case of laceration of the vagina, but the description does not permit conclusion as to the extensiveness thereof, nor its obstetric significance. Culbertson describes an extensive multiple fracture of the pelvis occurring during pregnancy, six weeks before delivery; this case was delivered by Cæsarean section at term, but it would seem as though this were resorted to to avoid disturbance of the recent fracture rather than because of interference with labor due to deformity. Senger describes a severe crush, at age 17, necessitating subsequent delivery by Cæsarean section because of resulting deformity.

The texts are disappointingly brief in their comment. We were unable to find any reference to these conditions in those of Berkeley and Bonney, Edward P. Davis, Joseph B. DeLee, or George Peaslee Shears. Several others dismiss the matter with such statements as that “fracture may produce deformity from callus or irregular union”; that this is “rare,” “the rarest cause of pelvic deformity,” “unusual,” “may arise,” “necessarily obstructive if involving true pelvis.” Several authors account for its rarity by pointing out the extremely high immediate mortality of severe injuries of this nature. Oldfield has seen one case. Newell says in part, “In rare instances healed fractures of the pelvis may render delivery through the pelvis impossible. * * * This cause of dystocia is a very uncommon one * * * patients succumb to the internal injuries which accompany the fracture * * * few survive and fewer still become pregnant. The effect on labor depends on the location of the fracture, the degree of callus formation, and the displacement of the ends of the bones.” He points out what is highly important, that the ordinary pelvic measurements give little or no clue to the internal conditions, and that the pelvis must be thoroughly palpated—if necessary, under anesthesia—and at the time of labor, to determine satisfactorily the degree of obstruction. He believes that where any doubt of the competence of the pelvis exists delivery by Cæsarean section should be elected.

We are unable to add personal experience with these types of dystocia.

Cragin alone discusses at some length the not infrequent fracture of the lower sacrum and coccyx from falls in the sitting posture, as in skating, with sliding forward of the lower fragment, the resulting deformity sometimes being capable of seriously impeding labor. This does not necessitate resort, however, to an unnatural channel for delivery in all cases; the displaced fragment may be excised, or
refractured, or moderate forceps traction may suffice to overcome the obstruction.

Similar injury not infrequently occurs as a result of obstetric trauma, either in delivery by forceps or, more rarely, in spontaneous delivery; some obstruction to subsequent delivery might result, as when it is due to nonobstetric causes.

Changes in the dimensions of the pelvic strait also result from obstetric trauma in the forms of separation of the symphysis pubis or subluxations of the synchondroses; the former may be deliberate, as the result of symphyseotomy; the two types of injury may be combined; also separation of bony fragments may occur from the operation of pubiotomy; all of these injuries, with the possible exception of excessive callus formation following the last-mentioned procedure, tend to facilitate rather than retard subsequent delivery.

In examining any of these cases the examiner should have as his primary object a fair and kindly attitude to the injured party and an unbiased and conscientious state of mind to all. He should be conversant with the details of the accident and the history given by both parties relative to the character of the same. The period of disability and the extent of medical attention should also be made known to him. This data should be augmented by a complete and careful X-ray study. It is necessary that the X-ray examinations include a set of films made by the stereoscopic method, as well as in the lateral plane. The X-ray report should include a description of the general contour and degree of symmetry; a notation of the presence of developmental anomalies or deformities; a description of old, previously existing fractures or dislocations with an estimate of their duration; and a detailed description of the recent line or lines of fracture; the position of the fragments, the degree of union, and any visible alteration of the normal symmetry of the major or minor pelvis should be carefully noted. In the event of apparent narrowing of these parts, a subsequent X-ray examination should be made to determine the actual dimensions of the pelvic outlet by the "Thoms" method, which offers a convenient and expeditious method of pelvic measurement, and enables one to obtain accurate dimensions which can not fail to be of value in estimating the probable disability.

After going over the above phases of the injury, a complete physical examination should be made, and, where circumstances permit, a vaginal examination. The individual's posture, gait, the coordination of ordinary movements of locomotion and everyday life should be studied, and notations made of evidence of impaired function. The following should then be considered in respect to the particular individual:

1. Does the fracture interfere with the woman's earning capacity by producing early fatigue, due to malapposition of bony structures or muscles, or impairment of normal muscle coordination?

2. Does the fractured pelvis detract in any way from her physical attractiveness by producing asymmetrical lines of body contour, impairment of her normal gait or posture, or lead to a chain of nervous and mental disorders that unbalance her temperament?

3. Does it render her ineligible for future marriage by producing physical obstacles to coitus and fecundation; and if she becomes
pregnant, what are the chances for a successful delivery of the foetus through the damaged pelvic outlet?

4. Does it affect other organs contained within the pelvis and by so doing render her a potential invalid?

Other points will probably arise, but these are some of the questions which must be carefully considered by the physician before he can attempt to arrive at a conclusion regarding proper compensatory reward for the woman with a fractured pelvis. In some instances it may be difficult to state with any degree of certainty what ultimate result may be expected.

In the treatment of marked degrees of obstruction from any of the causes described, Caesarean section is, as pointed out by Newell, almost always the procedure of choice. This, per se, carries with it but little element of risk. Moreover, since these cases are among the rarest causes of dystocia, and as indications for Caesarean section other than they exist in about 4 per cent of all obstetric cases, and as there is also a by no means small mortality in delivery not associated with obstructive dystocia, the special risk of these patients inherent in the necessity for operative delivery is so small as to be negligible.

A determination of the percentage of disability depends upon an honest and conscientious attempt to correlate in terms of compensation to the individual a sum adequate to repay her for personal damage sustained, which produces a handicap in future life. A proper molding together of all the facts aids us in arriving at a practical conclusion. The earning power over the period of life expectancy; the relationship of impaired body function to the work of the individual as it affects future earning power; the effect of the injury upon the physical attractiveness of the woman calculated to prevent her from obtaining a suitable mate when she becomes of marriageable age; and the possibilities of successful future pregnancy, are all phases of a wide field of conjecture subsequent to fracture of the pelvis.

In consideration of all of which, the following scheme for the measurement of disability may be submitted:

1. In those cases in which the result of pelvic fracture and its concomitant injuries, results, or sequelae warrants an award of permanent total disability from the standpoints of interference with locomotion or with gainful occupation, no additional disability need be calculated with respect to future pregnancy.

2. In those cases in which no disability, or a temporary partial or permanent partial disability is awarded because of results interfering with other functions, there should be an additional disability calculated with reference to pregnancy potentiality in females within, or younger than, the child-bearing age, provided any of the following conditions are present:
   a. Extensive crushing, resulting in obvious asymmetry of the whole pelvis.
   b. Distortion of the carriage, with compensatory obliquity of the pelvis resulting either directly from the fracture, or from concomitant injuries, as of the spine or of the femora.
   c. Distortion of the symmetry of contour of the pelvic inlet, or cavity, or outlet, by excessive callus, displacement and malunion of fragments, or intrusion of other bones, as the head of the femur.
d. Actual or probable interference with the symmetrical development of the pelvis, in the young, by involvement of bony epiphyses by the fracture line.

e. Extensive cicatricial distortion of the soft parts of the pelvic floor calculated to interfere with coitus or delivery.

3. Such pregnancy potentiality should be considered as 50 per cent of the individual's total potentiality.

4. In event that coitus is completely impossible as the result of the injury, the full 50 per cent disability should be allowed.

5. In all other cases, the allowance on the basis of increased risk in delivery should not exceed 10 per cent of the 50 per cent assigned to pregnancy potentiality, or 5 per cent of the individual's total capacity.

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[Doctor Maver showed lantern slides illustrating the foregoing paper. See illustrations I, II, III, and IV.]

The CHAIRMAN. The next paper will be by Dr. Stanley R. Woodruff, on "The traumatized kidney—measuring the percentage of disability."

The Traumatized Kidney: Measuring the Percentage of Disability

BY STANLEY R. WOODRUFF, M. D., professor of genito-urinary surgery, Post Graduate Medical College, New York City

The title of this paper I have been asked to prepare is well taken, for after a complete search of the literature for the past 10 years I find that little or nothing has been done in the matter of checking up the aftereffects of renal injury. It has seemed sufficient to most ob-
I. FRACTURE OF THE RAMI OF THE PUBIC BONE WITH FRAGMENT DISPLACED INTO THE TRUE PELVIS
II. FRACTURE OF HORIZONTAL RAMUS OF RIGHT PUBIC BONE—MODERATELY COMMINUTED
III. SEVERE BILATERAL COMMINUTED FRACTURE OF PELVIC BONES WITH DISPLACEMENT OF FRAGMENTS
servers and urologists to be quite satisfied if a patient with a bleeding kidney from traumatism ceases to show haematuria in a fairly satisfactory length of time and is discharged without inquiring to any extent into the exact amount of damage accrued. The coming of industrial-accident boards and commissions with the universal compensation insurance at present in vogue, the damage suits attendant upon automobile and other accidents, not only will now create an incentive to the study of the aftereffects of injuries to the kidney but will force upon the medical profession the necessity of being able to report the exact percentage of loss of function.

Let us for a moment discuss the cause and effect of renal injury. The kidney is a soft glandular organ fed by an enormous blood supply. Its small size in proportion to the amount of blood entering it is most conducive to a high pressure within and consequently presents little or no opposition to rupture when traumatized.

That the blood supply of the kidney has much to do with its rupture was proven by Küster, who was unable to cause rupture in the kidney of cadavers but found it a simple matter when the same kidney was injected through the blood vessels.

Personally I am convinced that the overincrease in intrarenal tension caused by the external violence, and not the actual blow of the object on the kidney itself, is the cause of a large percentage of these cases. This would likewise tend to explain those types known as “rupture from indirect violence” and “rupture from muscular effort,” and may likewise explain the large number of ruptured diseased kidneys reported.

Three methods are described by writers on the subject as being the cause of rupture of the kidney. The first is by direct violence. This naturally is the cause of the greatest number. When the blow is directed against the anterior portion of the body the kidney is squeezed against the rigid back muscles, ribs, and spinal processes, and rupture in varying degrees, dependent, of course, upon the amount and direction of the force against the body, takes place. When the violence is directed against the back, it is in direct apposition with the kidney and rupture occurs by direct contact—rib or spinal fracture.

Rupture by indirect violence takes place when there is no direct evidence of an actual traumatism to the kidney occurring. Examples of this are reported cases of the patient falling a certain distance and landing upon the feet, or by a slight fall without any apparent trauma, as in Fox’s case, where the patient merely fell from a chair, or those fairly numerous ones where the entire injury has been on one side of the body and it has been the opposite kidney which shows rupture. This was the fact in two of my own cases.

The third type is that by muscular activity, and there are several cases reported where patients have slipped on some movable object, temporarily lost their balance, and finally regained it, to be followed later on by actual kidney rupture and, in one case, death from hemorrhage. It is difficult to conceive the mechanism of this type. The kidney lies entirely upon the muscles of the back close to the spine, the anterior muscular abdominal wall being at considerable distance in front. There is nothing of a muscular nature that can directly seize the kidney and squeeze it sufficiently to cause rupture.
Fox reports a most interesting case of this type; a man, 59, stepped
on a loose street-car rail, lost his balance without falling, and finally
managed to regain it. Shortly after he felt faint and nauseated and
complained of pain in the right lumbar region. He passed a small
amount of bloody urine but soon developed a complete anuria. At
examination the next morning the patient was in coma with a full
and rapid pulse, accelerated respiration, and a slightly distended
abdomen. Catheterization revealed about one ounce of dark-colored
fluid. Before cystoscopy could be done the patient died very sud-
denly. Post-mortem examination showed a healthy but transversely
ruptured right kidney, the organ being practically divided into two
equal parts. The left kidney was found to be aplastic and consisted
only of rudimentary sac; this condition, of course, explained the
anuria. In this type, no doubt, the increased intrarenal pressure is
caused by the sudden stiffening of the abdominal muscles.

Renal injuries with external wounds are comparatively rare in
peace times and are usually due to stab or bullet wounds.

Preexisting disease of the upper urinary tract, such as hydrone-
phrosis, pyonephrosis, and renal and uretal calculus are most potent
factors in allowing rupture to take place by causing a thinning out
and weakening of the parenchymal structure. A number of such
cases are described by Bailey, and this condition should always be
held in mind by compensation boards when adjusting.

The right kidney is more susceptible to injury than the left in the
ratio of 100 to 70. Whether this is due to the lower anatomical
position of the right kidney is problematical. The longer pedicle
and greater motility of the left kidney may assist it in resisting
traumatism by slipping away when struck. It is certainly odd to
observe, as in two of my cases, rather severe left-sided injury with
rupture of the right kidney.

As external violence is the chief etiological factor in rupture of
the kidney, one would expect the enormous preponderance of such
injuries in the male, Bailey reporting 99 males to 9 females, although
the statistics of the coming years will alter this in a marked degree
on account of the universal use of the automobile, which recognizes
neither age nor sex; children particularly will form a fair quota of
these injuries in the future. The frequent looseness of the kidney
in the female will no doubt still continue to exert an influence to cause
a lessened number of renal injuries in this sex.

What are the results of kidney rupture? Little or great, depend-
ing entirely upon the amount. There may be nothing but a slight
linear subcapsular fracture with a small amount of blood in the urine,
a rapid healing, and no particular immediate aftereffects. Again,
the kidney may be mashed into a pulp or torn into pieces, and sepa-
rated entirely from the ureter and blood vessels. In this latter
type there will be no blood in the urine but death will supervene
in a very short time from hemmorrhage. When rupture of the
kidney does not include also rupture of the renal pelvis, there is
usually no extravasation of the urine, as Tuffier has well shown that
the exposed surfaces of the parenchyma do not secrete urine when
rupture occurs.

The peritoneum is sometimes torn and the products of the kidney
rupture may enter the abdominal cavity.
Hemorrhage is naturally the chief and first complication. Infection and urinary extravasation may follow. The hemorrhage is quite usually comparative to the number and size of the blood vessels torn. Extravasation of urine does not take place unless the renal pelvis is torn and is not of as grave an import as when the lower portions of the urinary tract are severed—there being much less tension of the urine coming from the kidney and the perirenal space being much larger and more cavernous.

Infection takes place more readily in the presence of preexisting renal disease, but may occur through the blood stream even without the presence of urinary extravasation and be the cause of subsequent kidney pathology.

An interesting case of a traumatic nature for complete destruction of the kidney is narrated by Pisani, in which he cites the case of a man struck by a truck, five months previously, on the right side and flank, causing a fracture of the right scapular with hæmothorax. He recovered in about a month. At this time a sharp pain in the right renal region, accompanied by fever, began to bother him. A month later a similar attack occurred, with high temperature, headache, and frequency of urination. In another month he complained of a feeling of weight in the right flank, loss of appetite, frequency of urination, pains in the lumbar region, and hæaturia. An exploratory operation was done upon the right kidney, and this organ was found to be totally infarcted, due to evident traumatic thrombosis of the artery.

**Symptoms**

The symptoms of rupture of the kidney are sudden hæmaturia, pain, and sometimes tumor in the affected side, this all naturally depending upon the severity of the violence and the amount of rupture. The hæmaturia usually occurs at once and is often persistent, lasting in some cases for as long a time as two months. The amount of blood in the urine is a fair criterion of the amount of rupture but not at all conclusive, as in the most severe types where the kidney is wholly or nearly torn from the pedicle, there may be little or no blood in the urine. The pain is usually proportionate to the amount of violence and the quantity of blood or urine extravasated. The size of the tumor palpated may well depend also on these last two factors. Varying degrees of shock and collapse may be noted. Peritonitis, if present, is indicated by its usual symptoms. Diagnosis of rupture of the kidney is usually first shown by the hæaturia, bearing in mind, however, that the more serious injuries may show little or no blood in the urine excepting at the very onset. The pain is practically always associated with the damaged kidney and may be of varying intensity. Tumor is not always felt because it is not always present, and even then may be impossible to palpate on account of muscular rigidity, abdominal distension, or exquisite tenderness of the affected side. Cystoscopic examination is not always indicated and is not here included as a diagnostic measure.

In two cases I noted very little distension or rigidity but rather a sense of loss of muscular tone, as if palpating a fluctuating cavity.
A prominent symptom of rupture of the kidney is frequency of urination, in part due to the haematuria and probably reflex in some cases.

Treatment

This requires considerable acumen and experience on the part of the attendant. By far the vast majority of accidents of this type require simple rest in bed, with anodynes both externally and internally to relieve the pain, and a process of watchful waiting. However, in the severe cases, this process must be intensified, and where shock and other evidences of severe bleeding are present immediate incision and inspection of the kidney will save many lives. One must here use due caution in being sure that the shock is not due to the injury of some other portion of the body. Incision and drainage of the products of the rupture and even nephrectomy may later be necessary. If operation is decided upon, a cystoscopic examination should always be done in order to prove the presence of another functioning kidney. If operation is not decided upon, it is better to omit cystoscopy on account of the possible subsequent reaction or infection, so that the treatment resolves itself within a few hours into the question of operation or no, and upon the decision may rest the life of the patient. If the question appears to be at all doubtful, it is much safer to make an exploratory incision.

The question naturally interesting this audience is not the one where operation and nephrectomy takes place, but that in which the injury has not been so severe but that the patient has recovered, and the question of the percentage disability following such accidents must be considered. Only four cases are to be found in the literature to date where the functional end results have been studied.

Shupe reports a young man who fell 30 feet, hitting his back in the descent and landing on his feet on a hard pavement. He complained at once of renal colic and showed a slight tenderness in palpation of the left kidney. There was very little shock but considerable blood in the urine. His treatment consisted of rest in bed. In two days there was no macroscopical blood and in one week it had disappeared when examined by the microscope. Two weeks afterwards cystoscopy was done and both kidneys found to be functioning normally.

Wesson reports three cases, one an eight-year old boy, run over by an automobile. There was right iliac fracture and crushing of the second and fourth lumbar vertebrae. Haematuria for a few days and, after two months had elapsed, a swelling in the right side developed. This was incised and a large amount of clear fluid containing urea was evacuated. Cystoscopy and functional tests at this time showed both kidneys to be normal.

A man, 41, developed a large swelling on the left side one month after being struck by a car rail at that point. The swelling was opened, and about a gallon of urine drained. At this time cystoscopy showed no urine from the left kidney. One month later, after healing of the sinus, the functional output revealed a 50 per cent lessening from the left kidney as compared with the right but neither casts nor evidence of infection.
A man, 45, fell 25 feet and struck on the right side, breaking several ribs. Hematuria lasted for 31 days. At the end of this time cystoscopy and functional tests showed a 50 per cent reduction from the right kidney. Reexamination after one year by cystoscope and pyelogram revealed the upper calix replaced by scar tissue, the surviving renal portion being entirely normal and functioning the same 50 per cent.

My own personal experience has to do with 16 cases, in two of which nephrectomy was performed.

1. This case was of a vocational school boy of 18, who was struck in the right side of the back by a block of wood insecurely fastened and flying from a lathe. He developed at once severe hematuria with renal colic. The pulse was much accelerated and palpation gave a sense of loss of tissue in the back muscles. After 12 hours without improvement operation was decided upon, cystoscopy performed, revealing a normal left kidney and active hematuria from the right. A large amount of extravasated blood was evacuated from the perirenal space and the kidney found to be comminuted and torn across into two parts.

2. A male, 28, was jammed between two railroad cars. He had immediate shock and hematuria at first, which suddenly ceased. There was severe pain in the side and evidence of a mass. Immediate operation was decided upon, cystoscopy performed, and the opposite kidney found to be functioning normally, with nonfunction from the injured side. Exploration revealed the kidney torn from its pedicle and absolutely separated into two pieces.

3. Male, 35, with a history of injury to the right side, accompanied by pain and hematuria, four years previously. Cystoscopic and Röntgenological examination reveals an intensive pyuria, an absolute loss of function of the right kidney, a large mass of irregular shadows in the right renal area, and by pyelogram an immense calculus pyonephrosis. The question here naturally arises: Is the calculus pyonephrosis subsequent to or did it antedate the injury to the right side?

4. Female, 30, referred by an attorney for examination relative to a suit for damages. Patient received an injury to the right kidney two years ago, characterized by hematuria lasting three weeks with pain and tenderness. These symptoms were followed by chills and fever and a diagnosis was made of pyelitis of the right kidney on account of the symptoms and the presence of pus in the urine. Patient still complains of pain and pyuria and has started suit for damages. My cystoscopic and Röntgenological examination revealed the urine from the bladder and both kidneys to be free from pus, the renal functional test showed an equal and normal output from both kidneys and the pyelogram revealed a normal right renal pelvis.

5. Male, 38, referred by attorney for examination. One and a half years ago, after unusual muscular exertion, he complained of extreme pain in the right side and hematuria for four days. At this time he states that he has severe pain in the back becoming agonizing when bending over. He walks in a stiffened upright position when conscious of observation. When observed without his knowledge, he seems to bend fairly freely. Cystoscopic and Röntgenological examination revealed a double or fused kidney on the opposite side, an equal and normal functional output from both kidneys, and pyelographic study fails to show any pathological condition of his right kidney.

6. Boy, 14, struck by automobile, evident injury to the left side and kidney, accompanied by fairly severe hematuria which gradually let up but continued for 21 days. Two months afterwards examination revealed the urine microscopically free of blood or pus and by cystoscope both the kidneys were functioning equally and normally.

7. Male, 28, painter, fell 20 feet from scaffold, striking on his back, complained of severe pain in the right side, and at first urination noticed considerable amount of blood, complicated by fracture of the twelfth rib. This patient was extremely restless and difficult to keep in bed. The physical signs and pain were probably aggravated by the rib fracture. No tumor could be palpated and the patient showed no signs of shock, and although the hematuria was rather severe, vigilant expectant treatment was decided upon. No complication occurred and the patient finally made a good recovery. One year later he was
given a routine examination which revealed a perfect and equal function from both kidneys.

8. Female, 32, enters the hospital with a history of having been thrown down and kicked in the back by her husband four months previously. At this time she had hematuria and severe pain in the left-kidney region. Under rest in bed the hematuria subsided, but the pain continued in a lessened amount; in the last three weeks it has increased again and tenderness is more marked than before. At examination a tender, fluctuating swelling is noted in the right flank, and cystoscopic and Röntgenological study reveals a nonfunctioning calculus pyonephrosis of the left kidney, which no doubt antedated the injury. Incision of the loin abscess and subsequent nephrectomy was performed.

In four other cases of the usual type of injury, followed by hematuria and evidence of rupture of the kidney, I have been able to make cystoscopic and Röntgenological study going over a period of from one to four years subsequent to the injury. In all four of these there is absolutely no evidence of any deleterious effect upon the functional capacity of the kidney.

**Summary**

After careful perusal of the literature of the past 10 years as published by Wesson, Fox, Pisani, Delzell and Harrah. Campbell, Bailey, Graves and Casper, Jefferson, Klingensmith, Marshall, Reese, Shupe, and Young, and my own experience, I believe that the result of traumatism to the kidney, as viewed in terms of the percentage loss of functional disability, depends entirely upon the amount and type of destruction of the organ and the presence or absence of complications, particularly infection. My study of those cases injured and not subjected to nephrectomy, who have recovered without the intervention of infection, would surely prove that by far the vast number of ordinary cases of rupture of the kidney recover without any appreciable diminution in the functional ability of the injured kidney. If infection takes place and it is relegated to the renal pelvis alone, there may or may not be alteration in the kidney function. Such cases should be easily curable under the attention of a competent urologist by renal lavage and urinary antisepsis. If infection includes also the parenchyma, then serious results are bound to follow, as pyelonephritis, pyonephrosis, and possible renal calculus are almost sure to develop. As has heretofore been noted, the presence of pre-existing renal disease must be taken into consideration in all kidney injuries and it will at times become a difficult problem to satisfy oneself in this matter.

In all events, the exact condition following traumatism to the kidney can be absolutely checked up by the present-day methods of cystoscopic and Röntgenological examinations.

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The Chairman. We will now proceed with the program, the next paper being by Dr. C. Rutherford O'Crowley on "The traumatized urethra—prognosis and treatment—measuring the disability."

The Traumatized Urethra: Prognosis and Treatment; Measuring the Disability

By C. Rutherford O'Crowley, M. D., of Newark, N. J.

Although injuries of the urethra make up a comparatively small number of cases causing disability in varying degrees, the proper immediate and subsequent treatment that should be instituted is not clearly understood by the majority of physicians who have the opportunity of seeing these cases first.

Peacock and Hain state that (1) Injuries to the lower urinary tract are not infrequent, and are caused by straddling falls, by falls from a height crushing the pelvis, and by automobiles. (2) Eighty-nine per cent of these injuries occurred in the male. This is due to their occupational hazards, and the anatomical relations of the male urethra to the pubic arch. (3) Immediate symptoms, in their order of frequency, are hemorrhage, shock, retention of urine, extravasation, and peritonitis. (4) Latent symptoms occur in the following order: Dysuria, frequency of urination, loss in strength, urinary infection, impairment of sexual power, hæmaturia, periodical retention, and backache. (5) Immediate operations: Suprapubic cystotomy and laparotomy, and suprapubic puncture. (6) Late operations: Dilating sounds or bougies, combined suprapubic cystotomy and external urethrotomy. (7) The average time of hospitalization is 16 weeks. (8) The average period of disability is 23 months. (9) The automobile is directly responsible for one-third of these accidents. (10) The industrial disability phase is a very important one, as it involves extensive hospitalization, loss of time, and only 33 per cent of them all can be cured. (11) Fifty-five per cent of these cases were entitled to industrial compensation.
Of the industrial accidents 18.7 per cent were due to the automobile, while of the nonindustrial accidents 50 per cent were due to automobiles.

The results of treatment show 33 per cent cured, 41 per cent improved, and 25 per cent mortality. The degree of disability varied from 20 to 100 per cent, and averaged 47 per cent.

Falls of all kinds produced 32 per cent of these injuries and 55 per cent were industrial accidents. The "straddle fall" forces the urethra against the pubic arch. A very slight wound to the mucous membrane of the urethra may occur, with a few blood cells occurring in the urine. Or the pubic bones may receive a simple, compound, single, or multiple fracture, with severing of the urethra in its subpubic portion, also puncturing and lacerating the bladder.

Forty-six and four-tenths per cent of the series were due to crushing injuries, 3.5 per cent to chemical irritation, 7.1 per cent to surgical misfortunes, 10.7 per cent were due to blows, 17.8 per cent to straddle falls, and other falls caused 14.5 per cent.

Seventy-one per cent of the cases had fractured pelves. Only 9.8 per cent of all fractured pelvis cases admitted had urinary tract injury of sufficient magnitude to require special attention. Some had a few blood-cells in the urine or required catheterization for a few days.

Crushing fractures of the bony pelvis are responsible for many wounds of the lower urinary tract. These occur by the body falling from a height, as tumbling from a window or roof, by a pitch out of an automobile, or a direct crush, as a truck wheel passing over the pelvis, or a crush between freight-car couplings, or by the body being caught under falling objects, as walls, or under a rolling log. It is the fragments in fractures of the pelvis which cause severing of the urethra and the penetrating wounds of the abdomen.

Haematuria occurred in 80 per cent; shock occurred in 66.6 per cent; retention occurred in 66 per cent; extravasation occurred in 40 per cent; peritonitis occurred in 10 per cent.

Expectant treatment was instituted in 50 per cent, including the patients most severely injured, with serious complications. The mortality for this group was 28.5 per cent. Shock and other visceral injuries often governed the immediate treatment. The other 50 per cent were treated by operative measures, and here the mortality was 21.4 per cent.

A retention catheter was employed in 30 per cent of cases. Often this is sufficient treatment.

Suprapubic cystotomy was performed in 33 per cent. If catheterization is possible, and there are no contraindications on account of shock, or other wounds, an early exploration of the bladder is indicated. In cases of extreme shock and other severe injuries, it may be necessary to delay operation until the general condition has improved.

Internal urethrotomy was performed in 26 per cent. This operation has a tendency toward greater contraction of the urethra when the scar tissue organizes.

Suprapubic cystotomy and laparotomy was performed in 13 per cent. In these cases there was a question of involvement of the peritoneal cavity by rupture or perforation of the bladder. It is always
a safe procedure to explore the bladder when any doubt exists as to possible perforation.

Suprapubic puncture was performed in 6.5 per cent. This should be performed only in an emergency. It gives no definite information and merely relieves the bladder of retention for the time being.

Urethrotomies, either internal or external, and punch operations of the vesical neck, gave little permanent relief to these obstructions, as scar tissue continued to form. In the late traumatic cases sounds relieved 79 per cent. Dilatation of the urethra by this method is by far the most satisfactory treatment.

Combined suprapubic cystotomy and perineal section was used in 40 per cent. This was frequently necessary in order to find the vesical end of the severed urethra. External urethrotomy was performed in 37 per cent. This operation restores the caliber of the urethra and affords an opportunity for draining the periurethral tissues, and eliminates a great deal of scar tissue, which would otherwise form.

Joseph recommends suprapubic puncture of the bladder in cases where catheterization is not possible. He believes it less dangerous than a clumsy or hastily performed catheterization. Joseph prefers a suprasymphseal drainage which often renders further surgery unnecessary. Moreover, even if operation later becomes necessary, the establishment of suprasymphseal drainage is of great importance in healing of the wound. The sequence of interventions in injuries of the urethra should thus be retention catheter, capillary puncture, suprasymphseal drainage, exposure of the urethra, and suture of the urethra. In 1905 Pfeil enumerated the sequelae of injuries to urethra as follows: A stricture causing no symptoms but needing treatment from time to time, 10 per cent; fistula with slight dripping, 20-30 per cent; frequent painful urination, dripping, cystitis, pain on defecation and seminal emission, 50-66% per cent.

Jastram gives details of 21 severe cases and principles for treatment. He advises cautious introduction of a soft catheter, at once, leaving it for a retention catheter if infection is not present. With severe infection cystotomy should be used after external urethrotomy, preferably with an arrangement for aspiration.

McWhorter advocates the use of a seton instead of a rubber catheter in cases of injured urethra. He believes that the rubber tube causes a certain amount of edema and this interferes with drainage. Grimault and Chevassu report 4 cases of traumatic rupture of the urethra in which complete cure verified by urethroscopy was obtained by urethrorrhaphy and suprapubic drainage.

Young states that crushing of the urethra against the lower surface of the public arch is a not uncommon accident, and is caused by a fall or blow on the perineum. The injury to the urethra may be in the nature of a bruise, without rupture of the mucosa, a longitudinal tear, or a transverse tear. Transverse tears may involve a part or all of the circumference. There may be in addition bruising and devitalization of varying portions of the two ends. If the tear does not extend all the way across the urethra, the edges are held near each other, and restitution may eventually take place. If it is complete, however, the two ends retract on account of the elasticity of the urethra, and may come to be separated by a considerable distance. In this class of cases the bulbous urethra is most frequently
involved, though the membranous urethra may be torn away from the bulb. Consequently, extravasation and hematoma which may occur are confined by the perineal fascia (Colles), unless this also is lacerated. The spread is then first along the perineum, then to the lower abdominal wall, avoiding the thighs, while later the penis and scrotum may be involved. If the triangular ligament is torn, the extravasation may extend into the periprostatic region, the ischiorectal fossae, or the prevesical space.

The various sequelae of extravasation may occur, as described above. In complete rupture—the commonest kind—the urine can not escape through the distal urethra, and the urinary extravasation, driven by the full force of the bladder musculature, is rapid and extensive. Infection is the rule. Once the acute stage is past, the complication which is almost constant and of great importance in stricture. Probably owing to the depth of the infection which occurs and the great extent of the fibrotic repair process these strictures are much denser and firmer than gonorrheal strictures, they contract more rapidly and are more difficult to dilate. If the ends of the urethra have not been properly approximated after the injury, the urine may pass through tortuous fibrotic channels or entirely through fistulous tracts to the perineum or elsewhere on the outer surface.

The penile urethra may be ruptured, usually when the organ is erect, by blows or by other twisting or bending forces.

In fractures of the pelvis the urethra often escapes injury, but it may be torn across or lacerated by bone fragments. The membranous urethra is the portion usually involved. The mechanism of these injuries is different from that of the ones caused by blows on the perineum, which are seldom severe enough to cause a bony fracture. When it does occur it is usually a transverse break of the inferior pubic ramus, which has little effect on the injuries of the urinary tract. The commoner pelvic fractures result from crushing forces, like the wheels of wagons or automobiles, or the buffers of railway cars, acting from front to rear or from side to side. The fracture therefore, oftenest of the pubes, is accompanied by displacement of the adjoining tissues, in the course of which the urethra is torn and usually torn entirely across. It must be remembered, however, that this is true only of the severer injuries and that the urethra escapes in the great majority of pelvic fractures. When it does happen, however, the consequences are serious and the damage may be extensive. The urethra may be lacerated for quite a distance, so that it is ultimately occluded by a wide and dense band of fibrous tissue. The prostate and bladder may also be lacerated, so that they too are involved in the fibrous change, and in addition a variety of false passages, including sometimes an entirely new channel from the bladder to the urethra or perineum, may be produced. Losses of substance may allow urethral diverticula and blind pockets to form. Lacerations of the corpora cavernosa, pudic nerves, ejaculatory ducts, and seminal vesicles may interfere with the sexual function, producing loss of erection or sterility, or both.

In the immediate complications, injury to the corpora cavernosa, pudic arteries, or preprostatic plexus may determine serious hemorrhage. Rarely the rectum may be involved, but in any case infection is almost inevitable. It occurs even in the absence of intervention,
and is probably due to invasion by the bacteria which frequently live harmlessly in the normal urethra. To these things urinary extravasation is added.

In the diagnosis of injuries of the urethra one must keep in mind the sort of traumatism in which it may occur, and search for it carefully. The principal symptoms are pain, hæmaturia, in the form of urethrorrhagia, and difficulty of urination. Typically the bleeding comes from the meatus and is independent of voiding. It may be lacking, however, when the injury is partial, with no break in the mucosa, or sometimes when the injury is proximal to the external sphincter, so that the blood remains in the posterior urethra or finds its way into the bladder. In the former case a local tumefaction (hæmatoma) along the urethra is present and in the latter the bladder may even be obstructed by clots. In some cases the patient may be able to void with little difficulty, in some he may be able with great effort to emit a small quantity, and in others (the majority) he can not void at all. There is usually not the tenesmus seen in injuries of the bladder, and not infrequently all signs of urinary extravasation are lacking at first. Indeed, the patient is sometimes able to state clearly that the perineal swelling came on just at the time when he first attempted to void after the accident. He really voids into his perineal tissues. With successive efforts the tumefaction grows. Its distribution depends on the location of the tear, as described above. It is studied by palpation of the perineum and abdomen and by rectal examination. If a swelling can be felt by rectum, obscuring the prostate, the extravasation (urine or blood, or both) has reached above the triangular ligament. Distention of the bladder, determined by palpation or percussion, rules out rupture of that organ.

In many cases it will be found that owing to the absence of voiding someone has attempted catheterization. This usually does no good and insures infection. Whenever there is any question of a rupture of the urethra all instrumentation should be avoided. If there is no injury to the urethra, catheterization is not necessary; if there is injury there should be immediate operative exploration. Cases of urinary retention following bodily injuries with no lesion of the urinary tract may be confusing, but in the absence of positive signs of any such lesion, one may safely wait, since retentions of this sort eventually relieve themselves without harm to the patient. If there are doubtful signs, as perhaps slight hæmaturia or slight periurethral tumefaction, it is better to explore, since early operation may save life if there is injury, and does no harm if there is not.

In conclusion, it is to be emphasized that ruptures of the urethra not followed by retention and not accompanied by tumefaction or severe urethrorrhagia, and purely interstitial ruptures, need no treatment. All other cases should be subjected to immediate intervention.

In the presence of a urethral rupture all explorations and catheterizations should be avoided. These only lead to infection. If there is retention and it is impossible to intervene at once, recourse should be had to suprapubic puncture of the bladder.

Treatment consists in sewing the extremities of the canal together and diverting the urinary current by means of cystostomy in order to avoid infection by a permanent catheter.
Extravasation of urine is to be treated promptly by diversion of urine and multiple incisions into the cellulitis with drainage. The mortality in extravasation cases treated after 24 hours is exceedingly high.

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DISCUSSION

The Chairman. I am sure we have all been most interested in this series of papers, and we will now have a discussion on the first paper, "Traumatic labyrinthitis."

Mr. Williams. I desire to ask Doctor Blumberg a few questions. In the experience which I have had in these cases—I suppose such as all of you have had—where the injury to the inner ear results in deafness, we make the award which the particular schedule which we have calls for; but where the injury goes to the outbranch of the nerve and has nothing to do with hearing but has to do with being able to maintain equilibrium, we have a great deal of trouble. People are absolutely unable to do any work that they know how to do as a result.

Mr. Stewart. Right along the line of what Mr. Williams has said, I would like to ask Doctor Blumberg some questions. I realize that we have had here this morning probably the best medical ability on the subjects treated that could be obtained in New York. What little I understand of the papers, they were certainly remarkable.

Doctor Blumberg, as I take his paper, deals principally with the serious trouble of the ear, such as boiler makers would have, and that sort of thing. Now, after all, it seems to me that we are coming up against another condition entirely. The boiler maker, with his rivet and hammer, is going to pass away because of electric and acetylene welding. On the other hand, there is an increasing type of noise, noise, noise—our own offices; take our own offices, with these electric adding machines running all the time, with the street noises outside—take those inside the loop in Chicago—we are producing; it appears to me, through the ear a nervous condition of the human race that is going to be more widespread and much more difficult to measure than that caused by those noises which really affect the hearing.
A very large percentage of the boiler makers are more or less deaf—we know what that does—but if we put an able, intelligent, girl of sweet disposition into a room with 40 or 50 electrical machines, in three or four years she has a disposition like a cross-cut saw; she flies all to pieces, and we find ourselves being forced in self-defense to say, "No typewriter in my office"—I mean the machine.

Now, I prophesy the annihilation of the human race through its own noise. I am not going to set any date. I think, perhaps, if Archbishop Usher hadn't undertaken to figure back to ascertain the date of the commencement of the human race there wouldn't have been as much noise in the world as there has been, so I am not going to set any date. But, seriously, all joking aside, it does seem to me that we are producing a great amount of noise, and the effect of the noise we produce, some of which is entirely unnecessary, is reducing rapidly the efficiency—and to my mind shortening the life—of the human race.

Now, I am wondering if it is not that sort of study of the ear—of that condition which is coming and which is growing, rather than the study of those more severe injuries which we can measure more or less, but which are disappearing—which should be made. To my mind one of the great problems of industry to-day is noise and its effect not upon the ear but upon the nerves.

Doctor Arlitz. This paper of Doctor Blumberg's does not deal with occupational deafness or occupational neurosis; the subject is one which has been tremendously bothersome to the compensation department of the department of labor. The type of deafness or the symptomatology that is mentioned in Doctor Blumberg's paper is that which occurs after head trauma, or after bodily shock, and where in a large proportion of the cases there is no evidence of a fracturing of the skull. It has been a very confusing subject to us in the compensation bureau, having in mind that it is our duty to award the injured employee the largest amount of compensation possible. We thought it would be a wise plan to have a paper on this subject and to have a general discussion, so that in the future we might be able to do full justice to those who have been injured in this manner.

Mr. Kingston. I wonder if what we are doing in the way of a rating for the deafness in one ear would meet with the judgment of Doctor Blumberg. We rate industrial deafness in one ear as 3 per cent, in terms of total working disability. Of course that is only a guess. I do not know that there is anything scientific about it. We have worked on that principle and it gives to the average man a lump-sum settlement of about from $300 to $500, depending on his wages, for such disability; and for the total loss of hearing in both ears we rate that at 30 per cent.

The deafness that Mr. Stewart spoke of, of course, is an industrial disease, and unless that is covered by the particular act in question there is no compensation at all. I wonder how many of the jurisdictions include industrial deafness or boiler-makers' deafness as an industrial disease in the provisions of their act in respect to which compensation is payable.

The Chairman. Doctor Blumberg will you close this paper?
Doctor Blumberg. In so far as the total loss of hearing in one ear is concerned, rated at 3 per cent, I think that is rated entirely too low. A man who has total loss of hearing in one ear should be rated at least 10 per cent permanent total disability—total wage loss; a man who is totally deaf in both ears should be rated at least at 50 per cent permanent total. The man who is deaf in one ear has lost a very important defensive mechanism; his occupational hazard has been tremendously increased as he is so much more exposed to additional accident.

How can the measurement of the vestibular portion of the ear be arbitrarily made? As I understand the compensation law, the man is not rated as disabled a certain percentage for any particular work; my understanding of the law is that the man is disabled a certain percentage for any work. Now a man who has a labyrinthian hyperemia, a man who is attacked by occasional vertigo, by occasional dizziness, by occasional nausea, that man can still work. That man, perhaps, may be totally incapacitated as a painter, as an iron worker; he may be totally incapacitated for those occupations which require certain distances or certain height; but he can fill very many gainful occupations fully.

The percentages as given are based, first, where the hearing portion is concerned, on the particular percentage of loss of hearing; secondly, on the amount of dizziness, on the amount of disturbance that that man generally has. In that type treatment of the inner ear is sometimes of some avail. The percentage there was given at 30 per cent. Those people can do some work. It is only where there is a hazard of heighth from the ground, where the man may suddenly get dizzy and fall down, that he is totally incapacitated, but he can do these other kinds of work.

On the proposition of the psychic or the psychological effect of noise, I can not see how that possibly can be rated. If you start there, you will simply have to start rating the effects of every act that each individual does in his daily life. To say that noise is increasing the irascibility of people and changing their tempers may be perfectly true, but my contention would be that the vivid color schemes which we see every now and then and then and the type of clothes that people wear, are just as much at fault perhaps as noises; that even the foods we eat have a certain effect on the total human; and if you are going to start gauging the psychic or psychological effect of noise you will have to gauge everything that the human being does.

In so far as the boiler maker proposition is concerned, at most I would rate him only for his deafness—temporary. Very often if the occupation is changed the deafness is very much decreased and in many cases is cured.

The Chairman. The second paper is now open for discussion, "The fracture of the female pelvis."

Mr. Williams. Those cases are fortunately very rare, but I wonder if Doctor Maver has any statistics about how many of them have more serious results along the line of either nervous disorders or beginning psychosis. How many of those cases result in disturbed mental conditions?

Doctor Maver. I do not have any statistics available with reference to the possibility that Doctor Williams has brought up relative to
nervousness developing subsequent to a fractured pelvis. Such cases have been reported, and they seem to come mostly in the younger adults. If we can exclude any organic lesion subsequent to the fracture and if it is purely a mental condition, I would be of the opinion that there would be no real reason for calculating disability on those grounds alone, because we are all familiar with the fact that a great many of them do improve and clear up practically altogether after they obtain their award.

Mr. Williams. This case has been running along six or seven years with very little physical disturbance, but the mental condition is just the same.

Doctor Mauer. No bladder complications at all, or uterine complications?

Mr. Williams. No.

Doctor Mauer. I confess I do not know how you can arrive at any calculation of that mental disability.

The Chairman. The third paper is now open for discussion, "The traumatic kidney," by Doctor Woodruff.

Doctor O'Crowley. I heard a very interesting remark here a minute ago by your secretary when he said that he prophesied that there would be gradual annihilation of the race by noise. I wish to take a little exception to that by saying that we as urologists expect to prolong the human race by the use of sounds.

I was very much interested in hearing Doctor Woodruff's paper, and I am sure this association is to be congratulated upon having such men as Doctor Woodruff present the subject, because there is no better authority of whom I know.

I have seen more traumatic injuries of the kidneys than I have of the urethra. Doctor Woodruff left a little gap in his paper for me to mention these displaced kidneys that come up before accident compensation boards. We feel to-day that the kidney is so well protected in the ordinary fall that it is not going to be displaced in a way that it will require a moving up; it is generally recognized that nephroptosis of one kidney rarely comes singly; it is one part of a picture, of the general abdominal content. The operation for hanging up the kidney is being done less to-day than it ever was.

Kattarrus, an international authority, who died a few years ago, in his volume on urology goes over this subject very carefully.

A few years ago I had the case of a little boy who was knocked down by the fender of an automobile. He started to pass a little blood. Doctor Kerns called me in. The boy was not in shock; he had a pinkish urine, not a profuse haematuria. I played a watchful waiting game with this boy and he went along all right.

I rarely see these compensation cases until after they have had operations—many times useless operations, bungled operations. There should be some way in which a case with a distinct specialized trauma in any part of the body could be gotten to an authority. I say that for the reason that the man will be better off, the compensation board will be better off, and the insurance company will be better off.

I want to tell you about a case of malingering that went through. About a year ago I was called in for expert testimony on the Globe
Indemnity side in the case of an Italian who had been sitting on the back seat of a "flivver" with two other fellows. A car on Bloomfield Avenue jammed them, and the car happened to stop short. Nobody was injured, but this individual was knocked off the back seat to the floor. He was brought in to St. Girard's hospital, which had a very bad name, and he was kept there for a while. He said he was very sick. He had just a tiny scratch on his back—a screw driver was supposed to have penetrated him in the side. My assistant was called and found that he had a pyonephrotic kidney. This was within six weeks after the injury. A pyonephrotic kidney is a big kidney with tissues destroyed, replaced by pus. It is impossible for anything like that to take place in that length of time. The case went to trial. I was in the court room, with 12 men in the jury box. Many times there are peculiar ways of thinking about these cases; I have seen it. The man was suing for $3,500. As it went along the lawyers got together with the judge. I was not called. The case was called off, and the individual was given $1,800. One of the adjusters in the Public Service Corporation, a patient of mine, was in the office, and he said, "You were on that case?" I said, "Yes; but I didn't get a chance to go on the stand." He said, "That family has made trouble for us right along, they have been trimming Public Service right and left, and we have been trying to get them, but we can not do it."  

Mr. Kingston. Just one question that has to do with the question of rating for kidney disability. I wonder if Doctor Woodruff would express an opinion of what he considers a fair rating for the complete loss of one kidney—how does it affect the man's working ability? We have had three or four such cases; I forget now what the causes were in all cases, but one case was a young lad where the surgeon operated removing the kidney, and we rated that 15 per cent disability. That has become standard rating with us for such cases where it is not complicated with any other condition.

Doctor Arlitz. I do not know if you realize just what the importance of Doctor Woodruff's paper and of Doctor O'Crowley's paper is. If you have had any experience on the compensation board you would appreciate just what it means. The trouble with cases of this kind and the compensation bureaus where they must be rated is that we can not get men like Doctor Woodruff or Doctor O'Crowley to attend the hearings. This work is usually taken care of by men who have very little, if any, knowledge of this subject, and they make the ratings. In some instances the ratings are entirely too small and in other instances they are entirely too large.

I have in mind several very important cases where one kidney had been removed following trauma. Just what percentage of disability should be allowed to an individual of that kind Doctor Woodruff failed to mention, and I am curious to know.

Another thing: Doctor Woodruff makes mention of the fact that a kidney may be traumatized to a considerable extent and the condition may be followed by a recovery in the sense that the kidney functionates in a manner approaching the normal. In a case of that kind there must be considerable scarred tissue, and it seems to me, even if the kidney did functionate normally in a macroscopic sense, still
there is a microscopical loss of function, and the individual should be compensated for it. Those are the problems that bother the men in the compensation bureau. I would like to ask Doctor Woodruff if he will make that a little bit clearer.

Doctor Nash. Doctor Woodruff’s paper was extremely interesting to me and clarified a number of points from a medical standpoint, particularly in differentiating between the symptomatology in those cases where there is involvement of disease of the kidney. The next paper was extremely interesting in giving a great many statistics relative to injuries of the urethra. Most of the facts given are of interest to those who treat the case, but we who are engaged in an advisory capacity by insurance companies must constantly answer the question of cause and relation.

There was some mention of latent symptoms following trauma to kidneys. I would like to know a little more about the latent symptoms and what Doctor Woodruff considers a reasonable length of time between an alleged accident and the development of symptoms.

This problem arises constantly, and this question must be answered constantly by doctors who appear before compensation boards, or who have to advise employers in regard to the payment of claims for these patients.

I believe it was Doctor O’Crowley who mentioned something about displaced and movable kidneys. It is my impression that every kidney that can be felt is surely not one that has any pathological significance.

The Chairman. If there is no further discussion, Doctor Woodruff will answer these questions.

Doctor Woodruff. I purposely omitted from my paper the discussion of displaced kidney. Of course, Doctor O’Crowley snapped it up immediately, and some others, but I did not feel that displaced kidney had any place in that paper. That is a question that perhaps comes up in your compensation boards too as much as any other, and it is always, absolutely every time, the old question of the hen and the egg—which was first. I have never known it to fail. I have seen quite a few of those discussions and been in on them in courts. The patient will swear by all that he ever knew or hoped to be that that kidney never was in that position before, but we all know as medical men that there are a large number of loose, movable, or displaced kidneys—even in this room. Now, how are we going to arrive at any conclusion or say anything in a paper about a condition of that kind. It just can not be discussed, nor can it be truthfully enunciated just what to do as to them. I do not know.

Mr. Kingston. Have you ever known of a case where you could diagnose it as positively due to trauma?

Doctor Woodruff. No; I do not think so. A patient may be traumatized and come in and say, here is this kidney—it might have been there before. I have a great many cases coming to my office, particularly female, where I feel a kidney, and I have learned to say nothing about it unless there are symptoms referable to it and the patient knows it. God forbid me ever telling a woman that she has a movable kidney because she is a lost soul right there. That
is why I did not mention it, because the discussion about movable kidneys is too great. That ought also to answer Doctor Nash.

Mr. Kingston. My question was about 15 per cent disability.

Doctor Woodruff. I think that is quite fair, although the percentage rating for the loss of one kidney depends again on circumstances. In the first place, it is probably too small a rating for a woman, because a female, if she is not too far along in years, expects to have children, and although many women go through pregnancy with one kidney—I have seen a number of them do it—yet we always feel that one kidney in a pregnant woman is not quite 100 per cent.

I believe that loss of one kidney in a woman should receive a higher rating than 15 per cent. I believe that the age of a male has something to do with it. I believe that in the younger males your 15 per cent may be a little low, because of the fact that the young male is liable to infective diseases of the other kidney or even accidents to his other kidney.

Mr. Kingston. Would you say that a man who has lost one kidney, one who is a laboring man ordinarily, must change his occupation to lighter work?

Doctor Woodruff. No; I wouldn't say that, because he is not much more liable to injury than anybody else.

Mr. Williams. What would a life insurance company say to a man who had lost one kidney and wanted to take out a life policy?

Doctor Woodruff. The company passes all, practically. If the urinary examination is perfect they pass. The company may rate them up a little bit.

Mr. Stiggins. Would you say that the loss of one kidney necessarily actually disables a man for work?

Doctor Woodruff. No; not at all; it does not disable him at all. There are hundreds—yes, thousands—of men with one kidney around this country to-day working just the same as they ever did.

Mr. Stiggins. I understand you to be of the opinion that every case of the loss of one kidney should be judged by the particular circumstances?

Doctor Woodruff. On its own footing.

Mr. Kingston. It is only a potential disability.

Doctor Woodruff. It is not a disability at all; it would depend entirely upon the condition of the other kidney. Of course, if the other kidney is diseased then your percentage disability must go up high.

If you had a diseased kidney on the other side, whether a surgically or medically diseased kidney, then the loss of one kidney means everything. In the presence of double nephritis the patient's term of life is very short because of the additional work thrown upon the functional capacity of that kidney.

Doctor Arlitz asked about the function of the kidney in which scarred tissue is present. That has very little effect, because when a kidney heals up the scarred tissue is not very great; it depends entirely upon the size and upon the amount of damage that has been done to the kidney, relative to the amount of scarred tissue. A kidney that has been amputated, cut in two for any reason, such as
removal of a cyst or something of that kind, will function 100 per cent.

I have seen many kidneys with a good-sized hypernephroma of the kidney where the function of that kidney was not interfered with at all, not a particle. So that the scarred tissue, as a rule, does not affect to any great extent the functional capacity of the kidney.

Doctor Nash asked about the latent symptoms of kidney injury—what are they? Well, I do not know, unless they are neurotic. I do not recall anything unless they are neurotic, or unless the injury causes actual disease in the kidney. If actual disease such as infection takes place we have the usual symptoms of renal disease, and the time between the accident and the appearance of symptoms—an injury of the kidney of any amount at all will cause immediate symptoms. If the kidney is ruptured to any extent there is immediate haematuria, and there is usually immediate pain on that side, so that if a patient is injured and two or three months afterwards complains of haematuria, that haematuria is not due to the actual injury. It may be due, if present, to the result of the injury, in that renal disease has been initiated by the injury, but the symptoms of renal injury occur immediately.

The Chairman. Now we will discuss Doctor O'Crowley's paper.

Doctor Arlitz. This is always a very interesting subject and also a very trying subject to those of us who have labored in the compensation bureau. Cases of traumatized kidney usually present themselves at the bureau with this history, that they are going to Doctor Woodruff, or to Doctor O'Crowley, about once or twice a week, or twice a month, to have sounds passed. Now we at the bureau call up Doctor O'Crowley or Doctor Woodruff and say, "How long will this thing last?" "Well, you can not tell how long it is going to last; we may have to dilate him for six months and maybe we will let him go then, and he may be all right, but he may come back in three months and we will have to go through the same process again." I believe many of the cases are about like that.

How are we to measure the percentage of disability? It is essentially a speculative matter, but we must measure it. My first experience with Doctor O'Crowley was in the case of a man who went to see a specialist by the name of Vane, I think his name was, in Plainville. He was to have his bladder examined. Cases of traumatized kidney usually present themselves at the bureau with this history, that they are going to Doctor Woodruff, or to Doctor O'Crowley, about once or twice a week, or twice a month, to have sounds passed. Now we at the bureau call up Doctor O'Crowley or Doctor Woodruff and say, "How long will this thing last?" "Well, you can not tell how long it is going to last; we may have to dilate him for six months and maybe we will let him go then, and he may be all right, but he may come back in three months and we will have to go through the same process again." I believe many of the cases are about like that.

How are we to measure the percentage of disability? It is essentially a speculative matter, but we must measure it. My first experience with Doctor O'Crowley was in the case of a man who went to see a specialist by the name of Vane, I think his name was, in Plainville. He was to have his bladder examined. The doctor injected what he thought was novocain; it was bought in a sealed bottle, but it happened to be alcohol. The man developed a tremendously painful urethral stricture. Four or five doctors were in attendance when this operation was performed. He went from Doctor Dubois to Dr. Raymond Detiris, who performed a urethral operation which apparently was not very successful and he went about for several years wearing a big rubber appliance. I think Johnson & Johnson, who were making that novocain at that time, paid him $6,500 in settlement of the case, but that did not settle the case; he then commenced action against Doctor Dubois. That fellow went from bad to worse. He was 100 per cent disabled and he committed suicide.

One of the gentlemen here said that the world would eventually be destroyed by sound, and Doctor O'Crowley said he was going to save the world with sound, which reminds me of a man who came into my office on three or four occasions with decidedly bloody urine
which was alleged to have been the result of an injury. The urine was tremendously bloody. I had it examined; it was positive. He came back two weeks later and went through the same procedure, with a positive blood finding. He came back two weeks after that—he always came in by appointment—and again a tremendous amount of blood. I called up the people I represented and said, "I don't see what I can do in this case; here is a man who has a bloody urine and he gives the history of trauma. I would advise you to settle the case." They paid him $2,500, which was rather a small amount of money for that type of injury, but the curious feature about the case was that he went around and told several people how he had gypped Doctor Arlitz. He used to go in and see Doctor Dowd each day before he came to my office and Doctor Dowd would pass a big sound on him and cause the hemorrhage, then he would come down and show me just what he could do.

Doctor Woodruff. I would like to say a word about Doctor O'Crowley's paper, which was fine. I think the subject a much more important subject than ruptures of the kidney—far more important—because ruptures of the kidney, if left alone, only have a death rate of about 5 per cent—less than that—while ruptures of the urethra in unattended cases have a death rate of at least 95 per cent. Don't forget it. There is no more dangerous condition to-day than rupture of the urethra, because if the urethra is ruptured the urine is bound to escape through the rupture, extravasate into the periurethral tissues and cause infection and death, and it will do it in practically 95 per cent of the cases unattended. I am saying that from my own knowledge.

Mr. Kingston. I have one question to ask; it is not directly related to the subject, but it is, perhaps, a related subject. We have a great many cases of orchitis, and the question is whether orchitis can be induced other than by direct trauma. We have been advised that it is a very rare occurrence to have orchitis as a result of accident, and when it is to be considered at all as the result of accident there must be evidence that the trauma was directly responsible.

Doctor Spickers. I was very glad to hear a part of Doctor O'Crowley's paper. I enjoyed it very much, and I feel, as he does, that the best way to treat ruptured urethra is by immediate operation. I think a great many times the mistake has been made of trying to sew the ends of the urethra together without doing a suprapubic cystotomy, and I think the only way to hope for success in the healing of urethra is by combining the operation with the opening of the bladder above the pubis. However, I feel that there are certain cases of injury to the urethra where the urethra has not been completely severed, where a simple incision in the perineum will be sufficient for cure; and I would like to ask Doctor O'Crowley if he has ever seen or treated cases of that character, where he simply opened the urethra, put in a small drain, and the patient would go on and urinate. There may be some leakage from the perineum for some time but afterwards a very excellent result would be obtained by subsequent passage of sounds.

The Chairman. If there is no further discussion we will ask Doctor O'Crowley to close.
Doctor O’Crowley, I am very glad of this discussion. I remember the case that Doctor Arlitz spoke about very well, but I never did know the ultimate outcome of that individual. He certainly was a miserable urological wreck.

Doctor Arlitz brought out the question that we see these cases after they have been operated upon. They are apparently well and are trying to go back to their occupation, but we find that they have a stricture that needs dilating. Such a man comes into the office from one of the insurance companies, which wants to know how long it is going to be until this man will be away from physicians. That is a very hard thing to estimate. The only rule I adhere to is that I try to determine how much of an injury this man had to his urethra at that time—at the time of his accident—whether he had a fractured pelvis with complete severance, or whether he had just a rent or tear; the kind of treatment he had had, and whether it was inductive to infection. I gauge the length of time that the individual will be under medical care by half a dozen treatments in my hands, to see to what extent I can dilate the stricture, and where my maximum point in office treatment is. I may decide that an excision of that scarred tissue, and reuniting the two ends of good urethra might be better, cutting down a long-drawn-out dilation; it might be better for the individual and better from the compensation standpoint and from that of the insurance company.

But I do not think any physician handling dilating instruments the first time that an individual comes in, which is way past the time of his accident and they are the ones we usually see—can tell how long that individual is going to need treatment. We do not think, as they used to, that he is going to be sounded all his life, but we do know that we are going to dilate the stricture of that man several times at intervals of once in four or five days or a week, and see if we can get him up to a normal urethra for him; then we are going to stretch the intervals between and see how far this man can go—it may be six months or a year—and then we may let him go entirely away from us. That is the only way I can ever give a report to any of these companies.

To go before a compensation bureau and tell it after one examination of a condition like this, how long this man is going to be partially incapacitated is an impossible thing.

In a good many of these cases that have to be dilated, one of the paramount symptoms that comes up before the compensation board is the loss of sexual function. A great many individuals who have only minor injuries to their genital regions have psychical impotency; they have idiopathic conditions, and even some malformations of the genitals. Many of those cases drop into the class of psychical impotency cases, so I discount a great deal of that as a symptom to be judged in awarding a percentage of disability for compensation.

I think the most important thing that I spoke of in my paper—Doctor Woodruff emphasized that—was extravasation of urine. I get many extravasations of urine in a year—idiopathic, very few traumatic. I have the patient transferred from the pneumonia ward and extravasation starts out of a clear sky. A good many cases are due to instrumentation, but through all the experience I have had I know that if you do not get after extravasation within the first 24
hours you are licked; that increasingly the percentage goes higher and higher, the loose tissue there make gangrene sepsis, and the individual goes into general sepsis and dies. Still doctors here have seen cases, with four or five days' extravasation, where you open up and let out quarts of pus and the individuals have gotten well. The antibodies are fast enough if the resistance is good, but it is not the rule. The rule for the doctors who first see these cases, whether they have tumefaction and extravasation, is that surgical intervention is most imperative.

The doctor is right in his contention that if you are doing any surgical intervention upon the urethra for complete laceration of the urethra, you should divert that normal infected urine and give the parts in their natural habitat a chance to reconstruct themselves, but not with the catheter in there—that causes oedema—and try to side-track your urine that way; because in the hands of the average surgeon a little incision into the bladder is a minor operation and you get a better chance, with less danger of infecting the area.

Complete laceration always comes when you have fractured pelvis, but with these interstitial tears that are rather slight, if you can locate them and they are anterior in the urethra, it is a simple proposition to deflect the flow of urine through the perineum and let the anterior urethra take care of itself.

The last thing I have to talk about is what we see mostly—what I think most of the cases referred to me are—that is, testicular conditions. The men come in; they have been lifting a bag of sand, straining, or something else, most always unduly, and they have a swollen testicle. They have been in bed and in the hospital, and it is late when we see them. I never see these cases first; I can never make a diagnosis except from the hospital chart and how the case looks from the patient's history. We who see them late have nothing but the history and the late physical examination on which to form any kind of an opinion at all; the earmarks are left. We have a great many of these cases come in. You ask about orchitis. Not many of the orchitis cases are traumatic orchitis; that is very rare, but we do see it once in a while. A case of traumatic orchitis that I saw recently was that of a man caught in a flywheel belt; he had one testicle that came up large. That was traumatic orchitis, and I saw him right away.

A Delegate. Can that come from a lift purely?

Doctor O'Crowley. No; I will say that you do not get traumatic orchitis from an indirect injury, but from a direct injury you may. But these indirect-orchitis cases are either gonorrheal or tubercular, and in a vast majority of them I have sent back that report. We see the epididymitis cases, but in general use it is called orchitis, and the physician has to differentiate between a tubercular condition and a gonorrheal condition. Many times you get a negative history; the patient tells you he never had anything like that in his life before, but I do not go at them that way. I say, "How long ago did you have gonorrhea?" "Well," he says, "I think I had a little strain four or five years ago." That lets the thing out. That became swollen because he has had an exacerbation of that trouble which he has had smoldering there. He has never been cured of
this gonorrhea, and his accident lighted up this condition again. It looks like a swollen testicle when you look at it.

Doctor Nash. When one states definitely and dogmatically that there is no possible causal relation between a lift or indirect trauma and orchitis, I think it is fair for the doctor to say something to the lay people here about such expressions of opinion as are given by Chace of England, who has a theory that excessive strain to the lumbar muscles or to other muscles produces an increased cremasteric reflex with a change in the circulatory apparatus around the scrotal region, as a result of which one can have orchitis. The expression of the opinion by Keyes is that a strain of the lumbar muscles can also send a stimulus along the cremasteric muscle and the nerve supply to the scrotal region, producing orchitis. Personally I do not believe these things, but I think it is fair to express the opinions of others, and I would like to have Doctor O'Crowley say something about this subject.

Doctor O'Crowley. I am glad the doctor brought that up. I believe the same way, but I do believe that there has been a preexisting lesion in that side of the scrotum. I think that these have been erroneously diagnosed. I do not see how lifting and cranking cars and other things that so many people have to do every day, things that you think would strain the testicle, things that the vast majority of the male population do every day, are enough for that. I say there must have been a preexisting lesion in these individuals, either tubercular or gonorrheal or syphilitic, causing that; there must have been some preexisting condition, because I have seen very few traumatic conditions of the testicles and they have been 100 per cent traumatic and no preexisting lesions.

I am only telling you my experience with these orchitis cases. It is not to be thought of by you gentlemen as much as epididymitis, and I think we have to differentiate between tubercular and gonorrheal epididymitis and these so-called cases coming before the compensation boards called orchitis.

Mr. Kingston. Is it easier to get traumatic epididymitis than orchitis?

Doctor O'Crowley. Yes; much easier. Many times indirect violence can start it up. You take a predisposed individual with a lesion and if he receives the strain or blow on the scrotum, he would be apt to get a tubercular epididymitis. We see that but we do not think it is a causative factor; we think it is a predisposing factor.

The President. I want, in behalf of the association, to thank the doctors who have read papers here this morning for our convention; likewise to thank those who entered into the discussion. I want to thank Doctor Todd for having presided at the meeting, and Doctor Arlitz in particular, who is responsible for our medical program.

[Meeting adjourned.]
MEDICAL SESSION

The Chairman. The first paper this afternoon will be one on "The relationship between single trauma, carcinoma, and workmen's compensation," by Dr. Jonathan M. Wainwright, of Scranton, Pa. Doctor Wainwright has some very interesting and some very novel and original ideas on this subject.

On the Relationship Between Single Trauma, Carcinoma, and Workmen's Compensation

By Jonathan M. Wainwright, A. M., M. D., of Scranton, Pa., chief surgeon to Delaware, Lackawanna & Western Railroad, Glen Alden Coal Co., and Moses Taylor Hospital.

The possibility of a single trauma causing carcinoma is very much doubted or even considered impossible by many careful observers. It seems best, therefore, to present as the "text of this discourse" three cases which would seem to the average judicial layman to prove definitely that a causal relationship may occur. If we will admit that the relationship has been a true one even in one case, we must consequently admit that it may likewise be a possibility in any other case in which this relationship comes up for serious consideration.

Case 1 (fig. 1).—H. W., 42 years old, automobile mechanic. Eight weeks before observation he struck himself a severe blow with a wrench at the exact point of the tumor shown in the photograph. The external surface of the cheek was not broken but the mucous membrane on the inner side was broken and bled. This wound in the mouth healed after about two weeks. At about this time a "pimple" formed on the skin surface. This broke open, began to bleed, and grew rapidly, so that the condition shown in the photograph was produced about eight weeks from the original injury. A biopsy at this time showed squamous epithelioma.

Summary: A young man; no previous trouble; a blow sufficient to break the mucous membrane in the mouth; skin carcinoma appearing in two weeks, reaching the condition shown in eight weeks; microscopic confirmation.

It is hard to believe this was a coincidence or that the blow "called attention to the trouble." The writer advised the insurance company that this blow caused the cancer and this opinion was accepted.

Case 2 (fig. 2).—D. P., 62 years old, motor-truck driver. Two years before, while driving his truck, his right ear was frostbitten. The skin at the top of the pinna remained rough, thick, and tender, and gradually this thickening became more prominent at the point shown in the photograph. This prominent point has remained and has very slowly increased in size. Examination June 26, 1928, showed at the point indicated a hard nodule about one-eighth inch in diameter, not ulcerated, movable on cartilage. Excision. Microscope shows basal-celled epithelioma.

Summary: This man had no thought of compensation, and beyond the human tendency to attribute all our ills to some external factor had no reason to attribute his skin carcinoma to the frostbite. Abnormal skin was noted from
the time of the frostbite till the excision of the cancer two years later. Frostbite, pathologically speaking, may have a different mode of action from a blow, but it damages tissue, leaves some "scar" tissue, and, from a legal point of view, the two should be considered identical.

Case 3 (fig. 3).—(Reported by Drs. L. L. and O. P. Brown, in Southwestern Medicine, February, 1928, Vol. XII, p. 69.) B. T., 15 years. Seven months before observation went into a burning building. His foot went through a burned board, causing an abrasion about the middle of the shin. The wound never healed. Seven months after the injury the ulcerated area was grafted. Complete failure. Wassermann negative. The ulcerated area continued to spread, and at the end of one year it was 3 inches in diameter. Biopsy at this time Dr. Willis W. Waite, pathologist to Hotel Dieu, El Paso, Tex., reported squamous epithelioma. Doctor Waite kindly gave a slide to the writer's laboratory, where this diagnosis was confirmed.

Summary: A boy, 15; skin carcinoma in a very unusual place. Certainly no cancer was present before, and became aggravated. Wound never healed after injury. One year later microscopic proof of squamous epithelioma.

It would seem that these three cases should convince anyone that carcinoma can follow a single trauma. The sequence is rare. If we assess the real cases against the thousands of traumata occurring every day it is enormously rare. Furthermore, in the malignant conditions, either carcinoma or sarcoma, as they are met with clinically, the cases being presented under such circumstances that an antecedent trauma should be accepted as a cause, are again very rare. Coley (Annals of Surgery, April, 1911), in an elaborate presentation of this subject, reports 970 personal cases of sarcoma, with a history of trauma in 23 per cent and 250 cases of carcinoma, with a history of trauma in 32 per cent. Of these 120 were breast carcinoma, with a history of trauma in 43.3 per cent. McWilliams reported 44.6 per cent for breast carcinoma. In many of these cases the data are not convincing, and while these figures fairly accurately represent alleged trauma, neither Coley nor anyone else believes that the percentage of cases which should be accepted as definite from a legal point of view is nearly as large as these figures.

It was thought that the enormous number of injuries in the Great War would offer valuable information on the relation between trauma and both carcinoma and sarcoma, but inquiries have been singularly sterile. Regaud, after an enormous experience in Paris, kindly states to the writer under date of February 27, 1928, that he has not observed cancer after a war wound. The French Minister of War also very courteously wrote on June 6, 1928, that the ministry also had no record of such cases. Apparently only one case, and that a sarcoma of the maxilla after gunshot wound, has been recorded by the British. (Pickwell, British M. J., Dec. 17, 1927.)

The United States Veterans' Bureau has apparently no cases of carcinoma after injury. The bureau does have records of 56 cases of sarcoma. The abstracts of these cases have been furnished through the kindness of Dr. E. O. Crisman, medical director. The connection is reasonably definite in only a few of these cases, and as they are all sarcomata, in which class the facts are fairly well established, they do not come within the present inquiry.

Dr. W. S. Bainbridge, from his place on the International Congress of Military Medicine, has had an unusual opportunity to study the results of war wounds and has done so with his usual energy not only for the Great War but for several other previous wars, and his results have been equally barren.
It would seem now that we should consider two points as proven:
1. That carcinoma (and sarcoma, too) may arise from a single trauma;
2. That such cases are extremely rare.

It now remains for us to try to evaluate these two facts in such a way that justice is done both to the employer and the employee. And we should consider how as commissioners, referees, and medical advisers we can help an employee with cancer truly due to trauma to receive the compensation to which he is entitled by law even if he does have an extremely rare condition. On the other hand, as a writer has said in another connection, we should prevent an employee, however sincerely he may believe his own story, from selling his old cancer to his employer.

Segond, who has tried to put this subject on a working basis in France, has postulated five so-called guaranties as follows: (1) The authenticity of the trauma; (2) sufficient importance or severity of the trauma; (3) integrity of the part prior to the injury; (4) correspondence of the tumor to the exact site of the injury; (5) a date of appearance of the tumor not too remote from the time of the accident to be reasonably associated with it. Two others have been suggested: (6) Continuous pathological manifestations, pain, swelling, haematoma, etc., at the site of the injury up to the time of appearance of the tumor; (7) microscopic proof of cancer.

These guaranties need discussion.

The importance of the authenticity of the trauma is obvious. The severity of the trauma is of great importance. It should be demanded as an essential that there was something more than a "bump" which is vaguely remembered and to which little or no attention was paid. The injury must be of sufficient severity to devitalize or at least considerably alter normal tissues. It must be sufficient to cause definite pain, swelling, ecchymosis, more or less impairment of function, etc., conditions which should leave some real scar tissue.

The integrity of the part prior to injury is of course important, but it is a point on which there will rarely be any information except lack of previous symptoms.

The correspondence of the tumor to the exact site of injury is a sine qua non.

The question of the time elapsing between the injury and the tumor symptoms is extremely difficult to adjudicate. Some writers feel that a sarcoma should appear within three weeks to a year, carcinoma six weeks to a year. Most writers have considered that the distal limit should be from two to three years—definite cases, however, are recorded in which carcinoma has developed in well-marked scar tissues or sarcoma in fracture unions after many more years. A time limit, therefore, can hardly be set, and this factor must be weighed with other factors in each individual case.

It does not seem proper to demand continuous pathological manifestations as well-established cases have shown the first tumor evidences even years after the immediate trauma symptoms have subsided.

Microscopic proof is of academic interest but not of much medico-legal importance. All that a referee needs to know is that the claimant has a lump which disables him or may have killed him. Its exact nature is immaterial.
Cases raising the question of single trauma and carcinoma will involve most frequently the skin, second the breast, and third the abdominal or thoracic viscera. It will be best to consider those three sites in a little detail.

1. The skin.—The three cases cited are typical of those that will arise. Fortunately in this country we have little or no cancer classifiable as an occupational disease. In England chimney sweep's cancer is still a factor and mule spinner's cancer in certain textile workers is causing the authorities considerable anxiety. This is caused by constant irritation of the scrotum by oil used in the machinery. Doctor Kennaway, of the London Cancer Hospital, has kindly furnished me with clinical notes and slides of a carcinoma of the right first finger of a man who for a long time was engaged in oil spraying in mosquito work. He habitually kept his first finger on the nozzle of the spraying apparatus to guide it, and the constant irritation of this finger by the oil evidently produced the carcinoma. The theory is, that the greater portion of oil used in England comes from Rumania and contains some specially irritating chemical substance. The Surgeon General informs me that no such case was reported in our canal work. If, as seems to be the tendency, occupational diseases are later to be made compensable, the connection between carcinoma and chronic irritation must be further studied.

In connection with the skin the very definite connection between single trauma and melanocarcinomas must be remembered. Many definite cases have been recorded in which a blow or, more important still, a stab wound or a cut of a pigmented wart or mole have been immediately followed by a rapidly spreading and very fatal form of cancer (melanocarcinoma or melanoma). I think no one who has studied it questions this fact, and when a definite trauma is proved before such an occurrence there is little room for argument. One of the most interesting cases of this kind came under my observation. Mrs. S., 55 years old, had a congenital brown mole over one shoulder blade. She had ridden in motors a great deal for many years with no difficulty. One day she purchased a new car and immediately left her home in northeastern Pennsylvania for a tour in New England. Some point on the back of the seat of the new car rubbed on this mole and when she reached Boston at the end of the second day the mole was bleeding and felt sore and irritated. When she arrived home at the end of two weeks, the mole, which was about 1 inch in diameter, presented over its whole surface an angry, bleeding fungating mass elevated about three-fourths of an inch. A wide excision was at once made. Microscopic examination showed melanocarcinoma. Death occurred five years later from a growth in the stomach. It was never proven whether this growth was a recurrence or an independent stomach carcinoma.

Another phase of skin cancer is concerned with those that develop in scars without any additional trauma. The occasional occurrence of such cases is unquestionable. They occur most frequently in scars of burns but they may occur in any scar. They may occur many years after the burn has healed. The writer has a patient who had a burn on the thigh when 8 years old. A carcinoma developed in this scar at the age of 48. Biegel (quoted in Coley's article from which much in this paper has been extracted) reports a man who at
the age of 74 developed a "cancer" in the scar of a foot amputation done in childhood.

From this it will be seen that any scar may, rarely, develop carcinoma many years after the injury. If the original injury was chargeable to an industry it would seem that such an end result, even if it is fatal, should in justice be charged again to the industrial injury. Unless there are special time limitations in State laws, I can hardly see how such a claim can be opposed if the facts are as outlined.

2. Carcinoma of the breast.—Of the male breast J. B. Murphey has said, "Carcinoma is very frequently the sequence of a mild trauma of single occurrence. * * * It is the only place in the body where this is so." Two years ago the writer made an analysis of records of 418 male breast carcinomas and was much impressed by the frequency with which trauma was alleged as a cause. Some cases are reported of carpenters, shoemakers, and the like where constant pressure of tools has been considered the cause, and these cases must be considered if repeated injury attains the same status in compensation laws as single injury. Further cases have been reported in men in which breast carcinoma has followed blows by base balls, gunshot wounds of the nipple, laceration of the nipple, and a sword thrust, so closely that acknowledgment of the trauma as a cause seems necessary.

The relation of trauma and breast carcinoma in women is more obscure, but with the ever increasing number of women in industry and business it is important. Several surgeons with unusually large experience in breast diseases have recently told the writer that they have seen no breast cancers which they could fairly consider as due to trauma. Lane-Claypon, of the British Ministry of Health, after an elaborate study of 500 breast carcinomas in women compared to 500 noncancerous women concludes that in injuries, both with and without bruising, there is a close association between the injury and the subsequent development of cancer.

Coley (loc. cit.) reports 37 present cases of breast carcinoma and 2 of sarcoma with antecedent injury. A study of the case histories reported by both Lane-Claypon and Coley shows many cases which these authors themselves probably do not consider convincing. However, there are several which should convince any impartial observer that at least it is possible for a single blow to cause breast carcinoma.

Therefore in a breast carcinoma case at litigation the possibility of true relation should be accepted as a general principle and the facts in the individual case should be carefully weighed according to the principles noted by Segond.

3. Injuries to the thoracic and abdominal viscera.—In the thorax the only viscera needing consideration are the lungs. The possibility of external trauma through the bony chest wall, injuring the lung sufficiently to cause trauma seems too remote to need discussion. The alarming increase of primary lung carcinoma in recent years may later be important as an occupational disease in those exposed to gasoline, coal tar, etc.

Injuries to the abdomen are also a very remote possibility as the cause of carcinoma, but they can not be dismissed entirely as in the case of the thorax. They must be considered, if for no other reason than that they are not infrequently brought into court no matter
how grotesque they may be. A German court found for a man who once fell flat on his abdomen on a boat deck. Five years later he developed an intraabdominal cancer. Such an affair belongs more to a comic opera than to a court of justice. In the writer’s experience a man slipped off the step of a switch engine and sprained an ankle so slightly that he did not have to stop work. Some time later he developed a carcinoma of the rectum, for which he solemnly brought suit as caused by the sprained ankle. In the case of another man a rectal cancer in the course of its natural progress perforated and set up a fatal peritonitis. His widow brought suit because a few weeks previously he had slipped on his employer’s floor. Fortunately in both these cases the good sense of Pennsylvania referees ended these affairs, but only after unnecessary waste of time and money by the State, the defendant companies, and the plaintiffs and their lawyers. These cases, of course, should never have gone beyond an honest family physician.

Coley was apparently convinced by an abdominal case as follows: A man aged 35, always well, December, 1909, in a train collision received very severe and extensive contusions, principally of the head, spine, and lumbosacral regions, and was in bed four and one-half weeks. About three months later Coley saw him and found principally marked rigidity of the upper abdomen and loss of 65 pounds in weight. Six months later he showed a loss of 5 more pounds; he was cachectic, emaciated and feeble; upper abdominal rigidity was still present and in addition a tumor in the epigastric region. Death occurred nine months after the injury. Autopsy showed extensive carcinoma involving practically all the abdominal organs, but apparently primary in the liver. (The case never came to trial as the State law forbade a suit for damages “if the next of kin be an alien or nonresident.”)

Even in this case there is of course no definite proof that the accident caused the cancer, but in all human probability it did so, and probably any commission or court would so find and even the doctors should not disagree. So that, even in the abdomen, we should admit a possibility but the evidence should be weighed against the principles of Segond with especial care and rigidity.

Aggravation of a preexisting carcinoma by trauma.—It is accepted without question by scientific medicine that a reasonably severe trauma of any kind applied directly to a carcinoma may aggravate it, make it grow more rapidly, and may hasten a fatality which is inevitable unless curative treatment can intervene.

Supposing that, after a severe blow on a carcinoma, it does grow more rapidly and the patient dies. Both sides to the argument should agree that death was inevitable, but that due to the injury the death occurred several months or years earlier. As I understand it compensation commissions have no power to divide the burden. They have no middle course, but must find either that the death was due to the trauma and award complete compensation for a fatality when it is admitted that the only thing the trauma did was to produce the fatality at an earlier time, the length of which can not possibly be even approximately determined. In other words, the end result is sold to the employer simply because it came quicker. On the other hand, if the commis-
sion feels that the end result should not be sold to the employer, the claim must be dismissed completely. Either decision is bound to work an injustice to one party or the other. It would seem that in such cases the law should allow the commission to reach a compromise decision by which the employer does not have to pay a death claim in full but such smaller amount as seems to the commission fair in view of the facts in each of such special cases.

Coley in his conclusions says, “That a single local injury may cause a carcinoma as well as a sarcoma is no longer open to question.” I hope enough has been said herein to confirm this view and to make it generally accepted as a possibility.

In the face of the equally well demonstrated rarity of such a definite connection the difficulty is properly to evaluate each individual case. A careful comparison of the individual facts to Segond’s postulates should lead to a just decision, and it might be well if they were established by statute as has been done by some States in the similarly vexed question of hernia. The authenticity of the trauma, the severity of the trauma, the prior integrity of the part, and the exact correspondence of the tumor to the site of injury should generally be readily determined.

The time element is one of the most difficult problems and unfortunately one on which the medical adviser may be unable to offer definite help. If a definite tumor is felt at or immediately after the accident it was of course there before. If it is first noticed after two or three weeks the connection becomes more trustworthy. The period of greatest probability may fairly be considered to be one month to two years. However, a definite distal limit can not be fixed, as witness the man of 74 who developed a carcinoma in the scar of an amputation done in childhood. If a visible scar is present or if it is considered proven that a definite thickening or lump remained from the injury to the appearance of the carcinoma, the time element loses considerable of its importance. For instance, we would rarely consider 22 years as within the range of possibility. Yet Lane-Claypon reports the case of a woman who struck her breast against a bedpost in 1900. She was quite sure there was no lump then; a hard painless lump appeared “soon” afterwards. In 1922 the lump began to grow; that is, it developed into carcinoma. If the facts were truly as alleged and if the early lump was at the exact point of injury, it is evident that permanent deep-seated scar tissue formed and became malignant 22 years later and that under these circumstances the blow should fairly be considered as the cause of the carcinoma. Lane-Claypon reports a still more convincing case with an interval of 11 years. I am afraid therefore that the medical profession must agree that it is impossible to set a definite distal time limit.

The Chairman. If there is no objection we will have the papers in order and after all the papers have been delivered then we will have our general discussion, beginning with the first paper.

The next paper we will have is by Doctor Elsberg. This paper will be on “Fractures of the spine and their treatment, amount of disability, and indications for and results of operative interference.” Years ago we thought fractures of the spinal column rather a rare thing, but those of us who have had experience in the compensation
bureau know that they are not at all rare, and from time to time we have had so-called experts come before the commissioners and testify to any and all sorts of terminologies that we were satisfied were not just right. We will be very glad to have Doctor Elsberg give us something in detail relative to these conditions.

Fractures of the Spine and Their Treatment, Amount of Disability, and Indications for and Results of Operative Interference

By Charles A. Elsberg, M. D., professor of neurological surgery, Columbia University, New York City

A few years ago, the writer was asked to give his opinion regarding the percentage of disability in the case of a young man who had fallen from a scaffold some time before and had sustained fractures of the bones of both feet and a fracture of the lower dorsal vertebrae. The bones of the feet had healed in poor position, the feet were deformed so that walking was difficult, and there was considerable weakness of the lower limbs from a spinal-cord injury. The question that I was asked to answer was this: How much of the patient’s disability of locomotion was due to the deformed feet, and how much was due to the fractured spine? The insurance carrier claimed that the greater amount of disability was due to the injury to the bones of the feet (which I believe carried a smaller amount of compensation than would the spinal injury), while the other side had expressed their belief that most of the loss of function was due to the spinal-cord lesion.

This question—and it was a real problem—led me to restudy my cases of fracture of the vertebrae. Some of the conclusions I arrived at then are given to you to-day in what follows. In speaking of the amount of disability that may result from a spinal injury, I shall not give you many figures or statistics, but shall limit myself to an account of some of my personal experiences, and the lessons I have learned from them.

The importance of a fracture of a vertebra depends not so much upon the fracture itself as upon the degree of dislocation of bone or bony fragments and the amount of injury to the spinal cord and nerve roots. The nature and extent of the spinal-cord lesion can and should be determined by a complete neurological examination. Usually, but not always, good stereoscopic X-ray films will disclose the amount of injury to the bones and changes in the size and shape of the vertebral canal.

By means of these two methods of examination, conclusions can be arrived at (1) whether there are signs of a complete transverse lesion of the cord; (2) whether at the affected level only a part of the cord has been injured, and if so, what fiber tracts have been involved; (3) how many of the spinal-cord symptoms are due to a haematomyelia—a gross hemorrhage into the cord; (4) how much is due to pressure by fractured or dislocated bone or by distortion of the vertebral canal.

In this connection, one must always remember that, after a trauma to the vertebrae, the X-ray examination may be entirely negative,
and yet the patient may have a most serious cord lesion. On the other hand, it is not at all unusual for the X ray to show a very marked fracture and dislocation of bone in an individual who has few or no signs or symptoms of injury to the spinal cord or nerve roots.

Fractures of Spinous or Transverse Processes of the Vertebrae

It is surprising how often the X-ray examination will reveal a fracture of a spinous or a transverse process in an individual who has only slight pain and stiffness of the back after a muscular strain or a slight trauma to the back. The pain and stiffness may be so slight that the patient is able to continue his work and medical aid may be sought only after a number of weeks have passed, but more often he is incapacitated for a few weeks, and sometimes for a longer period.

An X ray taken years after the injury may show the spinous or transverse process still ununited by bone to the vertebra. The mere fact, therefore, of the X-ray finding of such a fracture is not proof positive that an injury that was recently sustained was the cause of the fracture found at the X-ray examination.

These slighter injuries to the bones of the vertebral column would hardly require consideration in this paper, were it not for the fact that trauma is believed to be an important etiological factor in a number of more or less diffuse diseases of the spinal cord. We do not know how often a slight injury to the back may cause a minute hemorrhage or other microscopic change which may give no spinal-cord symptoms but which may be followed years later by a slowly progressive spinal-cord disease.

Such a result may be rare, but its possibility must be kept in mind, and this has led, not infrequently, to litigation in the courts.

Injuries to the Spinal Cord, With or Without Demonstrable Evidence on the X Ray of Fracture of the Spine

A trauma may be immediately followed by slight or by marked symptoms and signs of a spinal-cord lesion, although the X ray does not show any fracture or dislocation of bone. The spinal-cord symptoms may be due entirely to “concussion,” which is a real entity, and in which there are minute hemorrhages into the cord tissue. On the other hand, a fracture may not be seen on the X ray although it is found at an operation or a post-mortem examination.

In many instances, the injury to the structures within the vertebral canal was caused at the time of the impact of the force, which caused an overstretching or rupture of ligaments and a momentary dislocation of a vertebra which then slips back into its normal position.

If the cord has been only slightly injured the symptoms due to loss of motor and sensory power may be only slightly marked; but, if the cord has been crushed in its complete transverse diameter, there is at once a loss of all motor power, all sensation, of the reflexes below the level of the lesion, and with it a loss of the functions of the bladder and bowels.

The statement just made would make it appear as if it were easy to distinguish at once between a complete crush of the spinal cord
at a certain level and a partial injury. This is often not the case. Not so rarely, after a concussion of the cord all power and all reflexes and the control over bladder and rectum are lost for a number of days; and in hematomyelia (a bleeding into the substance of the cord) the same symptoms may exist for days or weeks.

From the standpoint of operative treatment it is important to appreciate this. Because it has often not been appreciated, one reads of patients “with a complete transverse lesion of the spinal cord” who were “improved” or “cured” by operation. The spinal cord tissues can not regenerate; and, if a patient has a complete crush of the cord, the condition is always an irremediable one.

Many of those suffering from concussion of the spine or from a traumatic hematomyelia recover to a great extent without any operation at all.

How then, in an individual in whom no gross evidence of a fracture of the spine exists and who has after his injury the signs of a complete transverse lesion of his spinal cord, can one determine whether or not the injury has affected the entire thickness of the cord? Only by waiting and by daily repeated careful examinations.

The patient with the signs of a complete transverse lesion—loss of all power, loss of all sensation, loss of reflexes, loss of control of the bladder and bowels—will have one purely spinal reflex left. If the examiner scratches the sole of either foot there will be a plantar flexion of the large toe. If this plantar flexion of the large toe can be elicited for more than about two weeks, with the persistent loss of everything else, the injury to the spinal cord is almost certainly irremediable. If, on the other hand, within the first few weeks, scratching the sole of the foot causes a dorsal extension of the large toe—the so-called Babinski sign—then one may conclude that the patient did not actually have a complete transverse lesion, although he had at first the clinical signs characteristic of such a lesion.

Patients with the symptoms of a complete transverse lesion have sometimes been subjected to operation because of the belief that the pressure of blood in the vertebral canal might be enough to cause the symptoms. As the pressure in the spinal blood vessels is never high enough to cause much compression of the spinal cord, such a view is erroneous, and there is never any justification for an operation to relieve such a presumed compression by blood clots.

It was once generally believed that after a complete transverse crush of the spinal cord the ensuing flaccid paralysis and loss of reflexes were permanent. We now know that, excepting in injury to the lumbosacral cord and roots of the cauda equina, after a number of months the lower limbs become spastic, and exaggerated knee jerks, ankle clonus, and “Babinski” can again be elicited. “Mass” reflexes occur, by which the lower limbs are drawn up to the body, and these have sometimes been mistaken for voluntary movements of the limbs. But there is never any return of real voluntary motor power, never any return of sensation, never any return of voluntary control of the bladder, although the bladder may empty itself automatically on the least irritation, such as might occur while the patient is being placed upon a bedpan. All these signs are the result of the return of automatic activity of the spinal cord below the affected level. I know of a number of instances in
which patients were subjected to operation at this stage, because it was erroneously believed that the cord lesion was not complete and therefore irremediable.

The patient with hematomyelia as a result of trauma to the vertebrae may first present the signs of a complete transverse lesion and then may begin to improve so that finally (sometimes only after one to two years) he has regained a great deal of control over his limbs and much sensation has returned. Unfortunately, however, if control of the bladder and rectum does not reappear within the first few months, it will rarely return at all.

The patient who after a spinal injury has only the signs of an injury to part of his cord may recover completely. Usually, however, some weakness or stiffness of a limb or limbs, some disturbance of sensation, persists and some atrophy of muscles may follow. The patient may apparently have good use of his limbs, but a neurological examination will always show that there are disturbances that have remained.

In this connection it is important also to remember that a patient may have sustained an injury to the lower lumbar vertebrae and may have little or no loss of power in the lower limbs, possibly a drop-foot on one side and a little disturbance of sensation, perhaps only over the buttocks and around the arms, and may have had an irremediable crushing of the lower roots of the cauda equina which will leave him with a loss of good control of the bladder for the remainder of his days.

Fractures and Dislocations of the Spine With Gross or X-Ray Evidence of the Bony Injury

The most frequent gross deformities that are seen are a gibbus—a prominence of one or more spinous processes especially in the thoracic or lumbar regions. In the cervical region the position of the head and neck often changes, so that the head sinks forward and somewhat downward. X-ray films may show a forward or backward dislocation of the body of a vertebra or part of a vertebra, a crushing of one body, so that the body is of triangular shape on lateral X-ray and is much thinner on films taken anteroposteriorly.

Fractures of the odontoid process of the axis were once considered accidents which were regularly fatal, but I have seen four cases in which the X-ray showed a fracture of the odontoid but in which the patient had practically no symptoms or disturbances excepting a stiffness of the neck.

In fractures or fracture dislocations of the cervical vertebrae, there may be a great amount of deformity of the vertebrae with but few symptoms.

On the other hand, on account of the great amount of mobility of the cervical vertebrae, a complete crush of part of the cervical cord is very frequent, especially after diving and automobile accidents.

Immediate Prognosis in Fresh Fractures and Dislocations of the Spine With Cord Injury

In my experience, 9 out of every 10 patients with the signs and symptoms of a complete crush of the cervical cord actually have a complete transverse lesion, and in these the immediate prognosis is
almost always a poor one. Many, if they do not die from the shock of the injury or of lesions in other parts of the body, begin to have intermittent fever within the first few days. When this fever is not due to an acute infection of the bladder or to a pulmonary complication, it is probable that the patient has an advancing myelomalacia and that symptoms of involvement of the medulla with paralysis of respiration will soon occur. Patients with a complete transverse lesion may, however, remain alive for many months or for several years before they succumb to exhaustion, to chronic infection from bedsores, or from infections of the bladder and kidneys.

Some patients have, at first, only the signs of a partial lesion of the cord, but after a few days, due to a secondary softening, they develop the symptoms and signs of a complete transverse cord lesion.

Others, who had at first the evidence of a complete transverse lesion, begin to improve after a few days or weeks and the recovery may be considered. These patients had the symptoms of but did not actually have a complete transverse lesion.

Prognosis of Injuries of the Spine and Spinal Cord With Special Reference to Disability and Earning Capacity

The patient with a complete transverse lesion of the cord, if he lives for any length of time, is fully incapacitated from work for the remainder of his or her life.

The patient with a fracture of the lower dorsal vertebrae and a marked lesion of the lumbosacral cord, may live for years, but the diminution of power in the lower extremities, and especially the total or partial loss of control of the vesical and rectal functions, makes him in the majority of instances useless as far as earning capacity is concerned.

The individual who sustained a fracture of one of the lumbar vertebrae with complete crush of the roots of the cauda equina may live for many years, but his earning capacity is always greatly reduced, both by the diminution in the power of the lower limbs and by the bladder and bowel disturbances.

The patient with a partial injury to any part of the spinal cord may recover so much of the function that has been lost that he is able to resume his full earning capacity. While it is impossible to make any categorical statement on this subject, because so much will depend upon the amount of injury to the cord, one may say that a reduction of earning capacity occurs in at least 60 to 70 per cent of the patients, due either to a remaining weakness and a secondary atrophy of an upper extremity or of both upper and lower limbs, to persistent bladder disturbances, to secondary deformities, etc.

The main amount of improvement after a spinal-cord injury will occur within the first six months, and little functional improvement will occur after about one year has passed.

After the maximum amount of improvement has occurred, some patients begin to develop increasing signs of cord involvement, which may be due either to secondary degenerative changes in the spinal cord itself which are irremediable, or to changes in the affected vertebrae from new bone formation which may be greatly improved by operative interference.
Finally, as has been already mentioned in the remarks on fracture of the spinous or transverse processes, any individual who has sustained a vertebral trauma without cord symptoms or with such symptoms with complete recovery, may in later years develop a progressive degenerative spinal-cord disease.

Statistics of the end results of spinal injuries must always be accepted with some reservation, for in most instances facts regarding the final condition of patients reported as "improved" are not given. Frazier, in his collection of a large series of cases from the literature, especially mentions this.

**Prognosis of 228 cases of fracture (Frazier)**

<table>
<thead>
<tr>
<th>End result</th>
<th>Complete transverse lesion</th>
<th>Partial lesion</th>
<th>Root involvement of root or cord</th>
<th>Not stated</th>
<th>Total</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery</td>
<td>0</td>
<td>15</td>
<td>5</td>
<td>1</td>
<td>45</td>
<td>21.0</td>
</tr>
<tr>
<td>Improved</td>
<td>9</td>
<td>25</td>
<td>5</td>
<td>2</td>
<td>57</td>
<td>27.3</td>
</tr>
<tr>
<td>Unimproved</td>
<td>11</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>14</td>
<td>6.1</td>
</tr>
<tr>
<td>Immediate death</td>
<td>17</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>22</td>
<td>9.6</td>
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<tr>
<td>Subsequent death</td>
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<td>12</td>
<td>0</td>
<td>2</td>
<td>38</td>
<td>16.7</td>
</tr>
<tr>
<td>Not stated</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>14</td>
<td>21</td>
<td>9.3</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>62</td>
<td>13</td>
<td>85</td>
<td>228</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The general statement, the higher the lesion the more grave the prognosis, is to a certain extent true, and this is borne out in most of the statistical tables. For the reasons already given, the percentage of immediate and later deaths is probably larger than would appear from Frazier's collected series.

In 25 personal cases followed up by Frazier, the earning capacity was unaffected in 7, was reduced in 7, and was lost in 11. Thus, complete disability occurred in 44 per cent of the patients that this author was able to trace.

The figures of some of my own experiences show the following: In 18 of 22 patients with complete transverse lesions of the cord, death occurred within six weeks of the time of the injury. Four patients lived for periods of one to three years, totally incapacitated. Of 22 patients with incomplete cord lesions, 12 recovered to such an extent that they were able to return to their usual activities, 6 were able to do a certain amount of work, and 4 were totally incapacitated. Of 4 cases of spinal trauma with hæmatomyelia, 1 patient died within two months, 1 succumbed to complications about two years after the injury, 1 recovered a great deal of power but vesical and rectal control did not return and he was unable to return to work, and 1 recovered almost completely.

**Indications for Treatment in Fractures of the Spine, and Influence of Operative Treatment Upon Subsequent Course of Symptoms**

Patients with fresh fractures of the spine with cord and root symptoms should rarely be subjected to operative interference. If a patient has a complete transverse lesion of the cord, operative interference can do no good, and if the signs are those of a complete trans-
verse lesion but the patient has not a complete lesion, there is no harm in waiting. The claim so often made, that if the patient has a complete crush of the cord, the operation can do no harm as the condition is hopeless anyway, and if the patient has not a complete lesion, the operation may do good, is fallacious and should be abandoned. I have already indicated to you that possible pressure from effused blood never justifies an operative interference.

The only patients with a fresh fracture of the spine in whom operative interference might be indicated, are those in whom with the symptoms of a partial loss of function, there is evidence on the X-ray films of a marked deformity of the spinal canal with pressure upon the spinal cord by dislocated bone or bone fragments, and, only very rarely, the patients in whom there are severe root pains from pressure of dislocated bone upon one or more sensory roots. That the latter condition is very unusual is shown by the fact that in the not inconsiderable number of cases of fracture of the spine that I have seen in the last 20 years there was only one case of an incomplete cord lesion in which the severity of the root pain was in indication for surgical interference.

Only very occasionally (I believe in not more than 1 to 2 per cent of patients with incomplete cord symptoms) does the X-ray show so marked a deformity of the spinal canal that immediate operation is imperative.

In the large majority of instances it is advisable to wait, for the patient can be operated upon one or two weeks later if there be an indication for operation, with a better chance of benefit than immediately after the injury has been sustained.

It is my firm belief, therefore, that only exceptionally should the surgeon interfere early after a fracture of the spine, and a waiting policy is indicated in almost all of the patients.

The nonoperative treatment is of very great importance and is mainly a nursing problem—the prevention of bedsores, the care of the bladder and bowels, etc. The patient should always be placed upon a water or an air mattress and the greatest care be taken that the back, especially over the sacral region, the heels, and hips are protected against pressure.

The smallest suspicion of redness in any of these regions calls for the most careful treatment. If the patient is incontinent, the greatest care should be taken that the skin around the buttocks and genital regions does not become irritated from the moisture or the soiling of the bedclothes. One should always make certain that an apparent incontinence is not really an overflow of a distended bladder. If there is retention, the bladder should be emptied at regular intervals by catheter. The strictest asepsis in every detail can in many cases not prevent cystitis and its complications. The bladder should be washed out every day with a bland solution—after the urine has been evacuated.

Immobilization of the spine is rarely necessary excepting in the cervical region, where a posterior padded splint or plaster of Paris may be useful. In many instances it is sufficient, even in fractures of the cervical vertebrae, to support the head on each side by a sand pillow. When necessary the patient should be moved or turned always with the greatest of care.
After several weeks, careful massage of the affected limbs should be begun perhaps with other mechanico and electro therapeutic methods.

If after an injury to the vertebral column a diagnosis of traumatic haematomyelitis is made, operation is never indicated.

In which patients is there a justification for operation, at a later stage; i.e. months or years after the injury?

While each case must be considered by itself, the following statements can be made:

1. Operation may be of benefit a few months after the injury in patients with persistent spinal symptoms in whom the X ray shows more or less marked angulation or deformity of the vertebral canal. In these patients, a wide decompressive laminectomy may allow the cord to bulge backward and thus an acute angulation of the cord be relieved. I have in some instances seen a great deal of improvement follow such a decompressive operation.

2. Operative interference is indicated in those patients in whom there has occurred, months or years after the vertebral trauma, so great a production of new-formed bone, visible on the X-ray films, that the patients have progressive signs of interference with the functions of the spinal cord due to the increasing pressure of the new-formed bones. In the writer’s experience there were several cases in which the patients were very greatly improved by the operation at which the new-formed bone was removed and a wide decompressive laminectomy performed.

3. In a few patients there is persistent pain due to adhesions between the membranes and scar tissue around sensory roots, even though the X-ray examination fails to show any bony abnormality. Some of these patients have so much pain that an operation becomes imperative, if they are not to become drug habitués. In some of them pain may be relieved and spinal symptoms improved after the division of adhesions and of constricting bands. But one can never promise the patient certain relief from the decompressive laminectomy and the division of adhesions.

Occasionally, when the root pain is strictly limited to one or two sensory roots, a laminectomy and division of the affected root may give complete relief.

Where pain is the most disturbing symptom and is persistent and very severe complete relief may follow a laminectomy and division of the anterolateral tracts of the spinal cord. These tracts transmit the sensations of pain and of temperature, and after an anterolateral tract division sensibility to pain and to hot and cold is lost below the level at which the tracts were divided.

4. Occasionally, after a fracture of the spine with injury to the spinal cord, a persistent spasticity of the lower limbs prevents locomotion, although there is good motor power. Such a patient can be put upon his feet again by the division of the proper posterior roots. This operation, based upon the investigations of Foerster, is now rarely performed, but it is a very useful operation in some of these patients with persistent spasticity of the lower limbs after a spinal injury.

5. In rare instances, in patients with traumatic haematomyelia, in whom marked symptoms persist or in whom, many months after the
FIGURE A.—ANGULATION OF THE DURA AND CORD AFTER FRACTURE OF THE SPINE (DIAGRAMMATIC)
FIGURE C.—APPEARANCE OF CORD AT LEVEL OF OLD TRANSVERSE CORD LESION
FIGURE D.—FRACTURE OF THE TRANSVERSE PROCESSES OF ONE SIDE OF THE FIRST, SECOND, THIRD, AND FOURTH LUMBAR VERTEBRAE FROM MUSCULAR VIOLENCE

100-4
FIGURE E.—CRUSHING FRACTURE OF THE SEVENTH CERVICAL VERTEBRA DUE TO AUTOMOBILE ACCIDENT WITH MARKED ANGULATION OF VERTEBRAL CANAL.
injury, an advance of symptoms occurs which is probably due to an increase of fluid in a cord cavity, a laminectomy with incision of the cord and evacuation of the fluid will be followed by a marked improvement in the power of the lower limbs. I have twice seen great benefit from such an operation, although in both instances the bladder incontinence was not improved.

[Doctor Elsberg showed lantern slides illustrating his paper. See Figures A, B, C, D, and E.]

The Chairman. The commissioners who are serving for the State of New Jersey will tell you that some of their greatest trials and tribulations are in connection with cases where the traumatized individual alleges an accentuation of a chronic disease. These chronic diseases include cancer, diabetes, arthritis, heart disease, tuberculosis, appendicitis, and the Lord knows what. The rule has been, if we believe that there has been an accentuation, to award a certain amount of compensation.

I think Doctor Jaffin has one of the hardest subjects to deal with, and he will now present his paper to you.

Doctor Jaffin. I want to say first that in dealing with this topic in general it is necessary to bear one thing in mind, that we are going to talk about the relationship of trauma, not to the etiology of disease, but only to the accentuation of the disease. It has been difficult, even for the writer, to divorce the two aspects of the subject, and I want to emphasize this before I go further, because in the discussion it is almost impossible sometimes, in speaking of various diseases, to keep this factor in mind.

Traumatic Accentuation of Chronic Disease

By Abraham E. Jaffin, M. D., attending physician Jersey City (N. J.) Hospital

The discussion of a subject so comprehensive in its scope as traumatic accentuation of chronic disease can hardly be undertaken in great detail within the limits of any paper to be presented before this meeting. Because of its ever-increasing importance, however, both from a scientific, as well as from a medicolegal aspect, its present status is well worth investigating and its future value established by a more careful study and follow-up of all cases in question.

In this country, little study has been made of the effects of trauma on preexisting diseases, while abroad there is already a considerable literature on the subject. Most of the facts and observations, however, must be gleaned from records of experiences with trauma in general. The usual point of view has been that of the trauma causing the disease, rather than the study of its actual relationship in accentuating previously existing disorders.

The difficulties facing the writer attempting to present this subject to an audience composed, as this is, of men with larger personal experience than the writer, are apparent. Few men, however, can have opportunity enough in their own lifetime from which to draw very extensive conclusions. It may be possible, then, to present a brief survey of the subject from as many sources as possible within the limited time at our disposal. These are mainly from such works, papers, reports, personal communications, and experiences as are
available. A few conclusions from these sources may then be estab-
lished. Of equal importance, however, if not more so, would be the
stimulation of further observations along this line.

The subject is a very difficult one. It requires full, broad, and
open-minded study of all of the facts in any given case. The great-
est care is necessary in weighing the evidence fairly. In a general
way we may assume that an individual may be the subject of disease
as manifested by defective function of pathological changes without
subjective or objective evidence for some time. Examples of this
are common enough in tuberculosis, lues, early cardiovascular
disease, notably coronary sclerosis and aneurism, diabetes, etc.

Such an individual, accustomed to a certain reasonable daily
routine, may go on for a long time performing satisfactorily his
daily duties in spite of the slowly progressive processes above men-
tioned. It is evident, however, that such an individual is a subject
diminished resistance or stamina and will react differently to
shock or trauma, either of which would obviously lower his resistance
still further. This trauma need not be as much as would be neces-
sary seriously to affect a normal individual. This is a most important
point to be considered in estimating the relationship between the
degree of trauma and its consequences. The body that is the seat
of a preexisting disease, lacking the compensating resistance, reserve,
and recuperative power of the normal individual, will naturally
suffer more and longer and even permanently from a trauma that
might cause a normal individual little or only temporary disability.

What, then, are the factors of greatest importance in so far as the
individual's resistance to trauma is concerned? They are: First,
normal vasomotor tone; second, normal blood; third, good nutrition.
All of these are most essential in providing normal resistance. Ob-
vously, then, an individual suffering impairment of any of these,
will not only suffer greater disability from trauma, but also be
apt to suffer aggravation of the preexisting processes responsible for
the lowered resistance.

Obviously, trauma with or without any degree of shock will tend to
lower the vasomotor tone by a fall in blood pressure, and in other
ways lower the body resistance, so as to favor the activation of any
preexisting disease. The loss of blood is, of course, a very impor-
tant additional factor.

It is very apparent, therefore, from an industrial aspect, I might
say at this point, that when an unhealthy worker is engaged on an
equal basis with an able-bodied individual, the former's susceptibility
to disability from an accident is an increased liability to the employer
or insurance carrier. A knowledge of the employee's handicaps in
the beginning would be to mutual advantage in the end.

The periodic health examination is the best example of the frequent
discovery of various functional and organic disorders unknown to the
individual. This system has for a long time been in practice by
organizations employing large numbers of workers, with excellent
results to both sides. From the employee's side we have the benefits
of preventive medicine and for the employer an economy that more
than compensates for the cost of the medical services required.

A consideration of the influence of trauma in accentuating disease
must include some analysis of the different mechanisms of the body
and their resisting powers. We are chiefly interested in the question of what diseases are most likely to be aggravated by trauma, and how long after trauma the latter influence may still be effective. The time element is a most important item, and it is necessary to have some accepted period of time within which the connection between the trauma and its effects may be established under various circumstances in various conditions.

From what has already been said about lowered resistance, etc., we may at once take up the more common chronic constitutional diseases and summarize certain conclusions that past experience may have established. To date, there is hardly any doubt that the largest number of problems with reference to the question to be discussed comes up in connection with two of the most common, and therefore the most important, diseases; namely, tuberculosis and syphilis. Further on, I will refer to a number of other important, though less frequent, diseases and conditions.

**Tuberculosis**

While there are many widely diverging opinions on the question of injury as a factor in extra thoracic tuberculosis, most authors are in agreement on the influence of trauma in aggravating pre-existing phthisis. So positive are some that they state, "for medico-legal purposes, active tuberculosis following an injury should be considered a valid cause for claims for damages when an attempt is made to determine the responsibility. (Fishberg, 1922.)"

Quoting Dr. Percy Kidd: "We find the occurrence of phthisis in connection with trauma may be due to laceration or contusion of the lung and infiltration of its tissues with blood or inflammatory products favoring the entrance and germination of the tubercle bacilli, which are more or less ubiquitous. From the rapidity with which pulmonary symptoms appear in most of the cases, it seems more reasonable to suppose that injury to the chest wall may rouse into activity some latent tuberculous focus, probably by laceration or loosening of its fibrous capsule."

In one or two instances, when the patient gave a history of injury to one side of the chest, the physical signs of the disease were confined to the opposite side.

F. Parkes Weber arranges possible traumatic tuberculosis in three groups: (1) Definite trauma of some kind, injury by accident, surgical manipulation, etc., followed either by acute generalized tuberculosis, with death in a month or two, or by metastatic localized tuberculosis in parts removed from the seat of injury; (2) signs of pulmonary tuberculosis first noticed after a supposed injury to the lungs; this condition he thinks is rare; (3) instances in which injury to bones or joints or other parts than the lungs is followed by tuberculosis more or less localized to the seat of injury.

His conclusions on the matter are that it must always be difficult and doubtful to decide what part has been played by the trauma in any particular case of alleged traumatic tuberculosis. Searching questions must be asked: (1) Did the injury merely accelerate the progress of lung tuberculosis? (2) What were the possible extent, distribution, and activity of the original tuberculous lesion at the
time of injury? (3) Was there any clinical evidence that the patient was actually tuberculous at the time of the injury?

Brockbank, of Manchester, believes that a severe contusion of the chest, without actual injury to the pleura or lungs, might depress vitality in a person with bad tuberculous heredity so much that the tubercle bacilli which had previously just failed to get a hold in the lungs were thereby enabled to do so. He had one man under his care in the hospital who died from miliary tuberculosis which developed within a few weeks after a bad crush to his chest, and which he thought was brought on by the accident.

Ritter, also, argues that shock as well as trauma may lower vitality so that latent tuberculosis germs may change tuberculous infection to tuberculous disease. However, shock in this sense is to be considered only such as would follow trauma. Tuberculosis may develop then in tissue free of germs at the time of the injury, but invaded later through the blood stream. Frequently tuberculosis, when accentuated by trauma, becomes rapidly fatal. A number of examples are sighted such as injury to a tuberculous testicle or operations in connection with gynecological tuberculosis having been followed by a general miliary infection.

Barnett believes that bad results following accident are more marked in a tuberculous subject than in any other. If the case be one of pulmonary tuberculosis, the general resisting power is lowered; the same is true to a less extent when tuberculosis of other organs is present. If tubercular disease of bone or joint be the form the disease has taken, although the general health may be fairly good at present, an accident to the affected part will much accelerate the pathological condition.

Magruder, in a very comprehensive discussion in this connection, also agrees that traumatism in those already tubercular may be the means of localizing the lesion or facilitating the dissemination of the disease throughout various organs and tissues of the body. Damage to the tissues lowers the resistance of the injured part of the body and invites local infection, while shock to the nervous system and the enforced confinement after certain accidents, often among bad hygienic surroundings, act still further by depressing the general health and promoting infection. The duration of the time between the reception of the injury and the first evidence of the development should in all cases be considered.

According to Fishberg, the appearance of clinical symptoms of phthisis may be delayed for some time, of course, in quiescent lesions, which are activated as a result of traumatism. The aggravation of the condition in the chest or the extension of the process may appear some time after the accident, and hæmoptysis may appear even immediately. But in apparently healthy persons the symptoms may appear many months or years later. Hawes mentions several cases in which phthisis developed 2 to 10 years after injury, and Fishberg agrees with him. It takes about eight weeks for a tubercle to develop, and one tubercle is by far not enough to give symptoms or signs by which it can be recognized by the physician. In fact, when a few days after an injury signs of phthisis are found, especially when tubercle bacilli are found in the sputum, we may conclude that we are dealing with a preexisting disease, which was, at most, aggra-
vated by the accident. But in cases in which the symptoms, such as fever, emaciation, cough, and expectoration, etc., make their appearance three to six months after the injury in a person known to have been well before the accident, and the physical signs appear even later, it is clear that there was a causative relationship between the injury and the disease.

German authorities have limited the time for the appearance of the symptoms to six months, although there are undoubtedly exceptions which must be judged on individual merits. The United States set a 3-year period for compensation for tuberculosis incurred in line of duty during the war. It is also pointed out by this author that many, if not most, persons harboring latent or healed tuberculous foci with virulent tubercle bacilli may suffer reactivation of the process after an injury. Severe injuries to the chest have been known to heal in normal individuals even when complicated by pneumothorax and hæmorrhax. But in those with preexisting lesions of the lung, active or dormant, the subsequent course is apt to be quite different. The intensity of the injury is no criterion of the probability of its relationship to the phthisis, subsequently developed. As pointed out by Wolff-Eisner, tuberculous osteomyelitis after violent bone injury is rarely observed, while after slight injury to bones local tuberculosis has frequently been noted. Similarly slight injury to the chest may flare up a latent process. This is not an uncommon experience in persons thought to be healthy. John B. Hawes points to development of consumption in football players after the autumn season from injury received on the field. In this connection it is worth noting that the special diet usually prescribed by the trainer, as well as the excessive exercise for months during the training period, undoubtedly reduces the resisting power of even gridiron heroes.

Most authors agree that the site of the lesion is not necessary at the point affected by the blow. This has already been referred to.

It is pointed out that hæmoptysis is not absolutely essential to establish the relationship between the injury and phthisis, because laceration of the lungs may occur without causing hemorrhage. When hæmoptysis occurs and a quantity of blood is expelled, it is no criterion of the size of the torn vessel, nor must there remain any external marks on the chest wall, because an injury may lacerate the lung or pleura without leaving any external traces.

The dissemination of the infection from the breaking up of a latent lesion through trauma has already been mentioned. There is an agreement among authorities that the effect of trauma on pulmonary tuberculosis is in true proportion to the extent of activity of the preexisting process.

While not bearing truly on the subject, it is well worth noting in passing the frequency with which active pulmonary tuberculosis has been observed to follow surgical operation; this, too, is naturally another form of trauma. I have personally observed at our clinic a number of patients referred for pulmonary tuberculosis shortly after surgical operation such as tonsillectomy, herniotomy, chronic appendix, etc. This observation has been confirmed by many authors.

Baldwin and his associates also called attention to the direct connection between injury, contusion, or blow, and outbreaks of tuberculosis. They also refer to the frequency of tuberculosis within
few weeks after surgical operation. Meningitis has been observed after severe contusion of the brain.

According to Magruder:

A study of cases in literature in which the connection between injury to the chest wall and development of tuberculosis of the lungs appears very close seems to indicate that the disease occurs more frequently after contusion and slight injury to the chest than after fractures of the ribs or penetrating wounds of the chest wall. In spite of this fact in 159 individuals who received penetrating wounds of the chest wall, Deme showed that 17 died some time afterward of pulmonary phthisis. English estimates that over 48 per cent of injured persons who develop traumatic pneumonia and subsequently recover, as a result of the injury and pneumonia fell victim later to pulmonary phthisis. Weiner, in an analysis of statistics in 456 cases of phthisis pulmonitis, found clear evidence of trauma in 8 per cent. In a record of 238 cases of individuals suffering from pulmonary consumption, Lenigen found that 28 gave a clear history of traumatism and in but one of those was tuberculosis in evidence before the injury. Mendelsohn reports 9 cases which, without fractures of the ribs or laceration of the lung, developed tuberculous pneumonia shortly after contusion of the chest. Speltont, in a report of 56 cases in which traumatism of the lung had been followed by pneumonia, found that tuberculosis infection had subsequently taken place in the exact area of the lung tissue which had been the seat of the preceding traumatic pneumonia. Accidents in which an individual falls a great distance or is badly shaken up and receives injuries, not necessarily of the chest wall, may, by tearing loose some preexisting adhesions of the pleura, excite an active tubercular pleurisy.

Fairchild says:

Some authorities believe, though, that in those cases where pulmonary tuberculosis develops two or three months after all constitutional and local symptoms have subsided, it can not be assumed that the accident is the cause of the disease.

Tuberculosis of Bony Structures

In Calmette's recent work on Tubercle Bacillus Infection there is apparently no discussion of trauma with reference to pulmonary tuberculosis, but he does discuss some contradictory experiments by various foreign investigators on the relationship of trauma to bone and joint tuberculosis. With reference to the latter, I would quote the following:

On many occasions attention has been called to the influence of traumatism, particularly during the period of skeletal growth, as prompting the localization of tuberculosis in bone or joints. Some time ago, Max Schuller tried to demonstrate this and performed certain experiments about which there was some commotion. After having infected his animals, he submitted them to various traumatisms and observed tuberculous osteoarthritis develop at the points of injury. Noninfected animals, on the other hand, although subjected to similar traumatism, exhibited only a hemorrhosis, which cured spontaneously.

These experiments of Schuller were later repeated with more perfect technique and quite different results by Lannelongue and Archard (Internat. Congr. on Tuberc., Berlin, 1899), by Friedrich (Munchen. med. Wechsler (1899), 46:1313) Honsell, (Ibid. (1900), 47:1381), Fr. von Friedlander, and others, so that at the present time surgeons are rather of the opinion that the role of traumatism in the generation of bone and joint tuberculosis is relatively limited.

Meningitis may follow injury to or operation upon tuberculous joints or other foci of tuberculosis. In these cases, the injury is the determining factor.

The influence of trauma on the development of bone tuberculosis already the seat of early or quiescent disease is the same as in other localities produc-
ing a focus of low resistance, in which area of depression, the inflamed tissues are easily infected by bacilli coincidentally set free from some pre-existing tubercular gland or other lesion. (Magruder, p. 22.)

Syphilis

Syphilis is another disease in which trauma often plays a very important rôle in aggravating or accentuating a latent infection or process into one definitely active and progressive.

Stokes considers it "simply another expression of the tendency of disease to take advantage of lowered tissue and general resistance. In fact, it was an axiom of the older syphilitologists that one might always find latent or concealed syphilis becoming outspoken at a locus minoris resistentiae. He refers to numerous examples of gummatous changes in war wounds during the late war. Gumma of the testes following trauma and delay or nonunion of fractures are also known to be at times due to gummatous changes." He quotes Klau-der, who describes cases in which the Wassermann reaction became positive after trauma although repeatedly negative before. "Lan-douzy's case of an army officer who, after 25 years of latent syphilis, developed an osteitis following a fall from his horse is typical of a considerable series. Injury to the head has long been thought to be the starting point of clinical manifestations of paresis in certain patients, although such observations are not above criticism. * * *
The traumatic influence may, as Gougerot and Clara point out, follow every type of injury mild or severe, sudden or prolonged, single or repeated. Bone changes and soft-tissue gummas furnish the best examples. It has been noticeable in my experience that trauma is by no means an invariable excitant of gummatous changes, even in supposedly eligible subjects. In fact, if surgical injury is a fair example of physical trauma, the incidence of gummatous manifestations in patients with late syphilis is very small, provided the gumma previously present is not operated upon or traumatized. The reaction of gummas that have been operated upon or traumatized is immediate and disconcerting, a rapid and destructive extension and prolongation of the process being the almost invariable result. The importance of these issues for industrial medicine and workingmen's compensation is apparent. There is an unpredictability about the response of the tissues of a syphilitic person to trauma which, while it permits many to escape, always brings down disaster on the wrong head."

Heavy physical exertion is definitely recognized as predisposing to aneurism.

Stokes further reports in detail many examples of the effect of trauma in producing a flare-up of a quiescent syphilis at the point of lowered resistance. So much is he impressed with the importance of this connection that he emphasizes the following: Whenever unfavorable reaction to injury is out of all proportion to the gravity of the injury or the seriousness of the exciting cause, suspect syphilis, especially if the onset of reaction symptoms is delayed.

Subjects with hereditary syphilis will be prone to show prolonged convalescence mainly after injury to the nervous system such as con-
cussion of the spine; the hereditary syphilitic is often the subject of neurasthenia, hysteria, or of a general nerve degeneration and so is a bad subject for such accident. (Barnett, p. 92, 1910.)

Magruder quotes Ravogli (Syphilis in Its Medical, Medicolegal, and Sociological Aspect, 1907) with reference to the increased fragility of the bones in syphilis and the liability of fracture at the site of the gummata. Also bone lesions have been observed to develop in luetics in regions subjected to prolonged irritation. With reference to the relationship between trauma and the appearance of gumma, Schepelman believes that if the evidence appears later than six months, one may deny the claim, because the injury caused by the trauma has healed to such an extent that locus minoris resistentiae no longer exists.

Malignancy

We are, of course, not interested in the debatable point as to whether trauma is an etiological factor in malignancy. When we come to the subject, however, of aggravation or accentuation of the same, we find opinions strongly in favor of the latter.

Mock and Ellis submitted the following for the consideration of courts of law, compensation boards, etc.:

A preexistent malignant tumor may be aggravated or accelerated in its growth by a trauma; the trauma may be the first factor to call the patient's attention to the tumor. Treatment should be instituted at once to eradicate the tumor or at least to prolong the patient's life. Under our present laws which provide for compensation in case of aggravation of an existing condition by trauma, the employer or his insurance company would be held responsible for this treatment, provided aggravation could be shown, and would be forced to pay for the permanent disability which might follow. He should not be held responsible for the subsequent death of the patient due to malignancy which will occur in the majority of these cases, for the trauma could not aggravate to the point of fatality a preexistent condition which had already doomed the patient positively. Nor should he be held responsible for hastening the death, for this point could only be one of speculation on the part of the medical profession.

Ewing also refers to those cases of malignancy first discovered after trauma but which antedated the injury. He agrees that trauma is very likely to aggravate a malignant growth, especially if the former is a recurring one. It may then “cause an alteration in the course of the tumor, a change in the local lesion, and a shortening of the duration of the disease.”

Some investigators are inclined to believe that a “precancerous” lesion may in the same manner be altered to a cancerous growth through trauma.

Central Nervous Diseases

The most important chronic diseases of the central nervous system that might be accentuated by trauma have already been covered under the subject of lues—namely, tabes and general paresis. If the symptoms and course of either after trauma are definitely more severe there is little doubt as to the influence of the injury on the pre-existing disease. The period of time, however, between the trauma and the aggravation of the disease must be taken into consideration.

There is another large group of nervous disorders that are very much accentuated by trauma or shock. While these can not be con-
sidered under the heading of organic disease, they do, however, play
a large and troublesome role medicolegally.

Fright has induced epilepsy, chorea, and other nervous diseases
in individuals already predisposed to or suffering from these condi­
tions but not among those previously healthy.

Predisposition, then, to nervous conditions proves an important
causative factor in the development of traumatic neuroses. Al­
though many instances are recorded in which no personal or family
taint can be discovered, many more cases are imperfectly investi­
gated and such predisposition exists without its presence having been
determined (Magruder).

In addition to the emotions of fright, extreme fear, etc., as con­
tributory factors in the causation of functional nervous conditions,
suggestion proves immensely important as an additional promoter.
Suggestion may be active in a variety of ways. The frequent recita­
tion of the details of an accident to friends and acquaintances, the
influence of physicians who, unfortunately, venture untrained neuro­
logic opinions on the ultimate significance of the resulting symptoms,
and, too, that of lawyers during their discussion of the merits of a
claim for damages, frequently impress the minds of the injured
individuals in such a manner that their ideas of the permanency
or seriousness of their damage becomes more definite. In other
words, the potential neurotic may, through injury or shock, develop
a large train of symptoms without any intention of malingering,
which is spoken of as a “traumatic neurosis.”

Cardiovascular Diseases

When we come to consider these we again find that the luetic
group is readily accentuated by trauma—aortitis and aneurism, for
instance.

The arteriosclerotic types suffer, apparently, to a lesser extent,
although here, too, the individual's life may be shortened rather
abruptly, especially if the disease is advanced and approaching the
limits of compensation.

Arteriosclerosis, by predisposing an individual to diseases and degenerations
of all the organs in the body, becomes an active factor in the prolongation of
disability in those accidentally injured. The frequency of a complicating and
often fatal pneumonia following even slight injury in those with hardened
arteries is well recognized.

Arteriosclerosis causes sudden death more often than any other affection of
the arteries and as death in such cases frequently follows some unusual
exertion or some injury which would not in itself prove fatal, post-mortem ex­
amination is often necessary to determine the real cause of death. (Magruder.)

Kahn and Kahn, in the Heart Journal of June, report their ex­
périence with heart strain from its industrial aspects. They cite
case histories which lack data for accurate diagnosis, but present
sufficient evidence of the damaging effects of excessive physical ef­
fort in individuals that were apparently well.

It seems much fairer to assume that there was preexisting heart
disease in these cases, which was accentuated in all of them by the
trauma of overexertion and “strain.” The principal factor in
most, if not in all, of them was undoubtedly some form of vascular
degeneration, either sclerotic or luetic.
It is surprising to note, however, the apparent disagreement of another author in the same number—Clark, on "The Effects of Accidents on Cardiac Employees." This apparent difference of opinion is, however, due to the fact that one author (Kahn) deals with the factor of violent exertion, whereas Clark lists patients who had trauma to extremities or head, such as fractures and dislocations. The difference is obvious.

It is of further interest to note that the experience of Donohue, of the Industrial Accident Board of Massachusetts, agrees with that of Kahn, of New York, with reference to the accentuation of pre-existing heart disease from trauma involving severe strain or prolonged convalescence.

Gastrointestinal Diseases

We have already considered malignancy. To a certain extent gross injury may possibly hasten the inevitable course of cancer of the gastrointestinal tract. An interesting personal observation occurred very recently in my own service at the Jersey City Hospital in a young man suffering from peptic ulcer. He was discharged last May after a course of medical treatment for a bleeding ulcer; he remained quite well and went back to his work as a railroad man. A few days ago he fell off a moving locomotive onto his abdomen about three hours after a meal. Shortly thereafter he vomited blood and again several hours later. The following day he had tarry stools. Here we may definitely state that trauma accentuated the course of his disease.

Diabetes

It is well known that diabetes is susceptible to considerable unfavorable influence from trauma severe enough to be accompanied by more or less shock to the autonomic nervous system. Perhaps it is due to the increased secretion of the adrenal under these circumstances with its attendant effects on the liver and blood sugar. In an unfavorable case grave trauma might very readily precipitate an acidosis.

Graves' Disease

Although we still do not know the cause of this disease and associate all its clinical manifestation with hyperthyroidism, there is little or no doubt that the onset is often due to or at least associated with trauma to the central nervous system. Consequently further trauma will obviously add to the severity of the existing disturbance. Here, undoubtedly, the shock of the trauma is the important factor involving the sympathetic nervous system.

Malaria

Many observers have reported malaria developing in individuals harboring a latent infection after trauma. It is again an expression of lowered resistance, apparently, and is analogous to the recurrence of a positive Wassermann after injury in cases of latent lues. Baehr noted while in the Balkans during the World War that wounded sol-
diers frequently developed severe chills and fever that were not due to infection but were caused by malaria that had lain dormant for a long time. In some way following the injury, the plasmodia returned to the blood stream and the typical clinical picture of malaria followed.

In several instances we have had cases transferred from the surgical service for obscure, nonsurgical postoperative fever in which we have been rewarded in our studies by the discovery of plasmodia and the complete cure with quinine. Obviously, the surgical trauma, here, was analogous to the experiences in the war.

Hæmophilia

This is another condition notably susceptible to aggravation through injury.

In closing, I would say that I have tried to deal with the more common experiences only and to collect what evidence I could from available literature. There are, probably, many more chronic diseases that I have not touched upon. Together with those mentioned, there is a large field for further study.

If I have succeeded to any extent in stimulating greater interest in that direction, the result will increase the pleasure and personal benefits derived in the effort.

Permit me to express my deep appreciation of the honor and privilege afforded me in addressing you and to apologize for presenting much with which you may already be familiar.

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The CHAIRMAN. The next paper will be one on Fractures of the Lower End of the Tibia and Fibula—Structural Changes and Improper Alignment—Is the Disability Confined to the Foot and Leg, or Should it be Considered as of the Total?

I can recall many instances where insurance claim adjusters found a great deal of fault with my viewpoint when I said this individual should have 25 per cent loss of a foot or that individual should have 40 per cent loss of the foot. Of course, they all had an argument;
but in the back of my head I always had the idea that a badly aligned fracture of that type was more than a local condition. Seeing that some of these men go around 10, 12, or 15 years suffering with pain in the ankle, pain in the leg, pain in the thigh, and pain in other places, getting home after a day's work very much distressed, it occurred to me that the disability was more than that, so we submitted this subject for an analysis to Dr. Moorhead. Dr. Moorhead will tell you something about the subject.

Fractures of the Lower End of the Tibia and Fibula—Structural Changes and Improper Alignment—Is the Disability Confined to the Foot and Leg or Should It Be Considered as of the Total?

By John J. Moorhead, M. D., professor of surgery, Post Graduate Medical College, New York City

If a man was a quadruped and not a biped, the fracture of the last big joint of the hind leg might not be much of a handicap. However, the biped standard on which man has been erected makes fractures of the ankle or lower leg a problem in statics if we are to maintain equilibrium and propulsion.

Viewed from a mechanical standpoint, the ankle joint is a mortise of three bones, tibia, fibula, and astragalus. Essentially, the tibia and astragalus are the activating important elements, inasmuch as the fibula serves mainly to prevent outward side slipping of the joint.

Having in mind the architecture of this joint, it is pertinent to recall certain elements as to the normal carrying angle of this joint.

1. The axis of the lower limb has a vertical carrying angle represented by a line passing downward from the anterior iliac spine to the tibial tubercle and thence to the middle of the joint to end in the interspace between the great and the next toe. The lateral carrying angle is represented by a line passing downward from the anterior spine to the great trochanter, thence to the external condyle of the femur, thence to the external malleolus, to end at the base of the little toe. For memory purposes we can call these the crease and the seam of the pants lines.

2. From an X-ray standpoint, a vertical line dropped down the outer margin of the tibia bisects the astragalus, just as a lateral line bisects the astragalus when passed through the middle of the tibial malleolus.

3. Normal plantar flexion of this joint is about 130°; normal dorsal flexion about 100°; normal internal rotation is about 15°; and normal external rotation about 20°.

4. It is very important to recognize that restoration of ankle function is in terms of restoration of the seesaw action between the lower end of the tibia and the summit of the astragalus. In other words, we accurately fit the concave tibia into the convex astragalus.

5. The tendo Achillis must be “in neutral” with the foot at right angles.

These five precepts are fundamentals, and deviation from them means deformity with more or less disability,
Now the outcome of fractures above the ankle as high as the upper third of the leg is likewise often predicated upon restoration of the tibia-astragalus arch. Shortening and angulation, to be sure, are elements of importance; but what does it profit if we regain normal length and contour in a fractured tibia if at the same time our ankle function is impaired?

In passing let us not forget the clinical axiom that fracture of the shaft of the fibula is of little importance because overlapping causes no shortening, the fibula bears no weight, and it is practically never a source of nonunion.

So much, then, for the preliminaries, and now for the end results. Is malalignment in lower leg fractures a disability confined to the ankle or should it be regarded as affecting the entire limb?

Here we are entering controversial territory, and before journeying further let us briefly survey the elements comprising end results. For some years I have been estimating end results in terms of: (1) Function, (2) union, (3) contour.

Function is the ability to perform. Union is the state of repair. Contour is the external appearance. If all three are perfect, then the outcome is perfect. Hence it remains to allot to each of these an arbitrary percentage value if we would rate our end results by figures and not by words.

A good result to you may mean a fair result to me. I may call my result poor, but you would call it fair. Words, however extensive our vocabulary, are nothing like as accurate as figures.

At the cattle show they rate the exhibits by certain predetermined elements based generally on the two factors—actions and looks. Last year's Ford is subject to the same analysis.

If they do these things so well for cattle and automobiles, can we not apply the same criteria to humans?

Function is the end in view, and we all agree that restoration of function merits the highest rating. Hence in our classification we allot 60 per cent for this element. To union we allot 20 per cent; to contour 20 per cent. Now, the summation of function (60 per cent), union (20 per cent) and contour (20 per cent) equals 100 per cent or perfection. Applying this arbitrary method of estimation to a fractured lower leg we proceed as follows:

Function, in terms of standing, walking, balance, joint, muscular, vascular, and neural action is impaired obviously. If it is impaired one-half we allot 30 per cent for this element.

Union is solid, but the callus is irregular, adherent, tender. Hence we take off one-fourth for this and allow but 15 per cent for union.

Contour is fairly well preserved, but there is some angulation, shortening, edema, and cyanosis. Hence we take off one-fourth for this and allow but 15 per cent for contour.

Hence we have function, 30 per cent; union, 15 per cent; and contour, 15 per cent. 30 + 15 + 15 = 60. Our end result is thus 60 per cent, and this from 100 per cent equals 40 per cent, which is the extent of disability in this case.

To me this seems more satisfactory than attempting to designate our findings by adjectives or adverbs. It makes little difference as to the scheme we use; the point is that assessors should have some
bases for computation, and these should represent impaired values in terms of figures and not by the use of words.

There are certain fractures of the lower end of the tibia and fibula that give so excellent an outcome that disability is almost minimal. These are what I term type 2 fractures; that is, there is no initial overlapping of fragments such as pertains in type 1. There are thus two grand divisions of any fracture in any part of the body; namely, type 1, or overlapping, and type 2, or nonoverlapping. Either of these types may be simple or compound.

Hence our first approach to the problem is to type our fracture. If type 1 disability is almost inevitable; if type 2, disability will be minimal.

Next we attempt to estimate the disability after the manner just stated, in which we allot 60 per cent for perfect function and 20 per cent each for perfect union and perfect contour. We take into consideration such important factors as sex, age, race, occupation, station in life. A painful, stiff ankle may totally disable a laborer, but a bookkeeper may go on with his sitting-down job. An eversion deformity following a Pott's fracture may disbar a policeman or a fireman; but the ordinary employee would not be seriously affected by such a deformity unless it also entailed disability. The other elements as to sex, age, race, and station in life are also important, so that a final estimate must consider all these factors as well as those related strictly to the anatomy and surgery of the injury.

There are, then, certain fractures of the lower leg which cause a grade of disability affecting the whole limb. These belong to the type 1 group in which the ankle mortise is seriously damaged, and there is also overlapping or displacement of the fragments so that shortening or angulation also exist. In other words, we have deformation of the joint and of the shaft, both of which contribute to the gait defect, the joint limitation, and the altered carrying angle. Some of these cases may alter the pelvic tilt to such an extent that lateral spinal curvature occurs. From this severe grade there are many variations down to the simplest form of the type 2 group in which restoration of function is practically perfect. Purposely, nothing has been said as to treatment, nor as to compound fractures. We are not concerned with details of that sort just now because our inquiry relates solely to end results.

In passing we may be permitted the observation that early reduction of any fracture, especially a joint fracture, usually means easy reduction. If we wait beyond 18 to 24 hours, edema and muscle and tendon contracture are already present as complications, and we then are treating, not the fracture alone but also some of the immediate sequelae. We waste too much time in our fracture work because we are not quite ready to admit that a broken bone is as much of an emergency as a broken appendix. Very soon, however, every hospital will be so staffed that a crew will always be available for the growing number of traumatic cases.

Prompt attention to this large group of lower-leg fractures will certainly limit the disability and deformity. Imperfect or improper treatment is frequently a responsible factor; but there are, as stated, a number of these lower-leg fractures in which deformity and disability depends upon irreparable structural damage.
Conclusions

(1) Lower-leg fractures as to prognosis depend primarily upon the initial extent of structural damage, and secondarily depend upon the treatment.

(2) Essentially there are only two types of fracture; namely, type 1, showing overlapping or separation of fragments; and type 2, in which there is little or no separation or overlapping.

(3) Fractures of the type 1 group are sources of disability and deformity; those of type 2 group usually repair without disability and deformity.

(4) End results can be estimated on a percentage basis if we agree upon certain arbitrary components and values.

(5) Function, union, and contour are suggested as these components; and 60 per cent is suggested as the value ratio of function, and 20 per cent the ratio for union and for contour.

(6) Figures afford us a more accurate expression of opinion than words. Incidentally, a method of this sort permits us to make a comparative estimate at any stage of observation.

(7) Early reduction means easy reduction and lessening of disability and deformity.

(8) Disability should be limited to the foot and leg when there is: (a) Absence of compensatory tilting of the pelvis or spine; (b) absence of limitation in the joints above the ankle; (c) absence of neural or vascular damage.

(9) Disability should be of the total when there is: (a) Compensatory tilting of the pelvis or spine due to shortening, angulation, or ankylosis; (b) joint limitation above the ankle; (c) neural or vascular damage.

DISCUSSION

The Chairman. The papers which have been presented this afternoon are now open for discussion. The first paper is that of Doctor Wainwright on trauma as a cause of cancer.

Mr. Williams. Some of us who have had to listen to evidence about malignant disturbance alleged to be due to trauma have had to hear experts who would try to make you believe that there was a hard and fast tie between sarcoma and carcinoma, instead of there being a multitude of malignant types tending from one to the other. I would like to hear what Doctor Wainwright has to say on that.

Doctor McBride. I want to express the thanks of the members of the association to Doctor Wainwright for having delivered his very excellent paper. I think that perhaps those men who are engaged in hearing these cases might want to ask some questions concerning it.

Doctor Avidan. We have had a few cases in the department—only six months ago a woman was caught in the breast and developed carcinoma—but the medical profession has nothing to say; it is all a question of law. The deputy commissioners make the decision as to whether or not it is compensable. The law says that any injury that
will tend to aggravate or hasten the man's death by one hour is comp-
ensable, so we have no control over it.

Mr. Kingston. I recall with a great deal of interest a paper on this
subject by a very eminent surgeon, Doctor Bloodgood, of Johns-
Hopkins, delivered at the Baltimore convention six years ago. It
would be very interesting to compare Doctor Wainwright's excellent
paper with Doctor Bloodgood's paper at Baltimore.

There is a question which we often have put up to us: After more
or less serious injury to some part of the anatomy where malignancy
develops within a month or so, we have usually held that there can
be no relation between the malignancy and the trauma, whereas if
the malignancy develops six months later and at the very point of
the trauma, we feel that possibly there may be a causal relationship;
I would like to have that point confirmed.

Doctor Elsberg. During the last 10 years I have had very interest-
ing experience with tumors of the brain. I have noticed with increas-
ing frequency, when the head is shaved in preparation for an opera-
tion, that I find a scar on the head where the tumor was supposed to
be located, and without any history of the patient's ever having had
any injury of the scalp. So frequently have I found brain tumors
in that general location that now I feel very much better, in beginning
an operation for tumor of the brain, if I happen to see a scar over
the scalp in the region where I suppose the tumor is.

I have been forced to the conclusion that there is some relationship
between injuries to the head, as evidenced by scars in the scalp, and
tumors of the brain underneath in that general location.

Doctor Moorhead. When Doctor Wainwright was preparing his
paper he was kind enough to send me a letter asking me a lot of
pertinent questions in regard to this situation, and I wrote back at
great length on the same sheet of paper on which he made these
inquiries, and, in brief, I will say this, that in my experience I have
never known of a case of malignant growth under the surface of the
skin to occur as the result of a single isolated trauma. I have had
one experience and I think I told him of it—that of a woman who
had a blow on the breast in whom the relationship seemed so very
definite that I was forced to concede it.

I have known superficial malignancies to occur as the result of
prolonged trauma, and I have had the experiences we have all had
of seeing an epithelioma develop at the site of a large scar.

Doctor Londigan. I have listened with a great deal of interest
and pleasure to Doctor Wainwright's paper, and I hesitate to speak
of a paper that has been so carefully and well prepared. However,
through my experience in examining about 250 patients in a month,
I can not agree that a single or even a double trauma is productive
of malignancy. If it were so, I think we would have a greater num-
ber of malignant cases than I see at our clinic. During the past year
I can recall only two which were supposed to have followed trauma;
one, to my mind, was not the result of trauma but of a lot of bad
teeth present for a long time and causing chronic irritation.

The case Doctor Wainwright cited where the mole on the shoulder
was irritated by the back of the seat of the automobile would, I
think, prove that the trauma, where the part of the anatomy trauma-
tized later on develops malignancy, is just an incident to the malignant growth that follows.

The Chairman. The next paper for discussion is Doctor Elsberg's paper on "Fractures of the spinal vertebrae."

Doctor Wainwright. I was tremendously interested and very much instructed by Doctor Elsberg's paper, and glad to see that he had come to many of the conclusions we had worked out ourselves and to the same results. For instance, there were two camps of people, one that always used to operate on fresh fractures of the spine and the other that never did. I have been in both camps. I was in the first for a little while and never saw any results; now I am with Doctor Elsberg—we never operate except for some special reason.

One thing that perhaps is a little aside from Doctor Elsberg's view of this matter but must come up to him sometimes, especially in connection with cases like one or two that he showed, is where there is a pressing fracture of the bones of the vertebrae with or without symptoms. A good many of these cases are comparatively without symptoms at the time of the injury; several months or years later they do complain of some symptoms, due to the disturbance of the whole anatomy because one end of the bone—of an anterior bone of the vertebrae—has fallen down. We think we are getting fair results now in those cases by doing a fusion operation early, sometimes of the Albee type, but the particular type you do does not matter very much. A good many of those cases seem to come along later on in life, with very severe symptoms, and we think that we are getting better results, seeing fewer cases with symptoms two or three years later. At the present time we are in camp No. 1; as far as that goes, we are still quite enthusiastic about doing fusion operations early on patients who have crushed fractures of the bones of the vertebrae, not basing our indications for operation on the present symptoms, but simply for future results, thinking that the fusion operation, if done early, is going to prevent serious trouble later on.

Doctor Moorhead. I am at the disadvantage of not having heard Doctor Elsberg's paper, but I am familiar with his views as regards when to operate and when not to operate, and judging from what Doctor Wainwright has said he has not changed his views. In fractures of the skull and spine, instead of operating in the great majority of cases men like Doctor Elsworth and Doctor Taylor believe that certain definite indications that ought to be met before operating occur rarely, and that the operation should be done for one indication only, that being pressure.

Doctor Flaggé. I am very much interested in fractures of the spine. I believe I see over a hundred fractures of the spine a year, and I have seen fractured spines that were operated on and those that were not operated on, especially the complex fractures. I have seen a lot of them remain undisturbed, with wonderful results. I have seen some of them splinted, with good results; I have seen some splinted with poor results. I personally believe that unless you have a serious pressure on the cord or there is some particular reason, such cases ought to be let alone, and then in 75 per cent of the cases you will find excellent results. I do not believe in operating on them right away.
Doctor Londrigan. I have not heard anybody make a definite rating of the disability resulting from injury to the spine. That has to be taken into consideration, whether or not we have nerve involvement as a result of the fracture. The percentages mentioned by Doctor Moorhead in his paper would not apply—would that apply to the spinal column?

I have seen some very good results from fractured spine and I have seen some very bad ones, in which there was no displacement, just the linear fracture of the bone, by which a man was totally and permanently disabled without apparent involvement.

I have also seen fractures of transverse process. I would like Doctor Elsberg to speak on that. I have seen more fractured transverse processes with separation of the fragments without union, in which there is a permanently painful back, where a man usually has to use a support all his life.

Mr. Williams. In order that it may be put upon the record and perhaps do some good, I wish Doctor Elsberg would tell us what has been his experience with the result of chiropractors dealing with lame backs.

The Chairman. The next paper is Doctor Jaffin’s.

Mr. Stewart. I want to say just a few words about Doctor Jaffin’s paper, not directly but indirectly, and to submit a proposition to the association.

At the Salt Lake City convention Mr. Wenzel, who, I believe, is here at this convention, proposed a resolution committing this association, if I remember it, absolutely to taking cognizance of accentuation of chronic diseases or conditions as a result of trauma. It was committed to the medical committee. The matter was again taken up at the Hartford convention. There have been so many papers—at the Atlanta convention and here—particularly Doctor Jaffin’s paper—that I want to suggest that to-morrow afternoon, after Mr. Duxbury’s paper, in which he is going to touch more or less upon that subject, that the matter be thrown wide open, that the association go to it head-on and either make a decision or appoint a committee to report next year. That will enable this association to take a stand. At Hartford we sidestepped it; we neither approved nor disapproved of the Wenzel resolution; we simply refused to accept it.

Now, it is a question that this association can not afford to sidestep. I do not mean to tell you what side I am on, but I do think that the time has come when, either to-morrow afternoon or by appointment of a special committee to-morrow afternoon, we ought to prepare ourselves to take a definite stand next year.

The Chairman. The next paper open for discussion is that of Doctor Moorhead. Will you start that discussion, Doctor Wainwright?

Doctor Wainwright. I hardly know how to start that discussion. I have followed Doctor Moorhead’s teachings in traumatic surgery very closely and have swallowed everything he has said—hook, bait, and sinker—and he presented this subject again to-day so very clearly and completely and cogently that I have not changed my mind; I still go along the way I always have.
Doctor Avidan. I want to thank Doctor Moorhead for presenting this interesting paper; it is one of the very few papers I have heard on the subject. Of course, this subject of percentage of disability—you speak to 100 physicians, you ask them how they estimate, and each one will tell you a different story. Doctor Moorhead goes at it from a medical, scientific basis; he is very accurate on his pathological diagnoses, and he takes into consideration the normal relation of the parts, the physiological relation, what the deviation is, which is very important, you can not measure disability with any accuracy; that is impossible. We can all make accurate diagnoses, and that is very important.

The doctor uses the words “carrying angle” in terms of the foot. I prefer to use “weight-bearing angle, or power”—that is the most important function of your foot, the weight bearing. If you do not give a man with a traumatic weak foot a metal plate he can not work. To my mind that is a very important term to use, “weight bearing.” I prefer that to “carrying angle.”

The classification of Doctor Moorhead, I think, is all right. I think it is something to be considered, to be thought about. We have to have some basis, but there are a lot of things to be considered in making an estimate. We have to know what are the most important movements of a joint.

The doctor spoke about the heel cord; I think that is one of the most important tendons in the foot. Take a shortened Achilles tendon; you have an aching foot. Unless you correct that, that man is going to court and make a lot of trouble. You have to correct those conditions before you make a final estimate; that is the final therapeutic treatment of these cases; you have to put a man as nearly normal as possible. If you don’t, you have the compensation court.

Again, about the estimate of disability: It has been very disappointing to go to the compensation courts and have a doctor go on the stand and in an arbitrary way make an estimate with no reason. I hope the day will come when that is done away with entirely. If the doctors would get together on all these cases, we could all come to a conclusion. This business of going on the stand and one saying 10 per cent, and one 9 per cent, and then the referee giving 8 per cent or 7 per cent, is all wrong, and I think one of the things the medical profession should do is to correct that. The referee is honest and he tries to be fair, but he is helpless.

The doctor spoke about the disability in terms of a foot or a leg; he said unless the knee is involved—that is, the joint above the ankle, the knee, or hip—it should go in terms of the foot. That gives me an important point. In fractures about the ankle, the lower shaft or tibia, we have a condition known as traumatic vallecula, and that changes your carrying angle. If I am wrong I want Doctor Moorhead to tell me. In these traumatic vallecula cases, if they are not properly treated we find a strain on the internal lateral ligament, which produces a weakening of the knee and a strain on the sacroiliac. There is a deviation in the weight-bearing power.

Doctor Londrigan. I agree only with Doctor Wainwright’s statement that he followed Doctor Moorhead’s teaching in this particular subject. It is always a great deal of pleasure to me to hear Doctor
Moorhead read a paper. I always get knowledge and information that are worth while.

In estimating disability he rated function at 60 per cent. In our estimates of disability we do not take into consideration the changes or the part involved, we take reduction in function; we attempt to estimate that part of the function which has been lost.

In keeping with that I have in mind our own commissioner of labor who at some time during his life sustained a fracture of one of the metacarpal bones of the hand. I would like to have the doctor look at that, I think he has about as good function of his hand as any man I know, but there is a change in the contour of that hand. If Doctor Moorhead will elaborate as to the reasons for allowing 20 per cent, for contour—in other words, if a man has a fractured tibia with only a loss of contour, would that be a 20 per cent loss of the leg?

The Chairman. Doctor Wainwright, will you answer the various questions that have been propounded to you in connection with cancer?

Doctor Wainwright. In regard to the commissioner's question about the relationship between sarcoma and carcinoma and various other types of malignant disease, I do not think the particular type changes; whatever the general principle is, that we ought to apply to the question. The difference between sarcoma and carcinoma is pathological; that is a difference of degree, not a difference of principle, and I do not think in the compensation court or law court the particular type of malignant disease has any great significance. As was said in the paper all the law has to know is that the man had a lump and what it did.

As to the question of the time element, that is a difficult one to consider. We usually do not accept carcinoma over one month. In the first case I showed you, where it appeared in two weeks on the jaw, that man did not come in to me from the claim point of view; he came to me as to a physician, to cure him. He told me what he thought was the truth. He was very certain that there was no trouble on that spot in his face before; he was very certain that that tumor had come in the two weeks, and the photograph proved what that had developed into, so we can not definitely lay down an arbitrary period, either as to primary time, or the minimum time, or the maximum time.

The scars Doctor Elsberg mentioned on the scalp, in cases of brain tumors, raise a most disturbing element, and this certainly ought to be investigated further. I hope very much that Doctor Elsberg will explain it some time later on. It is going to raise a new point of view, if scars on the scalp to which the patients have paid no particular attention and do not think it is worth while to mention to their doctor, are going to be followed by tumors; it is going to raise the curtain on a whole new field of investigation as to the relation between trauma and cancer.

As Doctor Londrigan said, it is of course a very rare cause or connection, but the mere fact that Doctor Londrigan sees 250 cases a month and does not happen to notice the connection does not prove that it does not occur. It is very rare, but the point from the legal point of view is, not whether it is rare, but whether it can occur.
Because one man does not see it in 250 cases a month does not mean that it can not occur. If it can occur in one case—there are lots scattered through literature—it proves the possibility of the principle that one single trauma can cause a carcinoma. From the legal point of view, that is all we want to know. As a matter of fact, what we medical men need when we get up in connection with our legal brethren is a more clear-cut logic. If I had my way, I would have logic taught in every medical school the first year, when a man enters medical school, and have it repeated every year so that we would learn some of the rules and not jump to conclusions. We do not know anything about logic; we either exclude the whole business or swallow it.

The Chairman. Doctor Elsberg will you close your paper?

Doctor Elsberg. Far be it from me to have meant to be understood that permanent scars as an evidence of some preceding trauma to the skull were the cause of intercranial tumors. All that I said or meant to say was a statement of fact, which was that it is remarkable how frequently one finds in the scalp over the region of the brain, when operating for tumor, a scar, so that I have gotten to the state of mind that whenever I see a scar on the scalp over the region where I am going to operate for brain tumor, I feel a little better and I think I am pretty sure to find a tumor under that. Further than that I won’t go.

Regarding what the commissioner asked concerning the chiropractors, I should say that 1 out of every 3 or 4 fractures with complete symptoms that I see, I see as a result not of their injury but of the treatment by the chiropractors. I think that must be said with due credit to the chiropractors.

Regarding the question of fractures of the transverse processes, what I said in my paper I think sums up the subject.

The Chairman. Doctor Jaffin, will you close your paper?

Doctor Jaffin. I have nothing to add to what I have said. The subject is entirely too big to talk about or even discuss, but I am very glad that the secretary has thought it a subject worthy enough to bring up for further discussion and commitment.

The Chairman. Doctor Moorhead?

Doctor Moorhead. I do not know that there are any questions to answer except the one Doctor Londrigan put with regard to the percentage allowance for any of those three elements. I think everybody will agree in allotting a larger percentage to function; that is the end in view in everything, and whether you are allotting 60 per cent, as we do, is a matter for your own determination. The thing I would like to stress would be that if we all—this association and others—could agree, if we could get this thing down to a percentage basis and then all follow it up, how much better it would be for us in classifying our end results, and how much easier it would be. You know what an American dollar is; I know what a French franc is; we know what a German mark is; why not agree on a set of standards. We have a set of standards for everything else; why don’t we have a set of standards for this?

Mr. Stewart. I would like to call the doctor’s attention to the fact that the statisticians have been cussed and cussed and cussed
for 40 years for trying to statisticize mankind. I am simply giving
you doctors a little warning as to what you are up against.

Mr. Wilcox. In estimating disability because of injuries to the
limb, or foot, we rate our percentages, I suppose, on the basis of
total loss of function or usefulness; don't you, doctor?

Doctor Moorhead. Yes.

Mr. Wilcox. The late lamented Carl Hookstadt made a very
extensive study of the relative amount of disability as a wage earner
between two types of injuries, one of them the loss of the arm and
the other the loss of the leg, and he demonstrated, so far as figures
will demonstrate and from actual studies in the field of men who
had been injured, that the loss of the leg was a more serious handi­
cap for the wage earner than the loss of the arm, and it is significant
that in no compensation act do we rate disability to the leg greater
than disability to the arm. The percentages of permanent total
disability for injuries to the arm exceed those for injuries to the
leg. In only one or two States are they rated equally. It is the
usual practice to give a lower rate for injuries to the leg than for
injuries to the arm in its effect upon wage earners. Almost the
very first statement Dr. Moorhead made was about the need of a
leg to get to work on. I do not know whether or not he has given
thought to the question of the relative effect upon wage earners of
loss of leg and of loss of arm.

The Chairman. I would like to say a word about Doctor Moor­
head's theory on the percentage of disability and why we do not
establish a definite rule of measure. I think that is because of this
fact: About 10 years ago Professor Mayo put this question to Pro­
fessor Martin, of the University of Pennsylvania, and he said, "How
many men in general practice do you suppose are competent to
treat a fracture?" Doctor Martin hesitated and said, "Perhaps
10 per cent." Mayo's reply to that was that not over 2 per cent of
the men in general practice were competent to treat fractures, and
I think that that is nearly true.

The reason we fail to arrive at a definite conclusion in connection
with the assessment of damages in these trauma cases is because of
the fact that this is not taught in the colleges. The average man
who gets into the practice of medicine sees a man with a colloidal
fracture, and he will come in and state that the man is 100 per cent
disabled. The man may see such a fracture once in a year, or a
Pott's fracture once in two years, or he may see a fracture of the
femur once in two years or four years; then he comes into court
and attempts to estimate the percentage of disability. It can not
be done until you teach the subject properly in the medical schools.
The men in the last two years ought to have a lot of instruction along
these lines.

And again, we know the average experience the interne gets in
the hospital. As a matter of fact, he takes charge of most of the
fracture cases. The visiting surgeon walks in and sees Doctor Jones
has been there three months, and he says, "What have you here?"
"I have a fracture of the femur." "It looks all right," and he passes
on to the next.
The same thing happens with a fracture at the wrist or ankle. The men who come for tuition in the hospitals fail to get the tuition, and the same thing applies in their last years in college. If these boards would stress the fact that colleges ought to teach this subject the last two years in college, and if we stressed it that they ought to teach it in the hospitals, we would get better results.

Doctor McBride. The only thing I might add is that I think perhaps you are rather extreme in your criticism of the average attendant at the hospital. I do not think it is quite as bad as that. I would not want to have these laymen get that impression.

Mr. Stewart. We know it.

Doctor McBride. That may be so with some surgeons, but, I think, not with all; they at least insist on X rays and have their cases X rayed a number of times—I know I always do that. Perhaps we may be more careless than we should be. I quite agree that the average physician is not qualified to pass upon percentages of disability. I say that because I have observed the thing particularly for the past five years, and I am glad this question came up because we will take it home to ourselves, each of us doctors, and we will try to analyze the question. You have a patient who has suffered some disability, whether it be industrial or whatnot; the person is injured; he is your patient; the members of the family have been your patients for a long time, perhaps; there are always so many possibilities that can arise following any serious accident or any serious disability. The result may be a splendid one, but you are going to safeguard the future of that patient as to any recurrence or any disabling effect later on, as much as you possibly can, and be thoroughly honest about it. In other words, you are going to protect, as you should, that patient and that patient's dependents, if he or she have any, so far as that is humanly possible.

This mistake is often made, and I think the mistake is an honest one, that a doctor—for example, one working for an insurance company or for an employer—is going to be honest and safeguard, in so far as he can, the rights of the employer, he is going to look upon the result of a disability, if that result is a reasonably good one and is reasonably sure to improve in his opinion, and say that the percentage of disability is only so much, figuring that the disabled part is going to improve with use, whereas the opposite is true if the part affected is not used. We have that come up frequently in our compensation courts, because they say: We don't want the permanent estimate at this time because we feel certain that the stiffness surrounding a fracture, in a joint particularly, is going to improve with use, and we are quite certain that in six months from now, or in eight months from now, or a year from now there will not be any permanent disability in that affected part. We have a good deal of difficulty sometimes.

I have adopted this principle, in so far as it is possible to carry it out. You get the physician representing the carrier, or the employer, or the group of individuals who might be interested, to make an estimate of disability according to his best belief and judgment, after a proper examination. He will make just as close an estimate as he possibly can; he won't give any leeway at all. Then you take the
version of the family physician. Many times he is quite able. He will try to safeguard the rights of his patient and that patient's dependents, and he will give what he believes is an honest estimate, but for fear that he might make a mistake he is going to make that a little more liberal, so that the future may be assured. That is the only difficulty we have in estimating; and when I, being a doctor, came into the work the habit was quite prevalent for the referee or deputy commissioner to expect that the family physician or the physician in attendance in the case was going to estimate high and the physician representing the carrier would estimate low; they were interested, one on one side and one on the other, and the referee or deputy commissioner (a practice which we broke up) forthwith attempted to say that one is too high and the other is too low, and I am going to make it in between.

I say you can definitely establish the amount of disability. If you can not it is an indictment on the medical profession. You can estimate disability accurately. It can be done; that is what we do in our department. We have the doctors at issue get together and prove the actual disability. If they do not agree we say: The State will furnish you with a third doctor, or with two or three doctors. We are disinterested except to see that justice is done, to see that the injured person gets the relief he or she is entitled to. That is our only interest. If they say: “We think your State doctor is biased,” then we say, “We want you two gentlemen to get together and you two select some competent person, some competent medical authority, and upon his say-so the amount of disability ought to be determined.” I think that is the proper way to do it.

I think we have been very much enriched this afternoon by having had these very excellent papers presented to us. The men are all able men, they have gone to a good deal of trouble to prepare these papers, and this association is deeply indebted to them. I know that I voice the sentiment of the entire association when I express to them the sincere thanks and appreciation of the association.

These papers will become a part of the history of this organization and will be printed and preserved for all time. We are all going to have the advantage, not only of having heard them to-day, but of being able to use them in the future, by referring to them.

Mr. Williams. I do not think this meeting ought to break up until I say for myself that I have had the first edition of Doctor Moorhead's book on my shelf ever since it was printed, and the second edition; they are tools of my trade to-day, and if he will tell us when he is going to get out a new edition, I will get that.

Doctor Moorhead. About three-fourths of the text for that new edition is now ready. The contract for the printing has been signed with W. P. Saks & Co., of Philadelphia. There will be about 600 pages and it ought to be in the hands of the public the first of January; it will retail for about $6.50.

[Meeting adjourned.]
THURSDAY, SEPTEMBER 13, 1928—MORNING SESSION

CHAIRMAN, SAM LAUGHLIN, CHAIRMAN STATE INDUSTRIAL ACCIDENT COMMISSION OF OREGON

OCCUPATIONAL DISEASES

The Chairman. It falls to my lot to preside this morning, and I appreciate this honor very much. I presume it is a sort of compensation for having traveled such a great distance to attend this convention. I think I am the only representative from any of the Pacific Coast States, neither California nor Oregon being represented at this meeting. I am a very firm believer in meetings of this sort where we get together for the purpose of exchanging ideas, which is one of our best methods of education.

We will now listen to a paper by Dr. G. H. Gehrmann on "How chemistry has changed industry, and as a result has changed the tendency to occupational disease."

Doctor Gehrmann. I want to call your attention to the fact that I am dealing simply with the situation as met in our own line of manufacturing. I am not attempting to vouch for activities along other lines, although I am sure there is a certain amount of progress in every branch.

How Chemistry Has Changed Industry, and as a Result Has Changed the Tendency to Occupational Disease

By G. H. Gehrmann, M. D., Medical Director E. I. du Pont de Nemours & Co.

Modern industry owes its tremendous growth, its highly scientific methods of production, and its present amazing wealth of wonderful products to the relatively recent advances in chemistry. Chemistry has advanced from its almost obscure and mysterious position to a realm of importance, second to none. The mysterious old fellow with his test tubes and retorts, hidden and obscure, has emerged with a triumphant store of knowledge that has enabled him to perform miracles.

Chemistry has become the very foundation of modern industry, instilling into it greater possibilities, higher efficiency, and newer ideas. The chemist takes a handful of ordinary cotton and by one process changes it into an explosive powerful enough to shatter the toughest of steel, and by a second process changes it into a dainty mirror for milady's dresser, or a beautiful shiny coat for an automobile.

Industry has made marvelous advances, not only along the lines of newer and better products, but also in newer, better, and safer methods of producing them. Chemistry has made it possible to manufacture products which, although highly toxic or dangerous,
either in themselves or in the making, are absolutely necessary as a means toward higher accomplishments.

For example, consider the manufacture of nitro cellulose, which is produced in tremendous quantities each year. The production of this material is dependent upon the treatment of cotton with highly concentrated acids. Before present-day methods were evolved the process was not only highly dangerous but actually cost the lives of many employees, and in others caused painful injuries and often prolonged illness. Prior to the present methods of handling I have seen from 50 to 75 nitro-cotton fires in a few hours in a small plant consisting of five units; now under improved methods a fire is a rarity and a case of nitrous fume poisoning is almost unheard of.

The improvement in this one line of manufacturing has resulted in the saving of many lives and the elimination of great numbers of occupational cases. Nitrous fumes attack the air passages, causing a rapid corrosion and pulmonary oedema. The exact amount of fumes necessary to cause symptoms is undetermined and varies somewhat in different individuals. Symptoms of illness may come on shortly after exposure or may not appear for several hours. As yet, no form of treatment has been devised that will cure the condition, all present measures giving relief only, and it is my belief that the only cure lies in absolute prevention of inhalation.

The demands of modern civilization act as a stimulus to chemical research to provide products in greater quantities, more lasting in quality, efficient in their adaptation to daily uses, and, with all, a minimum in initial cost and maintenance. Consider the automobile of to-day, in contrast with that of a few years ago. The mechanism is perfected to such a point that we can almost forget its very existence. The riding qualities are greatly improved, the finish is practically as durable as the metal itself, and the nickeled parts no longer require hours of labor in order to maintain the luster. The very fuel that goes into the motor is more efficient in producing power, less destructive on motor parts, and in every way more suitable for obtaining the best results.

Only by chemical research have these improvements been developed, and the application of the newer ideas have necessitated changes in methods of manufacture and, in many cases, the production of newer materials, many of which are capable of producing occupational illness, unless the methods of manufacturing and handling are controlled by highly scientific methods.

A few years ago Midgeley discovered that the addition of very small, almost minute, quantities of tetraethyl lead to ordinary gasoline changed the type of explosion, rendered the fuel more efficient, and made an ideal antiknock solution. Prior to this time tetraethyl lead had never been made on a commercial basis and so nothing was known of the methods necessary for quantity production. The beginning months of manufacture were attended by many cases of illness and a few fatalities. Later developments have completely eliminated the defects in handling, and the present basis of manufacture has rendered it an entirely safe process.

The advent of this product and the illnesses following it seem to have created the impression that tetraethyl lead poisoning is an entirely new disease, whereas it is purely a rapidly developing lead
poisoning, with a predilection to nervous tissue. There was a failure to realize that here was a form of lead that would enter the body more rapidly than any of the known compounds, and in addition to entering through the alimentary and respiratory tracts, it would rapidly enter through a channel theretofore considered as practically negligible, the skin.

Circumstances arising during the early days of manufacture seemed to indicate that here was a product so toxic in nature and so difficult to handle that the idea of further manufacture should be abandoned. However, by the aid of combined chemical and scientific efforts, conditions have been changed, and now the same material has been manufactured for over two years without a single case of even the slightest symptoms. In other words, chemistry first developed a product capable of producing serious and even fatal illness, and after developing this product, chemistry developed a safe method of producing and handling it.

Our experience in the du Pont Co. with poisonous materials—and we handle many of them—has led us to feel that no matter how toxic or harmful a product may be, it can be made safe to manufacture and handle with the proper equipment and a well-trained organization to operate it.

One of the greatest developments of recent years has been that of the lacquer finishes applied to automobiles, to furniture, and in short to practically every article which was formerly protected with paint and varnish. Along with this new lacquer, there has been extensive development of the spray method of application. The spraying of lacquers has raised the question and stimulated the investigation as to the hazards and occupational diseases that may arise as a result of the introduction of these newer products.

Many rumors and almost weird tales have been circulated from one to another, with the usual additions and distortions, until there has arisen a tendency to classify spray painting with smallpox and bubonic plague.

I have personally received many complaints from various sections of the country, telling of the symptoms and diseases produced by inhaling lacquer fumes. Furthermore, I have personally investigated most of these complaints and have yet to find a true case of lacquer poisoning. Let me cite one case with the results of our investigation.

I received a communication from a large city in Pennsylvania stating that an employee of a refinishing concern had been refused insurance because of physical ailments brought on as a result of spraying lacquer. I visited the man in question, and he informed me that it was true that he had been refused insurance on account of this physical condition, and stated that lacquer spraying was the cause of his trouble. Investigation revealed the following facts: This man had been spraying lacquer in a refinishing shop, with good ventilation, for about one year. He was 45 years old, claimed never to have been sick enough to have a doctor since he could remember, and, with the exception of one occasion two years before had never been examined. He did admit having had a severe tonsillitis, which later developed into a double peritonsillar abscess about two years previous. His occupation, prior to his present, and for a period
of 28 years, was that of a painter. He was decidedly prejudiced against lacquer and stated that men were dying every day as a result of exposure. Upon direct questioning, however, he did not know of anyone who had actually died, neither did he have any idea as to where those fatal cases might have occurred.

Physical examination showed that this man had badly infected tonsils, a severe heart lesion, high blood pressure, and kidney disease. A complete train of results, directly traceable to infection and possibly due to some extent to lead absorption that occurred during his 28 years as a painter.

I could cite innumerable other cases which, upon investigation, have proven the falsity of their claim. Our own experience in the manufacture of lacquer over a period of several years has been carefully supervised by medical attention and physical examination. The conditions met with in the manufacture and experimental work have in every way simulated conditions met with in the spraying industry. In no case have we found involvement of any organ of the body which could be directly traceable to exposure. Dermatitis has occurred occasionally, but has been readily overcome by treatment or temporary change of work. The committee appointed by the State of Pennsylvania and the National Safety Council conducted a careful and scientific investigation of this subject, and I believe that, for the sake of brevity, we can sum up the entire situation in these few words, “Eliminate benzol and lead, and spray with adequate ventilation.”

The recent introduction of stainless steel and chrome nickel has called upon industry to produce ever-increasing amounts of chromic acid, the manufacture of which provides the possibility of chrome ulcers. These ulcers may be caused by the chromates used in the manufacture or by the chromic acid. They appear principally in the nasal passages, and may progress to such an extent as to cause perforation of the septum. All untoward symptoms and undesirable effects have been completely overcome by the installation of proper ventilating hoods.

Chemistry has solved many difficult problems in the explosives industry by careful study of the manufacturing process for the production of high explosives. Nitroglycerin, trinitrotoluol, fulminate of mercury, and tetryl are all made with comparative safety and seldom detonate accidentally.

Workers in nitroglycerin suffer with extremely severe headaches, which come on a few minutes after contact with the fumes or liquid. Remedial measures offer very little relief; but the workers soon develop a temporary immunity. A few days’ absence from work and the use of alcoholic liquors will soon render them susceptible to the violent headaches. Consequently, nitroglycerin workers are apt to be very steady and total abstainers. I know of no permanent systemic effects that are produced, and do not think that there are any. A few days ago I examined a man who had worked in nitroglycerin for 35 years and found him to be in good physical condition.

Tetryl and fulminate of mercury produce dermatitis and skin ulcers unless handled with proper precautions. Individuals with delicate skins or a tendency to skin conditions must be eliminated from this type of work, the darker-skinned types being more suit-
able. These employees must be taught the necessity of frequent cleansing of the exposed skin areas and daily applications of bland ointments. In conjunction with these precautions, there must be sufficient exhaust ventilation to remove the dust and fumes.

The advent of the dye industry to this country brought with it possibilities of many toxic conditions. Our early experiences were, perhaps, not all that could be desired, but at the present time, under improved methods, we are able to handle and manufacture dyestuffs with comparatively little trouble. Benzol, as used in the manufacture of anilin, is used in a closed process and consequently gives no trouble. Anilin, nitrobenzene, and the benzene derivatites will cause the production of methemoglobin with cyanosis. The symptoms occur shortly after the inhalation of fumes or contact with the skin, and although the afflicted have all the indications of being severely ill, they recover in a few hours without any apparent permanent effects. Our early days of handling these products taught the necessity of introducing improved methods of manufacture, together with precautions in handling, and these two factors have practically eliminated our difficulties.

I could continue to relate many additional instances illustrative of the advantages of modern chemical methods over those of a few years ago, and in each case conditions have so improved as almost to eliminate the possibilities of occupational disease. New products will from time to time be developed and with the development of each new product will arise the question as to just how serious a health hazard it may be. Fortunately, industry is realizing more and more the importance of the medical department and the medical department is fast becoming an integral part of the organization, with a definite purpose of improving industrial conditions. The medical department of a properly organized industry now has the opportunity of studying the effects of new products while they are in the experimental stages rather than waiting for an opportunity to observe the results after production has started. The result can not be productive of other than improved industrial conditions, a marked reduction in occupational diseases, and a general improvement in public health.

In closing I would say that it is my belief, based on actual experience, that any product can be safely manufactured, provided the manufacturer will follow the advantages offered by the developments of modern chemistry and preventive medicine.

Mr. Wenzel. I want to ask a question of the doctor. I would like to ask if you can give us a very brief statement of the symptoms that follow the use of the Duco finish in the small refinishing plants. We have had three cases of alleged disability resulting, and we have found on investigating that there were both fumes and a sort of dust.

Doctor McBride. I think we had better delay the discussion to the conclusion of the papers.

The Chairman. The next paper will be by J. J. Bloomfield on "Health hazards in industry."
Health Hazards in Industry

By J. J. Bloomfield, Assistant Physical Chemist, United States Public Health Service

The number of new health hazards in industry are very limited. The application of our growing knowledge of chemistry to industrial processes has been the means of bringing to light once more certain hazards to health, since in some instances the chemicals involved in these new applications are of such a nature as to constitute a source of injury unless precautionary measures are exercised. Specific examples of such instances are the increased uses found for such injurious substances as lead, benzol, mercury, and chromium compounds and certain toxic gases. As far back as 1822, Prof. C. Turner Thackrah published in London a book entitled, "The Effects of the Principal Arts, Trades, and Professions on Health and Longevity," in which he wrote with a wide degree of knowledge of certain industrial problems that are still in existence. He describes lead poisoning among potters and asks: "Could not the process be effected without the immersion of the hands in the metallic solution? Or could not some article less noxious be substituted for the lead?"; disuse of lead in glaze is highly desirable. Speaking of brass workers, he says: "The founders suffer from the inhalation of the volatile metal. In the founding of yellow brass in particular, the evolution of oxide of zinc is very great." He suggests magnetic mouthpieces for machine workers who are engaged in filing, in order to prevent the metallic particles from entering the breathing tube. He makes reference to baker's itch and to chimney sweep's cancer. Professor Thackrah was in all probability one of the first observers systematically to make use of a physiological observation as a routine procedure in industrial hygiene. For measuring "the capacity of the lungs" he used a glass bell jar inverted in water, and he quotes the results of many such determinations on workers, and compared the results with soldiers as a standard of persons in health.

Again with carbon monoxide human experience; with the poisonous effects of this gas had its beginning during the prehistoric ages when man first began to use fire. Dr. L. Lewin has traced references to the action of this gas back through the ancient Greek and Latin literature, and concludes that this poisoning "of all stands alone in its close relation to the history of the civilization of mankind."

Many more such examples of the existence and knowledge of present-day health hazards are to be found recorded in writings of our predecessors in the field of industrial hygiene. Over 100 years have passed since the publication of Professor Thackrah's valuable book—a century marked by enormous strides in the scope and intensity of industry, and along with this a parallel increase in the urbanization of peoples. The strides which have been made in the conduct of industry have, however, more than kept pace with the problem of safety for the worker, and to-day there is no doubt that the average worker lives and works under conditions far more conducive to life and health than ever before.

Perhaps the major factor in this progress of safety in industry in this country may be attributed to the passage of the workmen's compensation acts, which spread so rapidly from State to State.
between 1909 and 1913, when 23 States enacted laws of this type. Besides the benefits which these acts bring in the way of securing relief from the financial burden of industrial accidents and diseases, these acts also serve an important function in that they exert some influence in the prevention of industrial accidents and diseases by their indirect pressure. Another very important factor in the development of industry has been the farsightedness of certain employers of labor who have seen the benefit to industry, as well as the humanitarian value, of the safety movement, and have gone far ahead of the compensation acts and ahead of any legal compulsion and developed safe and excellent conditions in their factories. This commendable attitude on the part of certain employers of labor has been brought to the attention of the writer not only through personal observations made during visits to various industries but also through the many inquiries addressed to our office concerning the possible hazards that may be associated with certain contemplated processes in industry.

Industrial poisoning often reduces a worker’s health below normal and sometimes causes the worker to leave his job. The fact that the worker may be poisoned may even escape recognition. For this reason industrial poisonings are often much more elusive than are industrial accidents, and the actual progress which has been made in the control of poisonings is perhaps not so great as in the case of accidents. The statistical returns of cases of industrial poisoning and of deaths from such causes are not very complete, but they serve to throw some light on the situation with regard to certain industrial poisons and one in particular—lead. There is little or no doubt that lead still constitutes a real industrial poison of first importance. This disease is still active among painters, smelters of lead ores, persons engaged in the manufacture of storage batteries, chinaware, and sprayers of enamels containing lead. But the most recent statistics show that lead poisoning is certainly on the decrease; the death rate from chronic lead poisoning fell from 2.5 per million in 1910 to 1.4 per million in 1924. Among potters, as a result of 1,800 medical examinations in 1921, a rate of 77 per 1,000 was established, as contrasted with 132 per 1,000 established for an earlier period. In the printing trades, Doctor Hoffman found but five deaths in the year 1925. He concludes that since the aggregate number of printers is not less than 300,000 “the relative rate of incidence is very low and no longer a matter of serious concern to both employers and employees.” The two industrial groups which suffer to the greatest extent from lead poisoning are painters and electric storage-battery makers, and Doctor Hoffman’s statistical studies show that in the period 1914–1924 nearly 53 per cent of the deaths caused by lead poisoning were among painters. Of 920 cases of lead poisoning in New York State, approximately 50 per cent were among storage-battery makers. One may say that the statistical reports are inaccurate, and undoubtedly this is so, but there is every reason to believe them to be more accurate at the present time than ever before, and comparatively they show a decrease in some forms of lead poisoning.

The medical man or the commissioner of compensation is frequently called upon in the compensation courts to express his opinion as to whether a man has suffered or is suffering from lead poisoning.
Owing to the excellent work recently done on this subject by govern­mental and university agencies, there is now some basis of diag­nosis and treatment to rely upon. The work of Doctor Aub and his colleagues done at the Harvard Medical School on the laboratory studies of lead poisoning represents a contribution of first impor­tance in the field of physiology and pharmacology of lead. This study has served to clear up many disputed points with reference to this poison and has laid bare the rational method for the treatment of this disease. The industrial physician who is now confronted with a case of lead poisoning knows that by a careful regulation of the diet it is possible to remove the lead from the circulation and store it in the long bones of the body. Once this is accomplished the toxic symptoms subside. The patient may then gradually be de­leaded by a careful regulation of diet designed for this purpose.

Again the studies conducted by this office in connection with the question as to the possible hazard associated with the handling and use of tetraethyl lead gasoline have served to throw further light on this subject. This study is an excellent demonstra­tion of the effectiveness of laboratory methods in the control of the poison hazard. The stipple cell as a diagnostic test for lead poisoning may not be beyond certain criticism, but there is little doubt that it is a very valuable aid in depicting the degree of change in the blood, due to this material. The value of the blood study of the industrial worker is greatly enhanced when made at various intervals. It is these comparative studies which inform the plant physician that changes are progressing rapidly or slowly and that transfer of the worker is or is not imperative.

There is still much to be done concerning the prevention of lead poisoning. A good deal can be accomplished by the use of efficient local exhaust ventilation to control the spread of the toxic material into the workroom air. Where the material is in the form of dust or fumes, the mechanical inclosure of the process constitutes a very excellent procedure. Where it is impossible to remove completely the substance by any means now at one’s disposal there is still the possibility of protecting the worker by the use of respirators and masks. Much can also be accomplished by the practice of personal hygiene on the part of each worker.

In spite of the fact that widespread publicity has been given to the dangers associated with exposure to carbon monoxide, this subtle gas still exacts its toll of human life yearly. Very recently the writer completed a nation-wide survey on the problem of automobile exhaust gas in streets and repair shops of large cities. The results for the street tests did not reveal the existence of a health hazard from automobile exhaust gas. They did show that the traffic officer stationed from six to eight hours a day at a congested inter­section may possibly be exposed to a health hazard, and that this potential hazard may be minimized by diminishing the duration of exposure. The results of the study made in automobile repair shops revealed a dangerous condition which demands serious consideration upon the part of health officers and sanitarians. This hazard in repair shops can be reduced to a minimum by providing adequate exhaust ventilation and also by not allowing the motors of automobiles to run longer than 30 seconds, unless the car is in necessary
motion, or the exhaust is connected to the outside air by a direct air-tight outlet of ample caliber. Without such outlet no automobile engine should be allowed to run indoors, except to reach its berth or to leave it by the shortest route. The great danger to life is unquestionably in the small private garage containing one or two cars. Under any circumstances the discharge of an automobile exhaust into a roofed enclosure should be regarded as a hazardous act. Carbon monoxide poisoning around blast furnaces, gas works, and similar establishments can be completely avoided by the use of a carbon monoxide gas mask or hose mask, whenever any work has to be done near the source of danger.

Benzol as an industrial hazard has during the past few years been receiving increased attention. The importance of this substance as an industrial hazard was the subject of a three-year investigation by the National Safety Council, in cooperation with the United States Public Health Service. In this study the nature, extent, and severity of poisoning by this substance was determined as well as the toxic quantities of material involved. This study showed that persons who were subjected to the inhalation of over 100 parts of benzol per million parts of air might be expected to come down in time with benzol poisoning, and that this poisoning could be ascertained in its earliest stages by means of the examination of the blood as indicated by a leucopenia with a decrease in the percentage of polymorphonuclear leucocytes and an increase in the percentage of lymphocytes. It was found by animal study that the higher homologues of benzene—toluol and xylol—may be used with a great degree of impunity. The use of benzol in industry is justified only where it becomes absolutely impossible to conduct the industrial process without it and then only under the supervision of the plant physician. To the plant physician should be intrusted the complete care of the workers and his judgment based on blood studies should be the sole guiding factor in deciding whether or not the worker should continue at his appointed task.

The hazards associated with the process of spray coating have been receiving much attention of late. There is no doubt that the use of the spray gun with lead paints and benzol-containing materials may constitute a very real industrial-health hazard. In the case of the application of vitreous enamels to cast iron or sheet metal, a silicosis hazard may exist unless adequate precautions are taken for the suppression of dust. These adequate precautions must be conscientiously taken if the worker is to be protected.

Quite recently attention has again been called to the health hazard in the use of mercury and mercury compounds. In 1922, Dr. Alice Hamilton and her associates presented a study of the hazards associated with the fur-cutting and the felt-hat manufacturing industries. Mercury nitrate is used in the preparation of the fur for use in making felt hats, the process being known as "carroting." Despite the highly poisonous character of mercury it continues to be used for this purpose and clinical records show chronic mercurialism among a large number of workers in the felt-hat industry. Such poisoning has also been reported among metallurgists operating high-frequency induction furnaces, where mercury vapor was found to escape from the discharge gaps of the high-frequency converters. Of
great interest at this time is the news coming to us from Germany that laboratory workers are also not immune from poisoning by this metal. In a recent article Prof. Alfred Stock of the Kaiser-Wilhelm Institut für Chemie describes typical mercurialism among his laboratory workers. Tests for mercury in the air of the laboratories revealed the presence of this substance. About a year ago the writer made similar determinations in a gas laboratory where considerable amounts of mercury were used in the analysis of rare gases. The presence of mercury in the air in sufficient quantities to produce symptoms of poisoning were found in this instance also. The objective symptoms of chronic mercurialism are manifested by a copper-colored discoloration of the mucous membrane of the pharynx, of the pillars of the fauces, and of the gums. This discoloration should not be confused with infective inflammatory processes, which it somewhat resembles. The gums are swollen, and there is enlargement of the capillaries. Superficial erosions appear upon the mucous membrane of the gums, and upon the buccal mucous membrane in the vicinity of the upper molar teeth. Perialveolar abscesses frequently occur and cause considerable discomfort. Occasionally there is an appreciable increase in the flow of saliva. Urine analysis and differential blood counts show the urine and the blood to be unaffected by the mercury absorbed. Subjective symptoms are characterized by tenderness of the gums and hypersensitiveness of the teeth, particularly those containing amalgam fillings. Activity of intestinal peristalsis is slightly increased, occasionally developing into mild attacks of diarrhea. Obstinate constipation is developed during absence from work for one to two weeks. Gastrointestinal disturbance is manifested by pain due to accumulation of gas; there is often distention and feeling of weight in the hypogastric and iliac regions. There are occasional attacks of diarrhea. Shifting neuralgic pains are occasionally felt in the various joints and in the chest.

It is felt that our knowledge of this problem of mercury poisoning is rather limited and much may still be learned by a thorough study of those industries which use this metal or its compounds. The problem of the prevention of mercurial poisoning in laboratories and industrial establishments can best be solved by enclosing all apparatus in which mercury is used and by conveying the fumes or dust away from the worker's face by adequate local exhaust ventilation. In the case of the felt-hat industry the problem would best be solved by the substitution for mercury nitrate of some less toxic compound in the process of carŭting the fur.

Quite recently the newspapers gave wide publicity to the cases of poisoning among workers employed in applying a luminous paint containing radium. In August, 1925, Castle, Drinker, and Drinker presented a paper on the subject of necrosis of the jaw in persons employed in applying luminous paint containing radium. These workers made an analysis of the possible toxic agents employed in the process of applying this paint and eliminated everything but radium. The profound effect of radium even in minute quantities on living cells is very well known. In addition, experimental evidence shows that there may be a selective deposit of radium in the bone, and that the effects of radiations of the sort emitted by radium may prevent both bone growth and the repair of fractures. Cases
of jaw necrosis in patients who have received treatment with radium for mouth cancer have been recorded. From the available literature on the subject it seems that continued exposure to radium radiation usually produces pain, sensitiveness, and anesthesia of the skin of exposed fingers or hands; burns, or destruction of the skin and underlying tissues. The effect upon the blood and blood-making organs is usually a profound leucopenia affecting both the polymorphonuclears and lymphocytes; a decrease in blood platelets; also a milder anemia accompanied by a high color index. Sterility is also not an uncommon finding.

Similar findings on the disturbed blood picture of workers exposed to radium have been reported in this country by Williams, who made a study of workers engaged in measuring radium preparations. In the case of the workers engaged in applying a luminous paint containing radium, exposure to this substance was observed through two processes, namely, exposure to radiation and absorption of radium salts by inhalation. Here again, protection of the workers should proceed along the lines of personal hygiene, adequate local exhaust ventilation, in order to minimize the danger of air-borne radium salts, and as a check that these precautions are really effective, a systematic medical examination should be carried out. Regular examinations of workers exposed to radium, including blood examinations, should be practiced. The wearing of a dental film by all workers should also be a routine procedure, since such films will reveal the exposure to radium by becoming fogged.

One can not leave the subject of industrial poisoning without mentioning the hazards associated with gases, vapors, and acid mists. Gases and vapors given off by petroleum and its products have long been recognized as somewhat injurious when inhaled in high enough concentrations. Petroleum gases and vapors have not, however, been considered as actively poisonous, in the sense that hydrocyanic acid and phosgene are poisonous. Light Mexican crude oil and certain crude oil found in Ohio have been found to contain hydrogen sulphide gas, which is much more toxic than carbon monoxide. The United States Bureau of Mines, the United States Public Health Service, and the American Petroleum Institute have recently completed a cooperative study on the toxic gases associated with Mexican and other high-sulphur petroleums and products. This investigation disclosed the fact that hydrogen sulphide gas is toxic in concentrations as low as 0.005 per cent, and men exposed daily to such percentages would in all probability suffer irritation of the eyes and respiratory tract, or subacute poisoning. As the concentration rises the effects become more intense, and the length of time elapsing before signs of severe poisoning and death is shorter. When a concentration of $H_2S$ of 0.07 per cent is reached dogs are affected almost immediately and collapse instantaneously (acute poisoning), followed by suspension of breathing, heart failure, and death. The conclusion, from the similarity between dogs and men in their response to $H_2S$, is that the above concentration would probably cause like symptoms in both. Acute poisoning by $H_2S$ acts on the nervous system and results in a respiratory paralysis that is followed by cardiac failure and death.

Protection to men entering atmospheres containing petroleum gases and vapors of $H_2S$ is afforded by various types of respiratory
apparatus, such as gas masks, hose masks, and oxygen-breathing apparatus. Each has its own limitations as well as advantages and must be used only under proper conditions. For example, canister gas masks are suitable only when sufficient oxygen to support life is present and may be used only for a short period. Hose masks protect against any irrespirable atmosphere that the wearer's skin will endure. Self-contained oxygen-breathing apparatus protects against all irrespirable atmospheres and allows much greater field of action. The weight of the apparatus and the necessity of special training of the wearer are the chief disadvantages. This apparatus can be used for about two hours. Besides protecting workers with various types of respiratory devices it is feasible to confine all gases and vapors from these petroleum products in closed systems of manufacturing equipment. Workers should be trained in rescue methods and in first-aid treatment, particularly in methods of artificial respiration and the administration of oxygen to men overcome by this gas.

The development of modern refrigeration has been the means of creating a huge new industry for the manufacture of refrigerating machines. The various substances used as refrigerants are some of our common and oldest gases, such as ammonia, sulphur dioxide, and recently methyl chloride. The latter gas, while used extensively in the chemical industries and as a local anesthetic, has received little or no attention in the literature of industrial hygiene. Since this substance has come into more general use as the cooling medium in refrigerators its toxicological importance demands attention. Quite recently Baker reported a series of cases of intoxication with commercial methyl chloride in a manufacturing plant engaged in making refrigerators. Doctor Baker found that this gas is absorbed by respiration in amounts sufficient to intoxicate workmen, unless special precautions are taken to guard against this danger. Some of the commoner symptoms are vertigo, staggering gait, sleepiness, ranging from slight drowsiness to falling asleep at work or while eating, ptosis of the eyelids, anorexia, nausea, and loss of weight. Visual disturbances were also recorded and in some cases certain patients developed a fine tremor. Methyl chloride is a toxic agent that is very slowly removed from the body and, therefore, becomes cumulative in its action. It can be detected in the urine as ammonium formate before symptoms of intoxication develop, a finding that may be used as a control of the situation by the plant physician. Upon removal from work most of the symptoms subside very slowly, it being a matter of two to three weeks before workers return to normal.

The control of the situation in factories can best be handled by inspecting all systems conveying the gaseous products and in the case of methyl chloride periodic examination of the urine for ammonium formate will detect poisoning long before symptoms of intoxication develop. In the control of the problem of escaping gases in household installations it has been suggested that the use in the main gas line of a small amount of some chemical that has potent odoriferous qualities would serve as a warning to users of electrical refrigeration that dangerous gas is escaping into the home atmosphere.

Another example of the application of a well-known chemical compound to a new process is the utilization of chromic acid in chro-
mium plating. As a result of the research carried out by various laboratories on the electrodeposition of chromium from chromic acid baths, chromium plating has now come into commercial operation and tremendous interest and activity have developed in this field. It is well known that the spray of chromic acid produced during the process of plating may be injurious to the workers, and some concern was evinced by industrial establishments engaged in chromium plating. As a result of the many inquiries addressed to this office concerning the possible health hazards involved in this process a study of the situation was recently completed by the writer. The injuries caused by chromic acid are not systemic in nature, in that they do not produce disease of the kidneys nor attack the lung tissue, but they do give rise to local ulcerations and chronic cell irritation. Breathing air containing chromic acid mist will result in definite injury to the nasal passages, this injury usually resulting in perforation of the nasal septum. Contact of abraded skin with chromic acid gives rise to ulceration and formation of "chrome holes." It was felt that although this hazard was not a grave one it did tend to lower the general physical and psychical tone of the workers and hence constituted a real hazard. The survey made by the writer disclosed the fact that in most establishments visited chromic acid was present in amounts as high as 34 milligrams per 10 cubic meters of air. Physical examinations of workers exposed to chronic acid spray disclosed the fact that practically all persons suffered from chrome ulcers and damage to the nasal tissue. As a result of this study it was possible to formulate certain recommendations to eradicate completely this hazard. By the use of a properly designed system of transverse ventilation, with an adequate air velocity—namely, 2,000 feet per minute—it is possible to remove all traces of chromic acid from the air. To be effective the plating solution should be at least 8 inches below the top of the tank and the ventilating duct should be at the top of the tank. Protective clothing in the form of rubber boots, gloves, and aprons should be used when feasible to prevent contact of chromic acid with any abraded skin. Since this study revealed the fact that a daily exposure to even as small a quantity as 1 milligram of chromic acid in the air will cause definite injury to the nasal tissue, it was recommended that periodic medical examinations with prompt treatment of the slightest skin affections should be practiced. It has been suggested that such treatment may consist of applying a wash of ammonium polysulphide and protecting the damaged tissue with a waterproof covering.

In the control of the industrial poison hazard the plant physician must play a large part, as well as the hygienist and safety expert. In general, there are three lines along which one may proceed in the control of the industrial-poison hazard. It seems obvious that the first of these must be 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 mechanical inclosure of the process constitutes a very satisfactory procedure. Exhaust ventilation may be introduced for the removal and collection of the toxic agent. And lastly, where it is impossible to remove the substance by any means at our disposal the possibility
of the protection of the worker by surrounding his nasopharynx with a mask or respirator may be worthy of consideration.

An excellent illustration of how much may be accomplished by effective ventilation was recently demonstrated as a result of some studies just completed by the office of industrial hygiene and sanitation of the United States Public Health Service. This office has for the past 10 years been investigating the hazard to health in dusty trades, and has already completed studies in the cement, coal mining, granite cutting, and metal polishing industries. As a result of these exhaustive studies it is quite clear that all types of dust when present in fairly large quantities have a real effect in increasing susceptibility to acute respiratory diseases, such as asthma, pneumonia, and bronchitis. Those dusts containing considerable amounts of free silica in the form of quartz predispose to a peculiar type of fibrosis of the lungs, which is readily followed by tuberculosis. In the study of this problem among granite cutters this office gathered detailed information on morbidity and mortality experienced by a group of 1,000 workers in this industry. Clinical and Röntgenographic examinations were made and the working environment was also studied in detail. It was to this latter problem that the writer confined his activities, namely, a study of the various processes of granite cutting and the extent of the dust exposure associated with each process or occupation as revealed by a dust count. In analyzing our information the granite workers were divided into four groups, A, B, C, and D, according to the amount of dust to which each group was daily exposed. Group A, which contained those workers making use of pneumatic tools, was found to be exposed to a concentration of dust varying from 37,000,000 to 60,000,000 particles per cubic foot of air. Group B was exposed to a concentration of dust varying from 27,000,000 to 44,000,000 particles per cubic foot of air. Group C, which contained most of the attendant labor, was exposed to the general plant atmosphere containing an average of 20,000,000 particles, and Group D was exposed to a relatively lower concentration, namely, from 3,000,000 to 9,000,000 particles per cubic foot of air. The dust in the atmosphere of these plants was found to be of a potentially dangerous size (98 per cent less than 10 microns in diameter) and contained about 30 per cent free silica in the form of quartz.

Tuberculosis, the disease most prevalent among granite workers, was studied to determine its existence in these four groups. It was found that there was a very high rate of absence from work due to tuberculosis in groups A and B, while almost no absence on account of this disease was noted for groups C and D. In studying the death rate from tuberculosis in these four groups it was found that groups A and B had a very high rate, while groups C and D suffered from an extremely low death rate from this disease. Upon analyzing the statistics for the prevalence of active tuberculosis cases by length of service in these four groups it was noted that after 15 years of exposure the percentage of active cases in groups A and B increases with extreme rapidity, whereas we found a low incidence of tuberculosis in groups C and D, even among men who had worked for 30 years or more in this industry. One may conclude from these results that a certain amount of granite dust is tolerated by the human system.
Also, in viewing our findings from every angle, there is an indication that there is a very close relationship between sickness, especially that of tuberculosis, and the magnitude of dust exposure. It would seem logical, since the excessive dustiness is intimately connected with certain occupations, that the solution would lie in the removal of dust at its source, namely, in these particular occupations. The only effective means of accomplishing this end is by the installation of local exhaust ventilation in connection with those processes productive of dust, and by housing where possible in separate quarters other activities not associated with dusty conditions. For this reason the writer made a study of the efficiency of such ventilating systems in practical operation in several of the newer granite-cutting plants. The primary difference between these newer plants and those considered in our detailed study was the use of efficient local exhaust ventilation for all granite-cutting processes.

In the plants with local exhaust ventilation groups A and B were found to be exposed to an average count of 10,000,000 particles per cubic foot of air as compared with an exposure of nearly 60,000,000 particles for the same group in the plants not equipped with efficient ventilation. Group C, which contained those persons exposed to the general plant atmosphere, was found to be subjected to a dust concentration less than 10,000,000 particles in the newer plants as compared with an exposure of 20,000,000 particles for the same group in the older plants. From these figures it is apparent that the plants equipped with efficient local exhaust ventilation have succeeded in diminishing the dust count to a point where the hazard is at a minimum. This comparison is of the utmost importance in demonstrating the possibilities in the ventilation of granite sheds by means of modern devices.

Assuming that industry must continue to use hazardous materials, and assuming that mechanical and personal safeguards have been provided for the protection of the worker, we arrive at the second real means of defense against serious poisoning, namely, the systematic and regular examination of the worker, coupled with the continuous use of laboratory tests on the blood and other body fluids. It has been pointed out how in the case of lead, benzol, or radium, we possess laboratory criteria in the form of blood tests which reveal the existence of early poisoning before serious damage has resulted. One need hardly emphasize the point further that no worker should be employed in a trade requiring the use of lead, benzol, or radium without careful control of the blood by examinations made every two or three months. Numerous instances are known in which men have become poisoned simply because the employer failed to provide the necessary medical assistance before the disease arrived at a terminal stage. The recognition by the employer of the value of the physical examination and the repeated study of the condition of the worker at stated intervals is one of the most important steps which must be made before industrial disease shall become obsolete.

The third means of defense against industrial poisoning, and one that means complete solution of the problem, is the elimination of poisonous materials in industry. The committees on benzol and
spray coating of the National Safety Council, realizing this fact, concluded:

We would therefore urge that the serious attention of manufacturers now using benzol should be given to the possibility of substituting one of these or other relatively harmless substances wherever the conditions of a given manufacturing process make it possible to do so.

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DISCUSSION

Mr. Stewart. I want just a word at this moment. Doctor Bloomfield mentioned Hoffman's figures on the death rate from lead poisoning. Now the Bureau of Labor Statistics, it is pretty well known, publishes that report, and I want you to understand that Doctor Hoffman's figures are based upon deaths. We are perfectly willing to stand by that statement, that the death rate in lead poisoning is decreasing, but to let that statement stand alone may be a little bit misleading.

That does not mean that there is such a decrease in lead poisoning among the employees, but only that the physicians have come to understand the disease better and the victims do not die. But, while I believe that, even with the increased number of industries in which some form of lead is used, it is probable that serious lead poisoning is on the decrease, yet it is going merrily on, and I am willing to
stand by Hoffman's statement when it is applied to the incidence of lead poisoning in the living worker. In the first place we now have the industrial physician, who does not have to wait until there is a blue line across the gum before he can detect lead poisoning. We also have outside physicians who know what the blue line means—a few years ago they did not know what it meant. Not very long ago a doctor sent a man to the hospital for a surgical operation for appendicitis. The physicians in the factory where the man worked found it out and rushed there in time to stop it. They were going to cut out this fellow's appendix, when as a matter of fact he had painter's colic.

As I say, I am standing by the report we have printed as to the decrease in death rate, but I do not want that to be misconstrued as meaning that there is the same percentage of decrease in lead poisoning among the workers.

The Chairman. We will have the discussion on the papers that have been read—the first paper was by Doctor Gehrmann.

Mr. Roach. I will say a word on lead poisoning. I thoroughly agree with Ethelbert Stewart, that while fatal cases of lead poisoning have probably decreased, there is still the poisoning of workers from lead, which is going along quite merrily.

I think it was in 1919 that the United States Public Health Service made an investigation of certain industries in New Jersey, Pennsylvania, and I think Ohio, one of which was the pottery industry. All of the lead workers employed in the pottery industry in our pottery district were given a very careful and painstaking physical examination by the investigators, and no cases of lead poisoning were detected, although one or two suspicious cases gave rise to the thought that perhaps they might have been affected by their work. But this very excellent result that was found in the pottery industry was due not to the fact that the industry itself was taking extraordinary precautions to prevent lead poisoning but to the fact that lead was not being used in the industry in the quantities that it had been used in the early days of the pottery industry in England.

From my experience in the inspection of factories and the regulation of dangerous employments I feel confident that if industry wants to operate carefully and free from poisoning cases it can be done, but you must remember that most of the men who are employed in these poisonous trades are illiterate men. Many of them are foreign workers who can not speak the language, and when they are placed on a dangerous job and the foreman says, “Well, Mike, be careful; if you don't you are going to get hurt,” that kind of an asinine precaution has absolutely no health value.

I do know that in one of the large plants in our State—not so long ago either—where there had been many cases of lead poisoning in the handling of dry secondary lead metals, that the plant management determined after these cases were brought to their attention—and especially, I suppose, because they are compensable at the present time and the experience rating of the plant was mounting—that it would banish lead poisoning from that industry; and it did it successfully by moistening the materials, by hiring a better class of men—that is something that is not very often stressed, that the grade of the worker in the poisonous trades has a very decided influence on
the amount of poisoning that occurs—by insisting that foremen warn these men carefully, watch them, guard them every minute of their working period, and positively insist on the men, despite the difficulty of the operation, wearing respirators.

Now, I have no brief to defend respirators. God knows I would rather go to jail myself than have to work the rest of my life in a lead plant wearing a respirator, but if that work is going to be done, a very substantial measure of protection from the effect of lead in the air can be secured by strict and stern insistence on the use of respirators. In our last bulletin a report was sent in from this plant showing the amount of protection that was given these men handling these secondary metals by the precautions that have been taken.

Lead poisoning is with us and it is going to be here a long time, and I feel sure that if the medical profession everywhere, and especially in the industrial centers where men are exposed to lead, were well informed on lead poisoning symptoms that we would have many more cases reported to our statistical bureau than we have at the present time.

Take the case of benzol: For 20 years in the Newark district they were using benzol, and I know one old gentleman over there who honestly believed that if he had the inclination he could drink benzol and it wouldn't do him any harm. He is sure that benzol will not create poisoning, because he says, "Just look at it; here I have been using it for 20 years and we haven't had a single case in this plant."

Well, Doctor McBride knows that until three years ago we never had a single case of benzol poisoning reported in the State of New Jersey, but since that time, owing to the amount of information that has been spread on the subject of benzol poisoning, and the local atmosphere of suspicion in that district that has been created by the publication of information on the risk from benzol poisoning, we have had in three years 13 fatal cases of benzol poisoning from those plants that first poison the breathing atmosphere and then try to purify it by means of exhaust ventilation. I want to tell you that it can not be done.

In the case of the handling of toxic coating substances, they poison the whole breathing atmosphere so that you can not purify it and the men working there are made sick. I think Doctor Gehrmann will back that up. I know that his company had an experience in the State of New York of such a nature that in the manufacture of certain textile leather fabrics it abandoned the use of benzol after its engineering department had decided that mechanical engineering could not make that work safe. So it seems to me that the departments generally should know this; that effort should be made all over this country to spread this information on the toxicity of these substances, on the symptoms that should be noted; and when you do that you are going to arouse public opinion to the point where substitutes will be provided for these dangerous poisons that now are taking a very heavy toll indeed.

The Chairman. I am going to call on Mr. Meade, of Massachusetts, to discuss this.

Mr. Meade. From Doctor Bloomfield's talk I gathered the very interesting information that his department has made a very careful study of the hazards in the stone-cutting industry. The department
with which I am connected has for several years also been interested
in that problem, and while we have had but a few cases of tuber-
culosis arising in that industry in Massachusetts, yet we are certain
that its incidence is more far reaching than appears upon the surface.
We have followed the plan of good mechanical procedure; we have
adequate local exhaust ventilation, and in one center in particular for
three years much of our time was taken up in securing the installa-
tion of these devices. The work was difficult at the beginning. There
were many who believed it could not be done. There were those who
said that it was a waste of time and money and effort, but nearly all
of the plants have been equipped with fairly good control at the
point of origin especially on the surface-grinding machinery used in
connection with the making of granite monuments. The benzol
poisoning experience in our State is somewhat similar to that of,
course, in New Jersey, but not on such a broad scale, not on such an
extensive scale, though we have followed up closely the use of benzol
and have required that in the inspection of every plant our repre-
sentative secure, so far as it is possible for him to do so, a list of all
of the industrial poisons used in the plant. In that way we have been
able to stress frequent inspection where there was undue exposure,
in the case of lead poisoning, or where there might be the possibility
of any exposure in the case of the use of benzol.

In one of the shoe factories in our locality, about a year ago, a
young girl, 19 years of age, was employed at a very simple opera-
tion in the applying of cement to the rubber heels that are used
upon the shoes. That cement contained a very heavy portion of
benzol, and this young girl simply inhaled the fumes. She was taken
to the hospital upon the onset of the disease, which at first was not
understood, and after three or four days died, as a result of inhaling
the fumes from that cement in which there was a large portion of
benzol.

Immediately we sought to deal with that situation by investigat-
ing the cement manufacturing industry. We found that the use
of benzol was more general than we had had reason to believe, and
in some places we succeeded in securing the use of toluol instead of
benzol. That only indicates the nature of work that our inspectors
have to do. It is true that we depend very largely upon the coopera-
tion of the manufacturer to do these things, and it is equally true
that there is a possibility that after a while there may be a relapse
into the use of benzol, and that brings up the question of constant
examination of the materials that are used in certain industrial
plants.

The papers I have listened to this morning have been very help-
ful, but after all we have pretty nearly the same experiences every-
where. In other words, those papers are pictures of the experience
of all the industrial States.

I read very carefully that article by Doctor Hoffman in connec-
tion with the incidence of fatal lead poisoning, and of course, Mr.
Stewart has brought out what is the truth. It is true that there
has been a big reduction in the number of fatal cases in lead poison-
ing. Doctor Hoffman brings out the very interesting fact, for in-
stance, that the ratio of the number of fatal lead poisoning cases
in Great Britain to that in Massachusetts and other industrial States
of this country is four to one. That is interesting, because I think it establishes at least one thing: It establishes a wider knowledge among physicians of the symptoms of lead poisoning. I think that may be due also to this fact: That through the constant publication of the experience of industrial States, and of the work done in the investigation of industrial diseases, knowledge of the surroundings of the employee in the place of his employment is now looked upon by the average physician as an important factor in his diagnosis, and it has led to the early detection of lead poisoning. That is what has caused a reduction in the incidence of fatal lead poisoning.

I think, as Doctor Bloomfield summed it up, there are two important things in all of this industrial health work; first and foremost, there is the attention to be given to the point of origin—the need of mechanical inclosure, and the need of adequate local exhaust ventilation at the point of origin—and then, finally, the work of the plant physician in looking at the blood picture and watching the physical condition of the employee. The one may be, under State auspices, quite well enforced; that is, it is within the scope and authority of statutory law—statutory power—to bring about the safeguarding of these points of origin that are harmful and dangerous to the employee. But the other side of this program, so far as the physical examination of the employee is concerned, the moment that we begin to undertake that great task under public auspices then there is no end to the trouble that may follow in its trail. The selection of employees based upon their physical condition is, of course, a safe way to exclude employees who are prone, because of their physical constitution to occupational disease. It is a good way to exclude them from that employment. In the hands of an intelligent physician that power is good—I mean what I say, an intelligent physician, one who knows the manufacturing processes of the plant, one who knows what the hazards and dangers of exposure to given substances are, and one who is preeminently practical in his diagnosis and conclusion; but in the hands of one who lacks this experience it would be a bad thing, it would be a serious thing, it would be a harmful thing to the man who must go into the market and compete for a job. There is danger in that direction, but there is no danger in requiring adequate mechanical inclosure and local exhaust equipment. When the industrial organizations of our great industrial States—I refer to those under governmental auspices—supported by those that are doing wonderful work under private auspices, when these two forces have joined and cooperated, as they certainly should do, then we will see the beginning of a better day, so far as freedom from the dangers and hazards of serious occupational poisoning for the employees is concerned.

The Chairman. I will call on Mr. Williams, of Connecticut, to discuss this further.

Mr. Williams. The great hopefulness of the entire problem under discussion this morning is due largely to the fact that, once having our attention called to dangers, we began to think about it, and then when we found it cost money, we thought more about it. It has gotten to the place now where we have a lot of physicians scattered around the country who do not have to wait until they see
blue lines on the gums to diagnose lead poisoning, but it is only a few years since that was necessary.

The installation of a department of industrial medicine at Harvard University as well as at other medical schools, for industrial physicians, is one of the most hopeful things on the horizon. Such physicians are getting to be quite well paid and quite numerous. Other medical schools can not indefinitely compete unless they have chairs of industrial medicine.

When you read some of the works on occupational diseases which were printed a few years ago, it reminds one of what Josh Billings used to say, "They had better not know so much that warn't so."

For 14 years I have administered compensation law in the headquarters of the brass and copper industries of the world. Our people visit the office in person, and I have been asked to grant awards for everything that could possibly be conceived of as arising out of or in the course of employment, and have even had the claim made for something called "brass poisoning." There are certain compositions of lead with brass where you get an occasional lead poisoning, but brass itself is not poisonous. In handling the brasses, in order to prevent structural changes in the metal they have to be greased quite often, and those greases are rather good mediums for bacterial culture, and that is where most of the so-called brass-poisoning comes from.

Now our great concerns in Connecticut who are sincere insurers are establishing industrial hospitals; they are installing students in industrial medicine, exercising careful supervision, and bringing up a line of practitioners that have far more knowledge that the ordinary general surgeon or practitioner.

It is concerns like the one which was represented here to-day—concerns which have specialists and do not wait until the man is dead, but prevent his dying—which strike the hopeful note.

One of our biggest insurers, I found to my great pleasure, was interested in our work enough to send a representative of the company down here to stay through this meeting. I think it is a very hopeful thing. Industrial medicine has become a specialized field, and there is far more need for the fellow with thorough medical education and knowledge of industrial hazards than there is for having 16 specialists go over a man before they operate on him. That thing is growing, and it can not come too soon.

There is one great factory down in my district where they had the old-fashioned wet grinding of pottery, and some mysterious dispensation of Providence caused a somewhat extensive fatality among its workmen right along for several years, but when it was discovered that the constant inhalation of particles of mingled glass and silica was not exactly helpful, that disease arose and a man's lungs were attacked, they began finding methods of doing the grinding differently. I do not think we will hear much more of that after a few years—simply to help a poor fellow whose lungs are half turned into scarred tissue already, for no matter how finely you grind the glass up it still has sharp edges on it and it will stick in your lungs.

The world is getting better all the while, and workingmen are going to be better taken care of, both for humanitarian reasons and
because it is more profitable to take care of them than it is to kill them.

The Chairman. I am going to call on Mrs. Slayback, of New Jersey, to discuss this.

Mrs. Slayback. It so happens that in my district in New Jersey there is a plant which makes cement for belts such as the girls use—such cement as that girl put on the rubber heels—and I happen to know that that cement contains nearly 60 per cent of benzol.

I have in mind at this time to link up the industries of New Jersey with the homes of New Jersey. For a number of years the departments of labor have been taking care of the industrial poisons in our manufacturing plants, but this question of benzol goes much further than the factory; it follows straight into the homes. The housewife to-day is using lacquers put on furniture by means of the common insecticide spray, which she buys for 50 cents in a hardware store and uses within her home, exposing everybody in the household to the poisonous fumes of benzol. I want to ask the men who are here this morning why it is impossible to have a poisonous label put on a can of lacquer which contains benzol? Why should not our homes be protected to the extent that the housewife will know what she is using? I have been told by men connected with my own department that lacquer does not contain benzol, but when manufacturing plants in my own district admit that the lacquer which they put out contains benzol as a thinner, I am going to believe the manufacturer. I believe to-day that we as industrial workers have not performed our full function until we get a poison label put on a can of lacquer that contains benzol or on a can of belt cement containing benzol, just the same as a druggist or chemist is obliged to put poison labels on iodine when it is sold.

Mr. Roach. I would like to speak on the question of brass poisoning. All the literature on the question up until the present day has been founded on error, because I think that Hamilton and Hayhurst and a number of other experts are able to support the theory that there is some risk of poisoning from brass, although of course it is not in the same category with lead or benzol or mercury or some of the other more toxic substances. I think perhaps the reason there is not so much brass poisoning to-day is because we are not using so much zinc in the composition. Now brass is made from copper and zinc and a small percentage of lead or some other alloy, heated to a high temperature. The zinc oxide comes off in the form of powder or gas, and the workmen get what is known as brass chills. So it would not be quite fair to the factory inspection departments to assume that in brass foundries where they are making yellow brass with a percentage of zinc in the composition there is no risk from brass founder’s chills, unless the apparatus is ventilated and the vapors are removed to the outer air.

Mr. Williams. Mr. Roach must have misunderstood me. Doctor Hamilton’s book on industrial poisons is one of the latest, one of the best, and I have got it; she feels as I do that brass itself is innocuous. I was talking about the books that were written some years ago, of what somebody in a factory told somebody else, and he told the man that wrote it.
Mr. Stewart. I want to call attention for just a minute to certain lines of articles which are being manufactured which are neither necessities nor luxuries, nor are they conveniences—they are being manufactured and sold on a pure fad basis—very many of which have a trail of graveyards behind the manufacturers.

It seems to me that the departments of labor, with their inspectors, ought to point out the fact that we are manufacturing things which are purely fads—fads that are exceedingly hazardous and dangerous in the process of manufacture. One of these articles is luminous paint, whether used on watch dials or on any other thing. Radium necrosis is even more serious than phosphorus necrosis.

I want to say one more thing. So far as I know, this is the first meeting to discuss the changes that are coming and have come in health hazards, due to changes in processes of manufacture. We get a little in the magazines once in a while about those things, but this is the first really organized discussion of this subject ever had in this country so far as I know, and the report thereof ought to be, and I propose to see that it is, circulated among the medical schools of this country to show the necessity of not only the industrial physicians, but of all physicians, knowing something about industrial disease. I have never in my life had a doctor ask me what I did, what my job was; it may be that some doctors do ask a patient about his work, but the whole question of occupation as an element of disease seems to be ignored except by the plant physicians or the industrial physicians and the physicians attached to the various State departments, and I wonder if they reach one-half of 1 per cent of the people who are really working in these poisons. I think that out of this meeting we are going to get some reaction from the doctors, get them to wake up to the fact that a very large proportion of the illnesses of mankind grows out of the kind of work people are doing.

The Chairman. Has anyone else anything to offer to this discussion?

Mr. Huber. I will drop back to Doctor Gehrmann’s paper. The Empire Refining Co. (Inc.) is greatly interested in the benzol proposition, as Doctor Bloomfield will admit, but we do not know and will not know to what extent benzol is poisonous until the courts tell us. We have depositions and testimony swearing that benzol is not poisonous, but we also have the other side, that even if you write the word “benzol” you might be poisoned. We will not know to what extent benzol is poisonous until the courts tell us, because we have 265,000 damage suits pending in the courts to-day.

We used to have any number of accidents from gas fumes—we work gas from Oklahoma to Kansas City. What our chemists did I do not know, but they find to the very second the least gas escape, and can save themselves before they are poisoned. Our safety-first department could not do it; it was our chemist who did it. I believe that for all the industries chemists can probably do us more good than can be done by discussing whether or not benzol is so deadly poisonous.

Mr. Wilcox. I never think about the question of occupational diseases or undertake to discuss the subject without mingled feelings.
of hurt and pity—hurt, because of the disappointment I feel in departments of government that ought to be carrying the message back to the legislatures on the hazards in industry of the type we are discussing and the absolute moral obligation on the part of every State to cover it under the compensation act; and pity, because of the fact that there is such a woeful lack of information on what the hazards are and what progress we might make if we would amend our laws so as to cover liability for the diseases of occupation just as we do for the effects of accidental injury.

Judge Williams said that our interest in this subject will be a great deal keener when we have to pay for something, and I think that is pretty well recognized as its effect upon safety work for the purpose of preventing accidental injury. I see no reason why the same result should not be expected to follow if our laws were amended so as to cover diseases of occupation. I say “diseases of occupation” instead of “occupational diseases,” intentionally and I do it because we are prone to think of the words “occupational disease” as meaning lead poisoning, benzol poisoning, and those few things we have been schooled to believe are occupational diseases, and forget one outstanding disease—the greatest disease of occupation of all—that is, tuberculosis. And so I say “diseases of occupation,” so that you won’t be forgetting about a lot of things of which you ought to be thinking.

Doctor Bloomfield gave a left-handed compliment to industry by saying that industry was going way ahead of the compensation work. Well, it won’t have to go far to be ahead of the States, so far as compensation is concerned, in the matter of caring for industrial diseases, because, men and women, it is nothing less than a travesty—there is just a handful of States that are recognizing any part of their problem in this field, just a handful. The last thing I did before I left my office on Saturday last was to dictate a letter to Mr. McShane, of Utah, who had written me concerning the operation of our law and particularly as to the ultimate cost of doing what we were doing. I wrote him quite at length after I had had a tabulation prepared of seven years experience in Wisconsin. We have covered every disease of occupation—understand it, I said every disease of occupation—since 1919, and we have the tabulated experience for that period. I wrote Mr. McShane, and after I had had a tabulation made of this experience—not the kind of a tabulation we would ordinarily make in our statistical department, but one on which I had help from the departments throughout the United States—I asked my girl if she would not send a copy of that tabulation and of my letter to Mr. McShane to all of the compensation departments in the United States, and so I hope you will have it within a few days, and I hope it may be of some help to you.

Our attitude with regard to occupational disease is based very much on fear—fear of the employer, fear of the administrators—that it just can not be done. I remember that my good friend Senator Duxbury at one time mentioned the fact that the reason for our failing to do some things is because of the hardness of the job; he didn’t know whether he was equal to the job. Well, I give him more credit for believing that he can not do the job, and, whether it is easy or hard, I say to the men who are engaged in this field of service that it does not do them justice when they refuse to tackle
a job because it is a hard job. God knows, if there is any group of people that needs your protection and needs the benefits of compensation it is the men who are injured by diseases of the occupations in which they work. Men who are engaged in safety work will tell you that 50 or 75 per cent of all accidental injuries might be avoided if the employee would just be careful and not be careless. It is not so with diseases of occupation; the men who are serving their masters best are walking right into these hazards and taking on the disease day by day unwittingly—an insidious attack upon their systems. If I have to discriminate as between these employees—the man who is accidentally injured and the man who is injured by the disease of his occupation—I want to know that the man who is injured by the disease of his occupation gets his compensation, whether the man who stumbles and falls downstairs and breaks an arm gets anything or not.

There is no reason for the exclusion of any injury from the benefits of compensation. If we mean all these high-sounding things we have been declaring in and out of these conventions year in and year out as to the wonderfulness of this compensation system—shouting it from the housetops—how do you satisfy your conscience when you forget about the diseases of occupation? It is a convenient conscience that fails to recognize it. It is not an expensive proposition to cover occupational diseases; and if you will cover them in your compensation act it will have the same effect as when we covered accidental injuries, and you will have all employers in the State interesting themselves in it as they are now in preventing accidents. They are not all du Pont companies that operate in the State of Wisconsin or in your States—companies which have medical experts and medical advisers, which are giving this attention constantly. The great bulk of employees are working for employers who have no medical examiners and where nobody is giving any attention to this subject. We will bring it to their attention when we amend the laws so as to cover these liabilities.

The number of States that are covering these things under the benefit laws can be counted on the fingers of one hand almost—New Jersey, New York, Massachusetts, Ohio, North Dakota, California, Wisconsin, and perhaps Connecticut—I am never quite sure what they do in Connecticut—and a number of other States perhaps touch them slightly.

I can not quit this question now without saying one thing more to you, and this is not a criticism of the administrative department in any State which has the schedule plan. I have no patience at all with that schedule. My reason for that is because it is a studied effort to deny benefits to a certain group. When Mr. Bloomfield tells us of the hazards of the stone cutting and grinding industries as to tuberculosis, we ought not to forget to cover tuberculosis in our laws, and so when you have, as you may and probably will have at this next session of the legislature, applications in your State to amend your law so as to include occupational diseases do not follow the lead of those States that have proceeded on the schedule plan. Meet this thing like men and women, and give those benefits to every man who takes on disease because of the work that he does.
Doctor McBride will tell you that he does not want you to follow the law of New Jersey and cut out a group of people that ought to be covered. Do not follow the schedule plan. When you want to know what it costs, inquire of those States that are giving full coverage. It costs little more to cover them in Wisconsin than it does in Ohio, where they have the schedule plan. When our law was adopted in Wisconsin the compensation rating and inspection bureau, and the compensation insurance board had to deal with the question of how the rates for insurance coverage were to be loaded to cover this disease. We had no experience to go upon, so we put 1 cent in the rate. If the rate was $2, that made it $2.01; if it was 9 cents we made it 10 cents. I am not upholding that at all, but we agreed that within a year we would make a study of the thing and get it on a scientific basis. At the end of the year we were convinced that after all when you had put up to the employers of the State (and you will find the same thing when you put it up to the employers of your State) that they have to take care of these things, they will do as Doctor Gehrmann is doing. They will find out what the hazard is and will protect their men from it. Then it won't cost you anything, because you can save these men from occupational diseases. God only knows whether you can save them from accidental injuries. At the end of the year we took the 1 cent out and it has not been in since. The rates in Wisconsin for compensation coverage now, including all occupational disease, are based on identically the same premium that they collect in the State of Illinois, where they do not have much of any coverage of diseases, and New Jersey, and New York, Massachusetts, and all these other States.

Mr. Duxbury. Put Minnesota in.

Mr. Wilcox. Yes, and in Minnesota. We took out the 1 cent and we are now having our full coverage, including occupational diseases, without one red penny in the rate over and above what the other States are collecting without that coverage. It would be an insignificant thing. When you once get to work you will save these men from these injuries, and it will not cost you more, except work such as Doctor Gehrmann and these other people are doing in the highly organized plants where they are giving attention to these subjects.

If there is anything in the table which you receive from Wisconsin on which you want additional information or on which we can be of help to you, we want to give it. I do not see how a compensation administrator can turn his back on the man who suffers with an occupational disease and tell such man that the law does not protect him, and that the administrator can not do anything for him, and then forget about it when the legislature meets.

Doctor McBride. We ought to get all the information we possibly can on this question of occupational diseases, as it is of tremendous importance. We, as leaders in this field, ought to supply all the information we can.

Mr. Coleman. Last year the medical director of one of the compensation clinics of New Jersey was invited to present a paper before their industrial hygiene session of the American Public Health Association on the medical aspects of occupational disease. As a result a committee of some of the leading industrial physicians of the United...
States was formed to adopt standards for compensation in the matter of occupational diseases. Our committee has had several meetings during the past year and is presenting its first report at the meeting in Chicago next month. I have here a copy of that report; of course, I am not permitted to read it in its entirety, but I want to read a paragraph or two following Mr. Wilcox's remarks:

We have in this country therefore two different methods of dealing with the problem. A blanket law is theoretically best and appears to work well where in use, but there is a very prevalent opinion among those directly concerned with compensation work that definite and specific schedules facilitate administration and are beneficial to the industrial worker in that they tend to promote legitimate compensation cases; the schedules may be unfair where the compensation of process is specified. It is difficult to conceive why one individual should secure compensation for a scheduled disease and another with the same disease be refused because he happens to be in a different occupation.

It is obvious also that occupational diseases must present distinct problems for lay officials. It should be the duty of a State medical officer or officers to establish whether an individual claimant has or has not the disease for which compensation is sought, rather than leaving the matter of diagnosis to the contention of opposing physicians and lawyers. Such contentious procedure nullifies the concept underlying compensation laws. With skilled official medical service available to compensation tribunals, it would be possible to carry out with a higher degree of efficiency means for the prevention and control of occupational disease. In this connection recognition must be given to the necessity of establishing occupational disease clinics under State auspices. Such clinics would aid in diagnosis, insure proper treatment, and add to our knowledge of the extent and character of occupational disease.

I can think of no better way for this conference to study this matter than to appoint a committee to act in cooperation with the committee from the industrial hygiene section of the American Association of Public Health.

Mr. Duxbury. I have been listening to this discussion to-day and the papers yesterday afternoon with more than usual interest. In fact I believe some of my friends here will wonder why it was that I did not say anything. I can usually talk about things that are not serious, but when I get real serious then I think.

My friend Mr. Wilcox has intimated to you that I had an attitude of mind that suggests a constitutional laziness; that the minute things get really difficult, I lie down on that. I do not think he quite meant that; he knows me a little too well for that. Still it does not do any harm once in a while to realize, so far as we can, the possible consequences of some proposed change.

I am thoroughly sold on the principle that there is just as much reason for compensating disability incident to industry or occupational disease as there is for compensating disability incident to industrial accident. There can not be any distinction. If the one is justified the other is. It is just as important to the workman and to his family and to society that the consequences of his occupation, resulting in his disability through a thing that may be called disease, is taken care of, as it is that that same situation is taken care of when it is the result of accident. That has been recognized, and then we approach the question with a great deal of caution because of various reasons.

Remember the closing remarks of our venerable secretary; when he sat down he indicated that there was a possibility and a probability and a growing conviction in his mind that nearly every disease that
men and women suffer from can be traced in some measure to their occupation; that their occupation is making them sick and killing them. That conception scares people; it makes them afraid to undertake such compensation; it scares legislators. They think if this thing is thrown wide open that every sickness of the workingman and the death of every working man or woman will mean compensation. They are afraid of that extreme, and because of their fear in relation to that they adopt this nonsensical plan we have in Minnesota, and which they have in New Jersey, and which they have in some other States, that limits compensation to just the particular few things that we call occupational diseases. We are guarding against that unseen danger of which we are afraid.

Over in Wisconsin they are not afraid of anything. Mr. Wilcox is a regular John the Baptist, and he impressed the faith that they have upon them, and they took the plunge. He has told you their experience and I am looking forward when I get home to the pleasure of reading that letter which he said he wrote. I have gradually become convinced that that apprehension is not very well founded and that it involves a question of wise administration of the law. Of course they have wise administration of the law over in Wisconsin; we all know that. Whether we are wise enough in Minnesota to administer the law or not may be reasonably questioned, but the thing ought to be done, because if the compensation commission of Minnesota has not got ability enough or sense enough or is too lazy properly to administer the law, we ought to resign and let somebody else do it. We ought not to shirk a responsibility; and while I admit that I am one of those timid souls that sometimes hesitate to assume things that are involved in so much difficulty, I do not think that ought to be any excuse for Minnesota not making the laws it ought to make. If I am unfit to administer the law I ought to resign, or not be reappointed when my term expires; but there is difficulty. I am always seeing things in the dark and I can see that if we start out along the line that Mr. Wilcox suggests, that the State of Wisconsin and every other State that does that will have to realize that they are only in the kindergarten stages of the subject. I do not know what they do in Wisconsin with reference to some things I am going to suggest, but in Minnesota, in the present state of our law, if we have an occupational disease that results in temporary disability coming within our schedule, we can compensate for the temporary disability and we can furnish medical treatment, hospital treatment, to cure or to relieve as far as possible; but in many of those instances we can not bring them back so they are 100 per cent—they are going to have some consequences in the nature of permanent partial disability. Do our schedules take care of that? No. What are you going to do about that? Some of them do; over in Wisconsin they have a system by which under the wise administration of their present commissioner they can probably take care of that.

We have a system by which we are required to guess at the presence of disability or loss of use of that most wonderful instrument of creation, the hand, and we do that, but as a matter of fact who knows enough to say whether there is a 20 per cent or a 40 per cent loss of use of the hand. Percentage means a certain portion of the entire
use and that entire use is the most marvelous thing in the world. When you get a disability resulting in a general physical disability, that a man is not as good as he was before, he is not 100 per cent—no two are alike, you know—you have to know what his normal condition was when he was all right. Now he is not normal, he is not quite as efficient as he was before, and you have to determine humanly, with human instruments, with the human mind—which I admit is very limited—just what percentage will compensate that.

I do not mean, by mentioning that, that we ought not to start on a right basis, because I believe that we can determine the effects of occupational diseases just as accurately as we can determine the effects of accident. Some of your laws will have to be amended. Our law will have to be amended, because our supreme court in its wisdom held very definitely some time ago that there was nothing in the schedule in our law which permitted us to compensate a person upon the ground that he had lost a certain percentage of his general efficiency. In other words, we have a schedule for permanent total disability. It might be admitted that he was not totally disabled; because of the condition of his back or something of that kind, he is never going to be as good as he was; but we have not a single schedule that applies to his case. We can only say that in our judgment he is one-quarter permanently totally disabled—that is, one-quarter of his total efficiency is gone—but we have no schedule for that. The court said that as we have no schedule for that we can not compensate for that, and that is true in most of the jurisdictions.

We have in Minnesota what they call a pretty good law as tested by the ordinary tests of compensation laws. We have a $20 maximum, we have unlimited medical care, and we have a lot of the things that go with a high-class law, but I have got to the stage where I say that our law is a regular cruelty, and we might as well admit it and commence to make it better. Get away from this bigotry about the virtue of your laws, condemn them, and try to find out what they ought to be, and have courage to recommend it. I am going to.

Mr. Wilcox. I did not mention Senator Duxbury's attitude, because I thought he was lazy or anything of the kind; I want everybody to know that I think he has the ability to administer any of these provisions. What I wanted to do was dispel from your mind the thought that the administration of an occupational disease amendment in your law is a hardship. It is nothing of the sort. You can administer it as easily as you can administer any other feature of your law. I think it is too bad, men and women, when we who have been selected to administer these laws, who surround ourselves with the finest type of employees for examiners and investigators, who take doctors into our confidence, and who go on year in and year out determining the extent of the disability to that finest of members, the hand, say that we have doubts and that we do not think we can do it, when you and I know that we will submit our home rights, our family rights, our property rights, everything in this world, to a jury of 12 men selected, not because of the things that they know about the job that they are tackling, but because of the things that they do not know.
It is the experience of every lawyer, every man who has had trial experience in common-law damage suits, that when the question of the dangers of electrical current and electrical wires and so forth are involved, we would never permit an electrician to sit on the jury; and if it was benzol poisoning that was to be considered, Doctor Gehrmann would not stand a chance of getting onto this jury of 12 men. We submit it to a barber and the fellow who digs in the ditch, and other men who are good and fine so far as their job is concerned but who know absolutely nothing of this field. We do it because—well, we want to play on the chance of a jury throwing the thing our way instead of some other way.

Just one more word about the gentlemen's remarks about the retention of the schedule. When I used the word "schedule" I meant a provision, and I was thinking of it only as the provision which excluded certain diseases because of the fact that they were not mentioned; that is the purpose of a schedule. I was not thinking about this other thing, where you evidently—I didn't know that that was so—compensate for lead poisoning if it comes from one particular plant, but if it comes from another plant then you do not. Well, I have less patience with the schedule which refuses to compensate for lead poisoning because it occurs in factory A rather than in factory B than I have with the schedule which eliminates certain types of occupational diseases altogether. To my mind it has no place in any law.

Mr. Stewart. For the purposes of the record I want to say that 12 States and the United States Government compensate for occupational diseases. These are California, Connecticut, Hawaii, Illinois, Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Porto Rico, Wisconsin, and the Federal act covering longshoremen and harbor workers, the Federal act covering private employment in the District of Columbia, and the act covering Federal employees. Some of these have very broad coverage, and have not found it at all expensive. Mr. Leslie, of the rate-making bureau for the insurance companies, says that the companies usually figure the increase in the rate at 2 per cent, but he thinks that is high and that they are going to come down to 1½ per cent. Now that is the case, so far as scaring the legislature is concerned.

What I meant by the statement that in my judgment a vast majority of the illnesses grew out of occupation was not intended to be flaunted before the legislatures at all. I thought I made it perfectly clear that we ought to call the attention of the medical universities to the fact that every physician that is turned out and every physician that gets a license to practice ought to know enough about the facts in the case at least to ask a man his occupation and determine from that information what the remedy should be. That remark was aimed at the universities and not at your legislatures. As to the cost of this thing, so far as our experience is, 2 cents is the maximum and nil is nearer the case.

Mr. Duxbury. Just one word. I made a reference to what our friend, the secretary, said just for the purpose of trying to indicate the extreme view that some people have on the subject. Of course, I knew he didn't mean that, and you knew he didn't mean that, because he, like myself, is apt to indulge in extravagant expres-
sions. One more thing I want to say. It is quite remarkable how we are impressed with the importance of including occupational disease within our law, all admitting practically that it is a momentous question of vast importance. Now they say it is not going to cost anything. Either it is not of very much importance or else it will cost something; that is all there is about it.

Mr. Kennard. I have only a word to say, and I say it with reluctance because of the kind things that have been said about Massachusetts with reference to occupational disease, which perhaps should lead me to keep still, but in fairness I do not think I should let the statement of Mr. Wilcox go without explanation. He listed Massachusetts among the jurisdictions which cover occupational diseases. That is not so. Our supreme court has said specifically and categorically that our law does not cover occupational disease, and I think I am quoting it exactly, word for word.

Perhaps a word of explanation. We have awarded compensation in Massachusetts for lead poisoning, for benzol poisoning, and even for tuberculosis, pneumonia—in short, we have awarded compensation for diseases in many cases—but we always have to find, in order to sustain such a decision, that the inception of the disease, or one of the predominating, aggravating causes, one which can be demonstrated as being an aggravating cause of that disease, has the characteristics of an injury. In other words, our law is based upon injury and in order to cover disease there must in the first instance appear to have entered into that disease as a factor something in the nature of an industrial injury. The subject is somewhat complicated, but that is the best explanation I can give to you in the few minutes that I want to take.

We do have in Massachusetts, and we have it now, a good deal of agitation over health insurance, because if I understood Mr. Wilcox's proposition that is what he wants—health insurance confined to industrial workers. Our health insurance law has attempted, so far as it has made any progress, to be inclusive of all inhabitants rather than being confined to industrial workers.

Mr. Maguire. I would like to say a few words in regard to Pennsylvania. I was very much interested in the remarks of Mr. Wilcox and Mr. Duxbury relative to the inclusion of legislation for occupational diseases, especially so since Pennsylvania does not now have that provision in its law.

The situation in Pennsylvania is exactly like the situation in Massachusetts, just stated by the gentleman from Massachusetts, but I feel that there has not been enough information disseminated throughout the State relative to occupational diseases; there hasn't been any association actively in back of legislation of this kind.

So far as I know, the Legislature of Pennsylvania met and amended the workman's compensation law at its last session; there was no effort—at least not an active effort—except in the labor department itself, urging the passage or the amendment of the law to include occupational diseases. That is purely my own impression. There might have been something that I do not know of. However, I think that it is incumbent upon some organization, whether it be this or the National Safety Council or some similar
organization, to appoint a committee on compensation legislation to go into the States when the legislatures are meeting and promote the enactment of legislation in which they are interested. I do not think that it would be at all unconstitutional for this association to do it.

I want to say this: Mr. Stewart said that he would see to it that the universities were circularized relative to the training of industrial physicians. I feel that if it is worth doing that, it is worth while working up a good paper on the advisability of the enactment of occupational disease legislation for dissemination and distribution to the legislatures in the various States.

I am sure that if you can prove to the legislators of Pennsylvania that it will not cost the manufacturers or others a cent to compensate occupational disease, they would be willing to pass such legislation.

[Meeting adjourned.]
THURSDAY, SEPTEMBER 13—AFTERNOON SESSION

Chairman, Walter O. Stack, President Industrial Accident Board of Delaware

ACCIDENT PREVENTION

The Chairman. The chairman wants to congratulate you on the splendid program for the afternoon; the subjects are of vital interest, not only to the employers and employees, but to society and the home. The first paper will be "What is being done for safety in Canada," by R. B. Morley, of Toronto, Canada.

What is Being Done for Safety in Canada—The Work of the Industrial Accident Prevention Associations

By R. B. Morley, general manager Industrial Accident Prevention Associations, Toronto, Canada

It is with the keenest pleasure that I come before the fifteenth annual convention of the International Association of Industrial Accident Boards and Commissions to tell you something of the work being carried on by the Industrial Accident Prevention Associations. Your close contact with the whole accident situation makes each of you a friend of mine and enables me to talk as among friends.

During the early part of the summer, I had occasion, while I was away for a short holiday, to call on the village blacksmith and ask him for a sufficient number of horseshoes to enable us to have a game of quoits. He very obligingly referred me to the pile at the side of the shop, from which I extracted a sufficient number of discarded horseshoes. Carrying these along the village street on my way back, I was hailed by an old man whose remark was something like this: "Quoits to-night? Well, take care and take out all those nails so that you won't tear your fingers." The old man naturally did not know that I had been professionally in safety work for nearly 15 years, but he was passing on to a stranger the benefit of his own experience and indicating the method of avoiding an accident.

Ontario’s Compensation Law

The late Sir William Ralph Meredith, chief justice of Ontario, was appointed by the Government to make a report on the question of compensation for injuries and that report resulted in the workmen’s compensation act (Ontario) which became effective on January 1, 1915, and has served as a model for all compensation laws in Canada. That act has rid industry of litigation in dealing with accidents to employees and has made for promptness and certainty of payment to injured workers without unduly burdening the employer.
sis of our act will, I believe, reveal that it is the most generous in its benefits to injured workers and I say this without disparaging any other jurisdiction.

Organized Accident Prevention

While the act was being framed, industry suggested that there should be some effort made at organized accident prevention and a section was added to the act which authorized the employers to set up accident-prevention associations. This section, with amendments to date, reads as follows:

(1) The employers in any of the classes for the time being included in schedule 1 may form themselves into an association for accident prevention and may make rules for that purpose.

(2) If the board is of opinion that an association so formed sufficiently represents the employers in the industries included in the class, the board may approve such rules, and when approved by the board and by the lieutenant governor in council they shall be binding on all the employers in industries included in the class.

(3) Where an association under the authority of its rules appoints an inspector or an expert for the purpose of accident prevention, the board may pay the whole or any part of the salary or remuneration of such inspector or expert out of the accident fund or out of that part of it which is at the credit of any one or more of the classes as the board may deem just.

(4) The board may in any case where it deems proper make a grant toward the expenses of any such association. (Added by sec. 30, ch. 24, 1915.)

(5) Any moneys paid by the board under this section shall be charged against the class represented by such association and levied as part of the assessment against such class. (Added by sec. 30, ch. 24, 1915.)

(6) The word “class” in this section shall include subclass or such part of a class or such number of classes or parts of classes in schedule 1 as may be approved by the board. (Added by sec. 30, ch. 24, 1915.)

Accident prevention is fundamentally sound from either the economic or the humanitarian point of view, and under section 114 of our act the plants in 18 out of the 24 classes of industry have set up accident-prevention organizations.

The compensation act, as I said, came into effect on the 1st of January, 1915, and on the 12th of February of that same year, or about six weeks later, the Furniture Manufacturers Safety Association (representing employers in class 3) was incorporated and began its work.

Industrial Accident Prevention Associations

The Industrial Accident Prevention Associations is a federation of 15 of the 18 associations established under section 114, with final federation having taken place a little over 11 years ago, or to be accurate, on July 17, 1917.

The objects of the Industrial Accident Prevention Associations are:

(a) To coordinate the activities of the various safety associations comprising the membership, so that the work may be done with the greatest efficiency at a minimum cost. (b) To cooperate with employers and employees in safety work and in a general safety campaign to reduce accidents and industrial disease, for the benefit of both employer and employee. (c) To make rules for the prevention of accidents and industrial disease, such rules to be binding upon employers in the various classes comprising the membership when approved by the workmen's compensation board and the lieutenant governor in council. (d) Generally to do such things as may reduce losses due to accidents, including matters authorized at any special or general meeting of the association. (Added 28.2.22.)
The organization is controlled by a group of directors who are elected annually from among the 15 classes included in our membership. Those directors give unselfishly of their time and effort and I have yet, after seeing various types of organization work, to find another group of men who will devote so much thought to voluntary work.

As I said, I have been in safety work for nearly 15 years and I should probably be one of the last men to advise against taking a chance. I know that chances have to be taken by individuals and by groups of individuals and our whole campaign of accident prevention is built on the thought that the unnecessary chances should be eliminated and that safety and efficiency go hand in hand. Remembering this, we have built up an effective inspection force under our chief inspector. These men are trained for accident-prevention purposes and their duties take them into approximately 7,000 plants each year. Their object is accident prevention and not the enforcement of rules and regulations, although their work is based on the general rules and standards of the Industrial Accident Prevention Associations which have been approved by the workmen's compensation board and the lieutenant governor in council, and are enforceable. We have preferred, however, to adopt the idea of education and cooperation rather than legislation and compulsion. Each member of the field force goes to a plant with a general knowledge of conditions in industry and with certain information regarding the specific situation in that plant for the past several years, and his inspection, therefore, means a practical service to the industry. Inspectors are carefully instructed in their work and are trained for accident-prevention purposes from all sides; that is to say, if the correction of physical hazards is requisite in the plant, the inspector will recommend that such be done, and if it is a matter of a plant meeting, with or without motion pictures, so that the employees may be reached, the inspector will handle this phase of the situation as well.

In addition to the inspection services, we are enabled to keep a close check on the general experience of the industries included in our membership, as we receive from the workmen's compensation board, with which there is, of course, the closest kind of contact, brief reports known as accident memos, which give information regarding accidents on which claims have been made and which, in most cases, involve a loss of seven days' time or more and, consequently, mean compensation to the injured worker. These accident memos are invaluable in enabling us to check the experience of the various firms on our lists, and the information sent to industries whose accident frequency was running too high has frequently resulted in a complete change in the experience of that plant.

Nearly seven years ago, the directors of the associations approved of the distribution of safety literature and this now means the Monthly Memorandum for Industry containing information of interest to the executives, safety bulletins for shop posting, pay envelope inserts, special cards and leaflets and, once a year, the safety calendar.

The annual safety convention of the Industrial Accident Prevention Associations has served to demonstrate in an effective way that industry will cooperate in accident-prevention work. The last convention of the associations was held at Hamilton, Ontario, on the 8th.
and 9th of May, and we had 1,110 registrations there, which was an increase of approximately 25 per cent over the former year. The convention lasted for two days and outstanding speakers from the United States and Canada were present. Too much emphasis can not be laid on the value of meetings of that type and the effect on plant men through their contact with others interested in safety work.

The associations, as has been noted by the reference to section 114 of the workmen's compensation act, derive their funds from the workmen's compensation board and we operate entirely on the budget system, that is to say, each year, in November, a budget is prepared for the following year. That is submitted to the December meeting of our executive committee and after that committee is satisfied, the budget goes to the workmen's compensation board, which body has invariably accepted the recommendations of our committee. The budget of the Industrial Accident Prevention Associations as approved for 1928 was $93,720. This may not appear a great deal against a total pay roll of about $300,000,000 of the membership of the associations, but it must be remembered that our $93,000 does not, in any way, include the safety work being done by the individual plants. They, of course, provide their own safeguards and carry on certain forms of safety work, as directed by the management, and in the last analysis I look upon the getting and holding of the interest of the executives as the most important part of our work.

The Cross Roads of the World

In June, 1925, Mr. Albert Thomas, director, International Labor Office at Geneva, wrote to me saying that the Governing Body of the International Labor Office had set up an advisory committee in connection with certain phases of their work and an invitation from the Governing Body was extended to me to act on the safety subcommittee as the representative from Canada. Since that time, I have had the pleasure of acting on that committee and in November, 1927, sat in at Geneva as a member of the committee when representatives from Great Britain, France, Germany, Finland, Switzerland, Italy, Belgium, Holland, and Canada framed the report which was discussed at the meeting of the International Labor Office in May of this year.

Geneva has been called the “crossroads of the world” and at present Geneva is an international city to an extent that can exist in no other part of the world. When we find representatives of the 55 countries included in the League of Nations discussing accident prevention there, we must believe that a new day has dawned for the accident-prevention movement.

Results

The heights that great men reached and kept
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward through the night.

Accident prevention is like everything else; you can not get something for nothing. Some plants have undoubtedly reached great heights in their accident-prevention work. In Chatham, Ontario, for instance, the International Harvester plant there, manufacturing
wagons, operated for over 900 days without a lost-time accident. The Port Colborne plant of the Canada Cement Co. went over 521 days. Recently, the Point Anne plant of the same company has beaten that record and both of these plants, as well as their plant at Hull, Quebec, and the plant at Fort Wayne, Manitoba, have won the trophy of the Portland Cement Association in the last several years. Larger and smaller plants have operated for months and in some cases years without a lost-time accident or have made most extraordinary cuts in their accident experience by paying adequate attention to the problem in their individual plants. This is proof of the statement that accident prevention is something that can be accomplished, but you can not get results by sitting down and hoping that something good will happen. There must be what the Honorable Doctor Cody, speaking at our safety convention in Toronto some three years ago, termed “the will to safety.”

Employers’ Functions in Accident Prevention

It must be accepted as a fact that the operating executive of a plant can do more than anyone else in that plant to secure results. These points are suggested as functions of the employer:

1. The operating head of the industry must be convinced of the necessity for and the desirability of effective accident-prevention work.
2. Safety must be made part of the production program of the plant.
3. An analysis of the accidents in that particular plant must be made and compared with the general experience of other lines of industry.
4. Safeguarding of mechanical and process hazards must be carried out.
5. Supervision of all ranks must be carefully checked.
6. Plant housekeeping must be given its proper measure of attention.
7. Safety education of all ranks through bulletins, pay envelope inserts, plant meetings with motion pictures should be carried on continuously.

The heart of the objects of the Industrial Accident Prevention Associations is that phase relating to the cooperation with employer and employee. The associations stand, therefore, in a peculiar light. We have been able, through the policy adopted by our directors, to carry on a campaign which has produced concrete results and at the same time avoided any clash with either employer or employee. We have all been “fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer.” The prevention of accidents has a significance far beyond material value, that is to say, an incalculable human significance, and on this ground alone it is and must continue to be a practical and satisfactory form of industrial activity.

The CHAIRMAN. The next paper is on the subject “What accident prevention can do,” by John P. Meade, of Massachusetts.
What Accident Prevention Can Do

By John P. Meade, director Division of Industrial Safety, Department of Labor and Industries of Massachusetts

The principle of compensating workmen for injuries arising out of and in the course of their employment is to-day an integral part of the industrial system of the United States. This movement had its origin in the belief that the consumer should bear some part of the burden just as he ultimately carries the cost of plant and machinery depreciation. Employment injuries are an outstanding problem in the social order. They affect the individual, the family, and the home. This experience is common in the administration of workmen's compensation laws.

In the last decade the economic and social effect of work injuries has become well known. It is now possible to appraise the loss of man power to industry in the States operating under the workmen's compensation law through a study of its tabulatable injuries, particularly those resulting in permanent partial disability or ending fatally. Through the compulsory reporting of industrial injuries, these facts have been made known and the human side of industry is made apparent in the light of this experience. It is this feature of the workmen's compensation law that will accomplish more for employees and the social order than the payment of compensation because of incapacity due to industrial injury. Through this instrument, the public conscience has become aroused and intelligent action focused upon this problem. Fatal injuries among those actively engaged in providing for their families; dismemberment accidents, including the loss of limbs, to mechanics who served years of apprenticeship in the acquisition of their trade; sudden deprivation of eyesight through traumatic eye injuries to men employed in the operation of intricate machinery; and loss of health and physical power because of the inhalation of poisonous fumes—now challenge the attention of governmental activities for accident prevention.

Exercising the police power of the State to make work places safe and conserve the human side of industry established new jurisdiction for law and better control of machine dangers. The development of this principle in places of employment brought increased protection to workmen and reduced the severity of machinery accidents. The old law was concerned only with outstanding dangers in power transmission equipment. It provided generally that the belting, shafting, gearing, and all machinery having movable parts in all factories, workshops, and mechanical and mercantile establishments, if so placed as, in the opinion of the State department, to be dangerous to employees while engaged in their ordinary duties, shall be securely guarded as far as practicable. This simple declaration constituted nearly all of the legal machinery enforced by the police power to protect employees from injuries arising out of and in the course of their employment. Such legislation did not reach the source of many painful injuries. It accomplished nothing in the way of dealing with accidents sustained at the point of operation.
In recent years the growing interest in the problem of consequences due to industrial accidents led to a movement for the better protection of employees working at the hazardous trades. Legislators had experienced the difficulty of formulating effective measures dealing with a question requiring technical and expert knowledge. In some States the legislators had decided not to attempt to enact laws specifically dealing with the point of operation of machinery, but remained content simply to declare in the statutes that work places must be made safe. The need for more definite provisions to safeguard employees from dangerous exposure became better known. Legislatures passed enabling acts authorizing governmental departments to make rules and regulations to deal with intricate dangers in work places. The movement for accident prevention then reached a higher plane of efficiency. It marked a new era in conserving the human side of industry. Statutory provisions were enacted, defining the procedure in this connection, laying the foundation for a system of legislative requirements resting upon the basis of expert knowledge of machinery construction and intimate acquaintance with the causation of industrial injury.

Many of the industrial States embarked upon an extensive plan in code making, while others seemed inclined to a more moderate use of this power. This would indicate that the accident experience in each State might have been used as the basis for its activity in the development of this system. Reason, good judgment, and experience seem to approve this procedure. Accident records are now available in all of the industrial States, clearly defining the danger zones in industry. When it is evident that more than one-half the permanent disability injuries in a State occur in two industries and further investigation narrows the hazardous exposure to a few machines, efficient rules and regulations for the protection of employees will deal comprehensively with these definite points. Enforcement of law under these circumstances is more productive of actual progress than a code with a multitude of provisions that fails to deal adequately with fertile sources of machine injuries.

This policy was followed in Massachusetts and codes adopted by the department of labor and industries include rules and regulations dealing with machinery standards; working conditions in foundries and the employment of women in core rooms; the prevention of accidents in building operations, and pertaining to the painting business; requirements for the care of employees injured or taken ill in establishments; for the safeguarding of woodworking and power punch press machinery at the point of operation; lighting code for industrial establishments and suggestions for the prevention of anthrax, and safety in the manufacture of benzene derivatives and explosives.

It may be of interest to know what this system of lawmaking for the control of industrial hazards and the prevention of industrial injury has accomplished. Not only has it directed attention of employer and workmen to the need of joint cooperation in accident-prevention work, but injuries because of contact with machinery have been reduced.
Machinery accidents for the years ending June 30, 1919, and June 30, 1927

<table>
<thead>
<tr>
<th>Cause of accident</th>
<th>1919</th>
<th>1927</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injuries at point of operation</td>
<td>14,764</td>
<td>5,651</td>
</tr>
<tr>
<td>Accidents caused by belts</td>
<td>711</td>
<td>191</td>
</tr>
<tr>
<td>On gears</td>
<td>702</td>
<td>298</td>
</tr>
<tr>
<td>By projecting set screws, keys, and bolts</td>
<td>49</td>
<td>15</td>
</tr>
<tr>
<td>All others</td>
<td>2,264</td>
<td>2,354</td>
</tr>
<tr>
<td>Total</td>
<td>18,490</td>
<td>8,509</td>
</tr>
</tbody>
</table>

A reduction in the severity of injuries has also taken place. In 1919, out of a total of 67,240 tabulatable accidents 1,750, or 2.60 per cent, included permanent partial disability injuries. In 1927, out of a total of 64,167 tabulatable injuries, the number of permanent partial disability cases dropped to 1,232, or 1.92 per cent of all tabulatable injuries for that year. These injuries included loss of fingers, thumbs, hands, toes, feet, limbs, and the sight of eyes. Even in the absence of comparative information regarding exposure hours, there is ample proof that machinery accidents and their severity have been reduced.

To accomplish efficient accident prevention work, such activity must be made an integral part of business policy. The management must be convinced that such work is practical and that it is essential to the progress of the concern. Foremen and superintendents should be made to understand that the work in this connection is an important part in their service to the company. Employees must realize that this movement is one of importance to themselves and their families. The cost of labor turnover caused by industrial injury, the increased spoilage of machinery, and losses in materials are frequently traced to the same cause. The competent factory official now realizes that the cost of injuries to employees may be almost accurately appraised and that cost systems are incomplete which do not provide adequately for the inevitable outlay in this direction. In many instances, large corporations carry on accident-prevention work because of the compelling reason that it is cheaper to do so than it is to pay for work accidents. Others find a satisfactory reason for maintaining such work in the knowledge that industrial accidents should be reduced in the interest of the individual, the home, and the community.

Experience has demonstrated the value of efficient plant organization in keeping work places safe. Well-defined principles of action now provide the basis for intelligent direction of this type of safety work. These include the locating of plant dangers or working hazards and establishing cooperation between employees and management in correcting them and in reducing exposure to injury. In an organization founded on this procedure, with the supervisory officials participating in the active work with the employees, accident-prevention work reaches its highest practical value. On the other hand no progress is made when a safety organization becomes indifferent to its possibilities for the saving of human life and is allowed to become inactive and to fail in the performance of its duty.
Organized accident-prevention work has proven its value in every plant where it has been given a fair trial. It is the general experience in all the industrial States that where this work is done well, a substantial reduction in the accident rate has taken place. Industrial establishments everywhere have found this to be true. Work of this kind made it possible for a large corporation in Massachusetts, employing 2,700 people, to operate eight consecutive weeks in this year without lost-time accidents. In four of these weeks there were 493,109 man-hours' work. Well-organized safety committees meet regularly in this plant and interest is steadily maintained in the work by the executives of the corporation. Accident-prevention work is directed by a central committee, with the advice and assistance of a well-qualified safety engineer. Each room in the establishment has an individual whose work will take him around to each part of it and this employee spends a half hour daily on routine inspection work as laid down for him by the safety committee. This includes looking after floor conditions and passageways, observing processes in which industrial poisons are used, examining doors and windows leading to fire escapes and egresses, and noting that employees do not remove machinery safeguards without permission. Each of these departmental safety men is provided with a metal badge containing the company's authorization for its use. Through this system, defective factory conditions are located and corrected; falling on slippery floors prevented; safeguards required by law are used; objects over which workmen may stumble and fall are kept out of passageways, and immediate first-aid treatment of cuts and bruises is insisted upon. Finally, workmen are taught to refrain from dangerous practices sure to result in painful injuries. These are some of the practical things accomplished by an active organization in which workmen and employers join to protect human life and health and the conservation of the productive power of labor. This is the most potential means by which employment accidents and diseases of occupation may be prevented.

Again, this committee investigates every serious work injury and fixes the responsibility for its occurrence. All of the factors present in the case are carefully examined. This information becomes a matter of record and is available for the use of the committee. Through this practice, a system of instruction for employees is maintained which deals with the experience gained from their own work injuries. Meetings of the committee are held regularly and the accident rate in the different departments compared. In one large corporation having plants in several States, injuries to employees arising out of and in the course of employment have been reduced 60 per cent since the beginning of this safety work. The exercise of the police power alone will never wholly remove hazards from industry or bring about a satisfactory reduction of the accident rate. This can only be accomplished by the management and employees of our great manufacturing plants when they join together and make this work a vital part in their industrial relations. Accident-prevention work finds here its most potential means for safeguarding the life and health of employees. In small plants where only a few workmen are employed it is obvious that this work can not be done on this extensive scale. In such establishments the superintendent or foreman must carry the responsibility of keeping the workroom safe.
It is a well-established fact that if industries were combed clear of mechanical hazards we would still have serious industrial accidents. While machinery accidents have been reduced because of the intense work done in safeguarding points of danger, accidents due to other causes have increased. Accident-prevention work in this field is difficult because it involves the human equation and is concerned with the exercise of due care. No mechanical devices can reach or control the underlying causes in these injuries. In 1927 machinery caused 13.3 per cent of all tabulatable injuries arising out of and in the course of employment in Massachusetts. These included 8,566 accidents, of which 47 were fatal. Falls of persons were responsible for 15.5 per cent, or 9,922 accidents, with 67 deaths. Handling objects caused 31.5 per cent, or 20,227 accidents, including 30 deaths, 2 permanent total disabilities, and 769 permanent partial injuries. These figures clearly indicate that in the field of accident prevention more remains to be accomplished in the reduction of non-machinery accidents than in those caused by contact with machinery. In the two last-named cause groups the personal conduct of the worker while engaged at his task is a factor of the utmost importance. Many falls occur through incidents which can be brought within control. Slipping on the floor is the cause of many sacroiliac injuries to employees. These are painful and usually followed by an extended period of incapacity for work. In the program for accident-prevention work in Massachusetts examination of floor conditions of industrial establishments occupies a prominent place. Passageways and gangways must be of even surface, kept clean and in good repair, free from nails and tools or objects over which persons might stumble and fall. Nearly all floor accidents are due to preventable causes. Drippings from humidifiers in textile mills often produce hazards of this kind. Oil-soaked spots at the end of looms make the work places dangerous for employees while engaged in their ordinary duties.

Where floors are washed daily notice should be posted, warning employees of the danger. Last year a workman who slipped on a wet floor reached out his right arm to prevent falling, and his hand became caught between the gears of the main and crank drive shafts on the loom. Amputation of some of his fingers took place, and he suffered the loss of the use of others.

Another man going around the end of a spinning frame fell on the floor where it was saturated with oil, and sustained a serious injury to the lower part of his spine.

Head injuries are common in the experience of accidents caused by falls. In a glue-manufacturing establishment an employee fell upon a wet floor, and sustained a fractured skull. Another employee in a yarn mill slipped on a greasy spot on the floor, and incurred an injury that impaired his hearing.

Such experiences figure prominently in the work injuries of Massachusetts. Last year 3,144 accidents happened from slipping on a floor level. Of these 6 proved fatal, 1 resulted in permanent total disability, and 13 in permanent partial disability. These injuries are nearly all due to causes which can be eliminated. Work places of operators must be closely scrutinized and floors carefully examined. Unclean or littered floors, unsafe methods of storing, pack-
ing, and placing of materials have done much in recent years to increase the number of nonmachinery accidents.

The building trades are afflicted with a greater number of nonmachinery accidents than any other industry. These employments are filled with hazards not found in other lines of work. In manufacturing establishments processes of work are practically the same day after day, while in the building industry conditions are changing constantly. The shifting of the working force on the job is peculiar to the building trades. It multiplies the occasions of danger. Workmen succeeding each other in the different stages of construction work frequently assume unnecessary risks. This experience is common in the investigation of building-trades accidents.

Explosions arising from the use of solvents in plastic floor material are now the cause of much apprehension among workingmen in the building trades. An employee was recently engaged in the spreading of this material, in which a high percentage of gasoline was used, while working in the construction of a 12-story building. It is believed that an extension electric light fell to the floor while the material was being laid and that either the heat of the filament or a spark from the bulb ignited the vapors and caused an explosion. The employee was literally burned to death. The smoke-covered walls gave evidence of the struggle he made to escape. The marks of his finger nails on the new plaster showed with what desperation he groped his way to the newly hung and closed door as yet unfitted with a knob or other means to open it. Such unusual and dangerous conditions of employment must be reckoned with in the future by the intelligence and judgment of the workmen and employers in the building trades.

How to safeguard human life under these circumstances is no easy task. Some authorities have expressed an opinion that proper ventilation in building-construction work is the best preventive of these disasters. It is said that the amount of volatile and inflammable material used in such plastic flooring is greater than what would be used in painting a similar area, and hence there is greater necessity for proper ventilation. The most practical thing under these circumstances is to provide for the rapid removal of combustible vapors. The same danger is present in painting or varnishing operations. Some volatile thinners, such as turpentine or mineral spirits (petroleum distillate between gasoline and kerosene) seem to be necessary. These thinners are capable of vaporizing and producing explosive mixtures with air. Adequate ventilation of spaces where painting or paint-removing operations are in progress should be arranged. The removal of air must take place at the floor level, since most of the combustible vapors are much heavier than air and tend to collect at the lowest point in the room.

Early in the summer of this year, more than 2,000 building-trades mechanics were employed at one time in the construction of a large mercantile building in the city of Boston. The scaffolding, staging, hoisting machinery, and working platforms were examined daily by an inspector from the Department of Labor and Industries of Massachusetts, covering a period of five months. Notwithstanding this careful supervision, three men were killed on this job on April 18. One met his death in the forenoon when a section of the column made
of wood fell from the top of the building while he was working in an excavation outside of the wall of the building, killing him instantly. The death of the other two occurred in the afternoon of the same day when cement hoppers containing 1,000 pounds each were placed, but not equipped with suitable shoring supports. Lack of this shoring, in a large measure, was responsible for the collapse of the staging and the cause of the death of these men.

In the construction of another 14-story commercial building the daily working force averaged about 700 employees and this went up without a fatal or serious accident. The same policy of daily inspection of scaffolding and work platforms was made in this building during the course of its erection. Leaders in the building trades, both workmen and employers, will find here an opportunity for constructive work in maintaining safe places of employment. Only a few of the well-established hazards of the building trades are mentioned here. They are enough, however, to indicate that the building-trades industry has been in a class by itself in relation to employment hazards. It is extremely difficult to maintain organized safety work in this industry. When a building is completed, the general contractor or builder starts a new project in another locality and must begin his accident-prevention work all over again. Construction work will always present serious difficulties in this connection. The men who work at the process of erecting buildings are a more fluctuating group than those employed in manufacturing. These facts impair the essential continuity of accident-prevention work, as building operations are diversified in type and carried on at widely different points. The experience of certain building contractors who have made accident-prevention work an integral part of their business policy is that work injuries can be reduced. Industrial injuries are man-made and can be man-stopped. Regular inspection work of buildings in the course of erection is necessary in accident-prevention work in the building trades. This is necessary to maintain supports and contrivances used as staging or scaffolding in safe condition for employees. Rails and the boards on working platforms and stagings should be examined regularly. The safeguarding of ladders and stairways, floor openings, and hoisting machines, and protection from falling material, are essential points in protection from accidents. All these requirements need to be checked up daily.

The accident experience of 1925 in Massachusetts shows the largest number of lost-time industrial injuries among employees in the building trades, and in the last two years these occupied second place in the classification by industry. In one building under construction in the year 1927, 69 subcontractors were engaged in the work. Inspection of working platforms was made with the appearance of each succeeding group of workmen. Constant supervision was given to the working operations on this job, and yet five lives were lost in the construction of the building. Inside the building one of the greatest risks is the unguarded floor opening or well. These are a great source of trouble because when a contractor does provide a rail around these openings other subcontractors or workmen are continually taking them down for the purpose of working in and around the walls or openings and neglecting to replace them. Safety rails
and toe boards of wire screening are so necessary for employees that a great majority of legitimate contractors provide them. Adjustable railings at the loading side of the material hoists often present serious hazard to the mechanics in the building trades. In many cases these are not provided or are placed directly at the edge of the opening and frequently not replaced after the hoist leaves the floor. The purpose of the railing, in part, is to prevent workmen from leaning over and looking into the well, and this check is especially needed when an elevator is away from the floor. Four men were badly injured through the exercise of this practice during the construction of a large theater building.

In the house-painting business many serious accidents are due to the practice of suspending hooks on gutters without further support from the staging. The requirement that these must be secured independently by a tie line to some suitable part of the building is frequently ignored by small concerns who engage in this business with limited means and often fail to cover employment risks with compensation insurance. Work to prevent accidents under these circumstances can be measured only by the size of the inspection staff. In this field it may be truly said that “the harvest is great, but the laborers are few.”

The building-trades industry contributed 13.9 per cent of all industrial accidents in Massachusetts for the year ending June 30, 1927. Fifty-eight of these were fatal, or 18.3 per cent of all fatal injuries in that year. There were six permanent total disability cases, or 35.3 per cent of all such injuries in the same period. Waste of man power in this industry is a challenge to accident-prevention work and State labor departments as well. Protecting the human side of industry in the building trades is conserving the economic resources of the State. Accident-prevention work should be organized from within and the saving of human life be made an integral principle in the conduct of this industry. Some of the construction concerns of the country recognize what accident-prevention work can do under these circumstances and have done much to reduce accidents.

Nonmachinery injuries in Massachusetts include diseases of occupation. In Johnson’s case (217 Massachusetts, p. 338), Massachusetts Supreme Court Reports, this definition of injury appears:

Personal injury is any injury, or damage, or harm, or disease which arises out of and in the course of the employment, which causes incapacity for work and takes from the employee his ability to earn wages.

In this case the employee had been exposed to poisoning from his occupation of grinding lead for a period of 20 years, and the question arose as to the date of the injury. This the Massachusetts Industrial Board found to be the date “when the accumulative effects of this poisoning manifested itself and Johnson became sick and unable to work.” This decision has been cited with approval in other Massachusetts Supreme Court cases, including O’Donnell’s case (257 Massachusetts, p. 164), and Bergeron’s case (243 Massachusetts, p. 366), which were decided by the Supreme Court of Massa­chusetts after it had considered the Pimental case (235 Massachusetts, p. 598), and had stated that the “workman’s compensation act does not in terms include occupational disease.” In this case it was held by the court that neuritis—a disease induced by muscular
action in rolling cigars—"while it properly may be found to have arisen during the course of the employee’s employment can not be found to have arisen from it in such a sense as to entitle him to compensation under the workmen’s compensation act."

I have cited these cases at length to indicate the status of occupational diseases under the workmen’s compensation act in Massachusetts and to show that they fall within the classification of non-machinery injuries. The rapid and exacting nature of mechanical processes and the unwholesomeness of many industrial occupations have brought new risks to vitality and health. The study of dangerous trades and occupations and occupational disease is the first step in this type of prevention work. The need of adequate protection for employees who come in contact with industrial poisons in any form is entitled to a prominent place in a program for the prevention of work injuries. Control of dust, fumes, and gases at the point of origin is an essential part of this work. Only those well experienced in the inspection of industrial plants can handle it adequately. Knowledge of the practices necessary to protect the employee from dangerous exposure is necessary. One must be familiar with the means for the prevention of inhaling lead oxides used in the manufacture of storage batteries, or fumes arising from the use of cyanide in connection with metal hardening. He should be familiar with means for the control of dust in the operation of surface-grinding machinery in the stone-cutting trade and be able to advise a manufacturing concern as to how best to control the danger arising from the use of benzol. The use of this industrial poison in the manufacturing establishments of the country is just now holding the attention of experts in safety work. Two years ago, when the committee on benzol, of the chemical rubber sections of the National Safety Council, made its report, this statement appeared:

Even when effective systems of exhaust ventilation keep the concentration of benzol in the workroom air below 100 p. p. m., there is a substantial hazard involved.

Coating compounds of nitrocellulose with a benzol content are often dangerous to employees even when exhaust ventilation is provided. The use of this poison in the leather-finishing business and in the rubber trades has caused apprehension among those concerned. Last year, in a shoe-manufacturing plant in Massachusetts, two women employed in spreading cement on rubber heels were taken suddenly ill, and removed to the hospital where one of them died. These women had been employed for a period of six months. An open pan of cement was laid upon the bench at which they worked. With a 2-inch brush they applied this cement over the heel parts. Investigation showed that about 30 gallons a day of this material were used, in which a 5 per cent solution of benzol was included. This cement had been used for a month prior to the time the women were overcome. No local exhaust equipment was installed on the work bench, but good general ventilation prevailed in the room. Investigation showed that this benzol cement had been used in many other plants. The cement manufacturer used a substitute solvent after this experience and no case of such poisoning has appeared in the last 16 months in the factory where these women worked,
An important feature of the work to prevent industrial diseases in Massachusetts is the statutory requirement that every physician shall report to the department of labor and industries the case of any patient whom he believes to be suffering from an ailment contracted as a result of the nature or circumstances of his employment. Examination of work places can then be quickly made and causation of injury determined. Local exhaust equipment may be found ineffective or unnecessary exposure to industrial poison prevail. This frequently is the case even shortly after thorough inspection has been made. Control of causes leading to occupational disease rests largely upon regular and careful inspection of the plant and the education of employees in sound practices of personal hygiene. This work has prominent place in the movement to prevent industrial injuries.

Accident-prevention work has no greater problem to deal with than the menace of infected injuries. Most of these are preventable. Adequate first-aid treatment is the means to accomplish this result. Slight punctures often lead to loss of fingers, hands, or limbs. More than two-thirds of all infections are caused by cuts and punctures. When the skin is broken, disease germs enter easily. This explains why fewer bruises result in infection, as the skin is not broken as a rule. A most common source of infection is the nail puncture. Usually these wounds are deep and hard to keep free from dirt. Some years ago the Industrial Commission of Wisconsin reported the death of an employee from infection caused by stepping on a tack.

An infection following a puncture of the foot by a rusty nail resulted in fatal injury to a young, able-bodied man 26 years of age who was employed in a large industrial establishment in Massachusetts. While making his rounds, he stepped on a rusty nail. The investigation made in this case established the fact that for 36 hours afterwards nothing was done to the wound. He went to the hospital when the wound became infected and after a few days died. Failure to apply efficacious first-aid treatment was very likely responsible for the death of this employee. Here was a man in the prime of life and in his most productive years struck down in the height of his usefulness by a simple injury. The dependents included a widow with several small children. These were the consequences of this injury.

In 1919, the Industrial Accident Board of Massachusetts conceived for the first time the idea of reporting in tabulation form the nature and extent of disability due to infected injuries. In that year, 5,178 cases of infection ensued from slight injuries. The nature of these injuries that year was as follows:

<table>
<thead>
<tr>
<th>Injury</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasions, contusions, bruises</td>
<td>826</td>
</tr>
<tr>
<td>Burns</td>
<td>167</td>
</tr>
<tr>
<td>Cuts, punctures, lacerations</td>
<td>3,414</td>
</tr>
</tbody>
</table>

Of this number four resulted fatally and three ended in permanent partial disability to the employee.

Of this number, 13 were fatal and 1 was a permanent partial disability.
There were 2 dislocations, 8 fractures, 9 sprains and strains in which infection was present. All other injuries not specified in this group reached a total of 749. Out of this number, 2 became fatal and 28 resulted in permanent partial disability. These injuries constituted 7.7 per cent of the tabulatable injuries, or 1 case of infection in every 14 cases tabulated. Of the total number, 3,414 cases, or 65.9 per cent, were due to cuts, punctures, or lacerations. A comparison of these statistics with those for 1927 shows an increase of 43 infected injuries in the latter year. The total number of such injuries in 1927 was 5,221, of which the nature of injuries was as follows:

Abrasions, bruises, and contusions, 934, including 5 fatalities.
Burns and scalds, 120.
Cuts, punctures, and lacerations, 3,074, including 10 fatalities.
Fractures, 6, including 2 fatalities.
Sprains and strains, 4; all others 1,076, including 2 permanent partial disability cases.
Amputations or loss of use, 7, all of which were permanent partial disabilities.
The total number of injuries resulting in infection was 8.1 per cent of the total tabulatable injuries.

In 1927, 1 out of every 12 tabulatable injuries resulted in infection as compared with 1 out of every 14 in 1919. Here is a field in which accident-prevention work can accomplish progress. Simple means can be followed which will reduce these preventable injuries to a very small number. Such injuries thrive on neglect. They can be prevented by the exercise of due care.

In 1907 the Legislature of Massachusetts adopted the following statute which since that time has been amended at different times:

Every person operating a factory, shop, or mechanical establishment where machinery is used for any manufacturing or other purpose, except for elevators, or for heating or hoisting apparatus, shall keep and maintain, free of expense to the employees, such medical or surgical chest, or both, as shall be required by the department, containing plasters, bandages, absorbent cotton, gauze, and all other necessary medicines, instruments, and appliances for the treatment of persons injured or taken ill upon the premises.

Every such person employing 100 or more persons shall, if so required by the department, provide accommodations satisfactory to it, for the treatment of persons injured or taken ill upon the premises, and also suitable and sanitary facilities for heating or warming food to be consumed by those employees of the factory, shop, or mechanical establishment who so desire.

Every person carrying on a mercantile establishment where 20 or more women or children are employed shall in the manner aforesaid provide such medical and surgical chest as the department may require.

Through such legislation it was hoped that slight injuries to employees in industrial establishments would be controlled so as to prevent not only incapacity for work but the loss of human energy and life. The rapid spread of infected injuries in Massachusetts caused the department of labor and industries in 1918 to exercise the authority given in the statute to require persons employing 100 or more workers to provide suitable facilities for the treatment of persons injured or taken ill upon the premises. To-day, in every factory or shop, a first-aid room must be maintained if 100 or more persons are employed. This room must be provided with ventilation directly to the outer air or by window or other suitable opening, or equipped with an approved exhaust system. It shall contain at least 200 square feet of floor space, the floors and walls shall be smooth, and the floors constructed of impervious material. A qualified nurse or other person trained and competent to administer first aid shall be
employed on the premises and on call ready to administer first aid only, unless further advised by a physician. This first-aid room must provide equipment essential to its various needs. These provisions are required by law because the care of infected wounds is essential. As instruments used in the work of accident prevention, they save human life and strength only as cooperation is given by the employees.

In 1921, the Massachusetts Department of Labor and Industries conducted an inquiry into 500 cases of infected injuries, and the outstanding fact in this investigation was that it was usually four to nine days before first-aid treatment was applied to the injuries sustained. This fact merely confirmed existing theories with respect to infected injuries. It showed that failure to receive first-aid treatment promptly was an important factor. It proved that employees did not promptly respond to such treatment and that they were not concerned about what appeared to be slight scratches or simple lacerations or punctures. In thousands of factories and workshops first-aid rooms are provided for the care of persons injured or taken ill upon the premises. Numerous concerns employ skillful physicians to whom employees have access in time of accident and ill health. Industrial nurses and persons well trained to render first-aid treatment are now engaged in this work in the modern industrial establishment. Notwithstanding the fact that these means are placed at the disposal of employees, septic injuries seem to thrive and flourish. Slight injuries must be treated promptly if the danger of infection is to be averted. Records of these cases must be accurately maintained by persons in charge of first-aid rooms. These are of assistance to the accident-prevention work in the plant. To the inspector from the State department they point clearly to the danger zones in the establishment. They are a challenge to the labor departments of the industrial States and are entitled to greater attention in all accident-prevention work.

Factory inspection rests upon the principle that work places should be made safe for employees. Its fundamental purpose is to protect the life and health of workmen from hazards arising in connection with machinery and industrial processes. The factory inspector to-day is the embodiment of the system of legislation reflecting the demand of an enlightened public sentiment to protect those whose work for society frequently meets exposure to serious industrial hazards. The suffering caused the victim of industrial accidents and the poverty coming to families where the head was stricken down while engaged in his daily work combined to arouse the people of this country to the need of providing for health and safety in industry. Conserving the life, health, and energy of our employees or wage earners is not an individual question; it is one requiring social action, and is now recognized as a legitimate function of government. Gradually, new principles born of this experience have found their way into our industrial life, and to-day, accident-prevention work has won the interest and approval of the manufacturing States and has inspired activity in the work of reducing human waste in industry.

No program of factory sanitation is now considered adequate or complete which does not provide for clean, pure drinking water in
each factory and which does not require washing and toilet facilities to be kept in proper and sanitary condition for the use of employees. Well ventilated and lighted workrooms, with lockers where the nature of the employment makes them necessary, are now required.

Types of emergency stopping devices, such as friction clutches, motor stops, or engine stops, must meet with the inspector's approval. The construction of materials for guards is carefully examined. They must be suitable in connection with belts and pulleys, so that spokes will be guarded and that the section of pulley receiving the belt will be adequately covered to prevent anyone being caught between belt and pulley. Set screws and revolving parts, in running gears and sprocket wheels, couplings and collars, dead ends of shafting, and all the well-known mechanical dangers will be carefully noted.

Exhaust and ventilating systems require frequent examination. More outlets may be added to the equipment and its capacity to withdraw fumes and dust from the point of origin improved. Noting that cranes and crane runways are in safe operating condition; supervising the care of chains, cables, ladles, crucible tongs and hoes, ropes, slings, and other appliances included in the details of foundry work; requiring that proper stairways and handrails be provided, that floors be maintained free from tripping and slipping hazards, and that hazards at point of operation and in power transmission machinery be properly safeguarded—are common items in the inspection of an industrial plant. The most efficient organization of inspection work is based on experience acquired in the investigation of accidents. The causation factors underlying industrial injury are now well understood. Each industry has its own tradition in this respect. This is well known to the average inspector. In Massachusetts, approximately 1,400 industrial injuries are made the subject of careful investigation each year. From this experience a wide knowledge of injury causation is obtained. When this is associated with the application of the law to dangers in modern industrial establishments, the most useful type of accident prevention work is done. A person who is equipped with skill derived from such contacts is usually well able to treat with problems found in the course of factory inspection. He learns that most of the real hazards in industry now arise from unsafe practices and is able to suggest safer ways to accomplish the result. His advice may be most useful when it is quite outside the scope and authority invested by the police power. Contact with danger points in industry is the main principle of knowledge in his qualifications for this work. In a furniture factory he quickly learns that the woodworking machinery includes the dominating machine hazard. In the metal trades, his experience shows him that the power punch press is an important factor in the accident frequency of the plant. In the plant engaged in manufacturing rubber products calender rolls come promptly to his mind, and his interest may quickly afterwards center upon the compounding room, where litharge and oxides of lead, urotropin, and other toxic substances are frequently used. The practice of these habits usually makes him skilled in the location of work places where danger lurks, and this leads to the safeguarding of hazards and the protection of employees. It is work of this kind that will prevent man-power waste in in-
dustry. It also means the alleviation of human suffering, the saving of life, and the preservation of the family. That is what accident-prevention work can do.

The Chairman. The next paper of the afternoon is "Safety education in industry under State supervision as a means of preventing accidents," by Thomas P. Kearns, of Ohio. Mr. Kearns can not be here, having been detained at home, and he has requested Mr. Beasor, of his State, to read his paper.

Safety Education in Industry Under State Supervision as a Means of Preventing Accidents

By Thomas P. Kearns, superintendent Division of Safety, Industrial Commission of Ohio

[Read by Carl C. Beasor]

The need for safety education as a means of preventing accidents is an established fact. The idea is comparatively new but is fundamentally sound. Education is the most potent influence in American life today; education applied to industry has increased production and profits and established higher standards of living among American workmen.

The greatest menace to life and limb, the most important factor in economic losses to both employer and employee, and the greatest foe to the higher ideals of industrial endeavor in this age, is the inexcusable and lamentable accident record of industrial America. This is another well-established fact, supported by statistical information gathered from every State in the Union, and it is only natural that the education that has been productive of so much economic progress in industry should be applied to combating the influence of the greatest enemy to that progress—industrial accidents.

For many years after the inception of the safety idea, the entire accident-prevention activities of many States were confined to arbitrary enforcement of mandatory laws and other regulations or requirements governing industrial conditions through the exercise of police powers in the hands of State inspectors. As a matter of fact, this is the principal method used in most States to-day and in some the only method. Factory inspection and the exercise of its attendant enforcement authority has without doubt served a very useful purpose. It has been the means of eliminating innumerable hazards from industry, thereby preventing many accidents and injuries, and the inspection departments, often working under severe handicaps, are to be highly complimented on the splendid results accomplished in this direction.

Notwithstanding the progress that has been made by the States along this line, however, the continuing toll of life and limb taken by accidents has made it obvious to those engaged in the safety movement that arbitrary enforcement of statutory laws and regulations does not suffice to solve the problem. In other words, it has become apparent that the installation of mechanical safeguards and protective devices, while indispensable, is not alone sufficient to prevent accidents. There are many so-called psychological causes
of accidents, such as lack of knowledge, inexperience, chance taking, lack of foresight, carelessness and indifference, which obviously can not be guarded against through the medium of mechanical safety appliances or controlled through statutory enactments.

While I am thoroughly convinced that the educational phase of accident-prevention work is the prime factor in the ultimate solution of the problem, I say unhesitatingly and without reservation that I am not in sympathy with the attitude of those who claim that 90 or 95 per cent of all accidents can be prevented through educational methods alone. In other words, I think that the installation of safeguards is not only desirable but essential to the success of any safety program: First, because an open gear or an unguarded belt or flywheel is a constant menace to every workman, regardless of how well trained or careful he may be, due to human fallibility; and, second, I do not believe that it is possible to secure the cooperation or support of the workers, so essential to the success of a safety program, unless and until the employer has tangibly demonstrated his interest in the protection and welfare of his employees by spending whatever sums may be necessary to eliminate all physical hazards, in so far as it is practical, through the installation of mechanical safety appliances. Since there are, and perhaps always will be, some employers who must be compelled to provide safe working conditions in their plants through the exercise of the police powers of the State, it would appear that, regardless of the educational safety work carried on, so-called factory inspection must go on and factory-inspection departments will have to continue to share a joint responsibility for industrial safety with the educational agencies of the safety movement.

Admitting, if we will, that safety education is necessary, the question naturally arises as to who is to be educated. Ordinarily when we think of educational safety work we have in mind the education of the employee and that is of course the ultimate objective. The worker must be taught the fundamentals of safety; he must be convinced that he has a definite responsibility in accident prevention; he must be taught the dangers and hazards of his employment and how to overcome and avoid them; he must be taught to work safely and to follow safety rules and safe practices in order to prevent injury, not only to himself but to his fellow workers, and he must be impressed with the fact that he owes it to himself, to his family, and his employer to do so. In short, he must be taught, as we are in Ohio, that safety is better than compensation. But in my mind the safety education of the employer is the primary essential; it is the foundation on which we must build. We must have intelligent appreciation on the part of the employer of his responsibility for safeguarding his employees, and until the employer realizes his responsibility and understands what he must do to meet his obligations and does it, we are not going to make much progress in interesting the worker in safety. Even to-day comparatively few employers grasp the full significance of the safety movement, either in its economic, social, or ethical implications, nor do many of them realize that accident prevention has a definite body of principles and extensive data, requiring for its successful application some one who is thoroughly familiar with and capable of applying this data in a systematic and
scientific manner. It is for this reason, therefore, that we must educate the employer to the desirability of safety by showing him that accidents are caused, that the causes can be located and removed, that reduction of accidents brings more uniform and increased production, and therefore, that it is highly profitable to prevent them, or, as we tell employers in Ohio, “safety pays dividends,” not only in dollars and cents, but in human happiness and ethical rewards as well.

When the education of the employer has been accomplished we may then reasonably expect him to take the necessary steps to insure the safety of his employees and quite evidently this is a responsibility that properly belongs to the employer. He alone has the power and authority to authorize guarding, promote safety organizations, and do the numerous other things necessary to bring about safety-plant conditions. Responsibility is always coextensive with power and the employer is therefore primarily responsible for the success or failure of safety measures in the plant.

The State has a very definite responsibility in this matter and a splendid opportunity to render assistance to employers in this direction. It is the duty of every Commonwealth to protect its citizens in so far as it is humanly possible to do so, whether on the street, in the home, or in the workshop, and to lend all assistance possible in the promotion of any plan or program that will best achieve the desired results.

As regards industrial safety the State is in the most advantageous position possible to emphasize the ethical, humanitarian, and social side of accident-prevention work for the reason that it is generally recognized that its interest in the movement is impartial and universal and it enjoys the further advantage that an employer is inclined to feel that he is legally as well as morally obligated to cooperate with the State, whereas he might not hold this same attitude toward an outside agency.

The State in presenting the facts of the accident situation to employers, foremen, and workers can bring these facts more impressively to their attention, because it is generally recognized that the figures and statements prepared and issued by the State are objective and unprejudiced.

Again the State is in a position to insist on a report of all accidents and in consequence its figures are more complete and comprehensive, bear the stamp of authority, and present to all concerned a more accurate picture of the accident situation than figures gathered by any other group or organization.

For this and various other reasons the State is in an exceptionally favorable position to assist in the education of employers and employees as to their part in advancing the cause of safety and to energize the entire industrial-safety movement within its boundaries, provided, of course, the necessary funds to carry on the work are available.

In this connection we feel that we have a very fortunate situation in Ohio. Pursuant to a constitutional amendment to the workmen’s compensation act, made possible through the splendid cooperation of both employer and employee representatives, a cooperation which we have enjoyed in all questions pertaining to compensation and safety, 1 per cent of the premiums paid into the State fund are set
aside to be used by the industrial commission for the investigation and prevention of industrial accidents and occupational diseases, and this apportionment is used exclusively for educational safety work through the medium of the division of safety and hygiene of the industrial commission which was organized for this specific purpose.

The fact that the employer pays for the service and that no compulsion of any kind is brought to bear makes it much easier to win his support and cooperation than would otherwise be the case. We have had most gratifying results in the many activities we have undertaken, results that could not possibly have been achieved through coercive methods.

Organized in July, 1925, as a result of the amendment above referred to, we have been operating now for a little more than three years. As much of the work is somewhat in the nature of pioneering, we have proceeded with a great deal of caution, entering on new activities only when conditions seem to favor success. As a result we have not had a failure in any project undertaken. I mention this fact because of the importance of a successful record in creating confidence in the division on the part of employers and employees, which I believe to be essential for carrying forward the work in hand, as well as in developing new projects.

One of the first and most important steps taken by the division following its inception was to organize a statistical laboratory in charge of a highly trained and experienced statistician where all accident claims filed with the commission are thoroughly analyzed with a view to determining the most prolific sources of accidents in industry generally and in the various branches of industry, their cause, degree, manner of occurrence, etc., thus making it possible for the division and our engineers to direct their efforts toward the prevention of these accidents to the exact source of their origin and to do it in an intelligent and comprehensive manner.

This information is tabulated and issued in bulletin form monthly to employers desiring same and is supplemented by annual reports which minutely analyze the accidents occurring during the preceding year.

A staff of safety engineers who have had a long and successful accident-prevention experience and who are selected solely on the basis of experience and qualifications carry on the field work of the division. These men form the point of contact between employer and the division. They are assigned to the principal industrial centers of the State, their territory being selected with particular reference to the major industries with which they have had experience and with which they will come in contact. They are sent in a purely consultative capacity to employers, under instructions to render them every possible service in carrying on scientific accident-prevention work. Among these engineers there are those specially trained in particular fields, such as construction, electrical, and mechanical engineering. Special problems arising in these fields are referred to these engineering specialists for their advice and counsel. Safety surveys of the plants are made by these engineers and special investigators. Employers throughout the State have been quick to take advantage of this service and as a result hundreds of surveys have been made and safeguarding remedies suggested. Close contact is
also maintained by these engineers with chambers of commerce, trade, and other organizations that manifest an interest in safety and assistance rendered to them in any safety program they wish to promote.

A full-time medical adviser who has specialized in problems of occupational diseases and industrial hygiene is on the staff and available for consultation on industrial health problems. Research in this field is part of the work of the division.

Qualified speakers on safety topics are available for meetings, either in the shop or at any outside gathering where the interest warrants them. Speakers are also supplied for meetings of labor and commercial organizations, luncheon clubs, and similar groups. In addition to the speaker’s service, motion-picture films conveying the message are made available to all organizations desiring them.

A publication service has been established which makes available for distribution safety pamphlets and bulletins of an educational nature, monthly bulletins covering accident statistics for preceding month, special studies covering accident experience of various industrial groups, and the proceedings of the larger and more important safety conferences held under the auspices of the division. The division also issues a monthly magazine under the title of the Ohio Industrial Commission Monitor. This is designed to interest employers, safety workers, and others in the accident situation, in safety activities planned or under way; decisions and rulings of the commission and related material, also to furnish specific, usable information on accident causes and remedies. While comparatively a new venture, it bids fair to become a very potent influence in the dissemination of the safety message. Through this medium safety advocates are kept apprized of safety activities and records throughout the State and competitive interest is aroused which will undoubtedly prove helpful to the cause.

During the last year a safety poster has been issued monthly and distributed in liberal numbers to all employers coming within the provisions of the workmen’s compensation law. Special emphasis is placed on the Ohio situation and on the ultimate goal of a definite yearly reduction in industrial accidents, particular attention also being given to no-accident months, two of which were planned for this year—one in April, which was productive of splendid results, and the other in October, which we hope will produce equally as favorable a record.

One of the most important and far-reaching safety-first efforts of the year is concentrated in the all-Ohio safety congress which convenes on November 13 to 15 next for its second annual session. At the congress held in 1927 more than 2,000 representatives of Ohio industries were in attendance. Great care was exercised in selecting speakers recognized as leaders in safety thought and action in their respective fields. Great enthusiasm was manifested and a real stimulus was given to safety work in the State. This year preparations are being made for a much larger attendance and the fields covered by exhibits and discussions will be greatly enlarged. On every hand we are receiving assurances of cooperation and support in making this congress even more successful than last year’s, and we are confident that it will be bigger and better in every respect.
That the work of our division has been productive of good results is best indicated by the reduction in premiums in the years 1927 and 1928. That our efforts are being appreciated is evidenced by the interest manifested in our work by both employers and employees through frequent reports of no-accident records, numerous requests for assistance of the division in carrying on plant safety work, and the many commendatory letters received relative to the work of the division and the services it is rendering.

Whatever measure of success we have attained is, of course, due largely to the splendid reaction of our employers and employees to safety efforts under the direction of the State and to the fine spirit of cooperation manifested by the Industrial Commission of Ohio, every member of which is thoroughly sold on the value of this method of reducing the frightful toll of life, limb, and wealth taken by preventable industrial accidents and as a means of ultimately solving the industrial-accident problem.

I think we may be pardoned some feeling of pride in the record of our State along the lines of this discussion, for we are of the opinion that this plan represents a significant development in the industrial-safety movement. We have had our periods of elation and moments of depression, but we expect to keep persistently and everlastingly at the work of instilling the safety spirit and idea into the minds and hearts of management and men, confident that every year will see us nearer the ultimate goal of industrial accidents brought to an irreducible minimum.

The Chairman. With your consent we will defer discussion until Doctor Patton has presented his subject, “The Growth of occupational diseases as the result of change in the methods of industry.”

The Growth of Occupational Diseases as the Result of Change in the Methods of Industry

By E. B. Patton, director Bureau of Statistics and Information, Department of Labor of New York

The appearance of my name on the program was more or less in the nature of a mistake. In conversation with Commissioner Stewart during the summer I happened to throw out this suggestion, and later received a copy of the program in which I was put down for a paper.

The point of view which I expressed to Commissioner Stewart was that it seems to me that we are now in what may very properly be called a chemical revolution in industry, somewhat similar to the industrial revolution in industry with which we are all familiar and which took place, roughly speaking, a hundred years ago with the development of steam appliances and the introduction of modern machinery; the age of the hand type of manufacture, which had long existed, was replaced by what has been known as the mechanical age. Very soon the problem of accidents growing out of that new mechanical age developed, but it was not, roughly speaking, until some hundred years later that we developed a modern system of workmen's compensation to care for the injuries arising out of this modern mechanical age.
For the last few years, and with increasing rapidity each year now, it seems to me, there is a development in industry which is to a considerable extent shifting the basis from a purely mechanical one to a chemical one.

I have been following with a good deal of interest the recent reports of the American Chemical Society now in session, and I want to read a paragraph of the statement made by the president of the American Chemical Society, pointing out the value of chemistry in modern life; he said:

The output of chemical products in this country has advanced in 50 years from an insignificant sum to more than $2,000,000,000 annually at present. It would be impossible to estimate in addition the enhanced value of other industrial products, the economies effected, the wastage utilized, the new things done, and the old things done in a better way, as a result of chemical guidance and supervision.

This is a chemical age, and we live, move, and have our physical being as a result of chemical processes; whether we travel on foot, in Cronheim shoes and Rayon stockings, or roll to work on rubber wheels and concrete roads, we travel in comfort by chemical grace and good will. If we land in the hospital, the chemist has anticipated our coming; he is there before us with antiseptics and chemicals and medical relief for suffering, and restoration of health.

You are all, I am sure, well aware of the growth of chemical processes in industry and that the number of workers engaged therein has increased remarkably, and even more particularly of the tendencies toward further development and increase of that sort of thing.

As I understand it, the principle of workmen's compensation is that the worker shall be compensated for the disability arising out of and caused by his employment. For the last 15 years we have been congratulating ourselves that, although it took us a hundred years to wake up to the fact, we have at last brought about a system of compensation for such disability, and we are inclined to feel that, if we compensate for the accidents which do occur and if we succeed, as the papers brought out here this afternoon, in preventing accidents, the problem has been largely solved. The thought I want to present is that unless we adjust our minds to the idea that more and more the disabilities arising out of the worker's employment are not caused by accident in the ordinary old-fashioned sense of the term, but are more in the nature of diseases of the occupation, we are making a mistake, and that, in so far as we content ourselves with merely compensating for injuries caused by mechanical means and the prevention of such accidents, thinking we are solving the whole problem—as long as we hold that idea—we are getting out of the sweep of current progress and current development. To-day, in order to maintain the original idea of workmen's compensation—that of compensating the worker for disabilities caused by his employment—we have to take into consideration disabilities not perhaps so spectacular in their character, but nevertheless just as real and just as severe as though they had been occasioned by accident in the old-fashioned sense of the term.

It is true that a hand mangled in a gear or a leg broken by a falling scaffold is spectacular; nevertheless, the loss of sight or the effect upon any of the organs of the body by the insidious processes arising out of chemical processes is just as serious, and unless that is compensated for we are not carrying out the idea of workmen's compensation.
Now, I am not here to make a suggestion for the amendment of the law, necessarily, but I would like to throw out this idea: It seems to me that experience has demonstrated in our workmen's compensation, so far as we now have it, that on the whole it is more desirable to make the coverage a blanket one, saying that all accidents shall be compensated for except those specifically enumerated. It seems to me that this early in the game, now that what I call the chemical revolution is upon us, it might be well to extend the coverage of our compensation laws so as to include diseases of occupation, and I think it is at least worth considering whether or not we should make that coverage a blanket one and specifically enumerate the exceptions. I know that all of you are questioning in your minds as to how you are going to handle tuberculosis, this, that, or the other thing. My point is that even if you feel that a specific disability ought not to be included in the blanket coverage, do not exclude everything else on the blanket coverage. In other words, put the burden of proof—where it seems to me it properly belongs—on the employer, the occupation, the industry, to prove that the accident or the disease did not arise out of the occupation; let the assumption be that the accident or disease did arise out of the occupation. My suggestion would be that the same principle that is applied to accidents be applied to the matter of diseases of occupation.

I did not bring any statistics with me, but I think all of you will agree with me that this problem is one not only of pressing importance, but of increasing importance, and that we can not properly be said to be carrying out the principle of workmen's compensation unless we extend the scope and coverage of our laws so as to include diseases of occupation as well as accident.

I am well aware that to a certain extent that is now being done, but I am also aware that in no State is the coverage of occupational disease anything like as extensive as that of accidents proper. In New York State, for example, it has long been true that you can compensate for occupational disease, provided you can relate that disease to an accident—that you can, by some hook or crook, bring evidence into the record that will tend to indicate that that disease was necessarily the result or grew out of an accident. There are, of course, in many of the State laws a specific list of occupational diseases which in those States are compensable, but we should have our attention drawn to the greatly increased hazard of occupational diseases which is brought about by the introduction of chemical processes.

DISCUSSION

The Chairman. If we are ready we will discuss Doctor Patton's address at this time.

Mrs. Slayback. I think this is a tremendously important thing, but it is a tremendously serious thing, too. I have a feeling that perhaps industry is asked to take care of a great many things that do not wholly belong to industry, and I feel with regard to this extensive coverage of the diseases of occupation that perhaps we have thrown more responsibility on the employer and not raised the responsibility of the employee.
If a man or woman worker does not take care of his or her own health in private living conditions he or she becomes more liable to the inception of disease in the plant, and I feel that we have gotten into a terrible whirl when we say that the person who contracts an occupational disease gets it wholly out of his occupation, unless we can prove that that worker takes good care of himself or herself outside the factory. We must not make the worker feel that industry is going to take care of the worker, unless the worker is going to help take care of himself.

Just now I am having a terrible time to get men who work in a large soldering plant, on soldering machinery, to gargle their throats and wash their mouths and even wash their hands before they eat their lunch. Perhaps that is an extensive question and one on which it is going to be hard to draw the line between the responsibility of the worker and the responsibility of the employer, but somehow or other I feel sympathetic with the employer just now.

Mr. Stewart. So far as the employer is concerned, perhaps I am not as sympathetic as I might be or ought to be. He can say to his employees: You come here at 8 o'clock and punch the clock or you don't work in this factory. He assumes that authority and he enforces it, and the fellow toes the mark. There isn't any question about it. And the employer can tell the employee that he has to wash his hands and he has to gargle his throat or he gets out. It is entirely within the employer's power. I am not able to work up any great amount of weeps for the manufacturer in his power to enforce reasonable or even radical safety methods and principles.

The thing that disturbs me, Mr. President, is the unsympathetic, ignorant—when I say ignorant I mean uniformed—worker. I made an investigation at one time on the effect of the ventilation in factories. I found that the women came from homes where the windows were never opened, where the living conditions were almost unspeakable. They came to factories where the light and the air were splendid, and they had more accidents when they first came in than they did after they had worked a few hours. In other words, the health conditions were better in the factories than they were in the homes.

That is the thing that worries me. The manufacturer can enforce his rules. There is no use of worrying about that; he can do it if he wants to. All he has to do is to say: "This factory opens at 8 o'clock; you punch the clock, you be here, at 8 o'clock or you don't get paid." But the woman who works under fairly good factory conditions goes home and cooks and eats and sleeps under conditions that are unthinkable and impossible, and tuberculosis sets in. Where does it come from? Does it come from the home or does it come from the industry? That is what is worrying me.

Certain things, of course, we can definitely state. If it is lead poisoning or anything of that sort, that comes from the materials handled, we can answer that, but there are a great many other diseases—tuberculosis is one of them, anemia, a general breakdown from impossible home conditions—I have not quite reached the place where I am willing to charge the manufacturer with that. I am going to charge somebody with that. I am willing to charge it, don't
worry about that. The question is simply to whom to charge it. I doubt that it is the manufacturer's responsibility.

Henry Ford said he would pay $5 a day, but the home conditions must be $5-a-day home conditions, and he made home inspections and saw that the home conditions went up to that standard. You can not do that and manufacture Fords or do much of anything else. Aren't we up against a proposition here where society, where the health department of a city or town, is responsible for the home conditions, at least within certain limits?

My investigation convinced me that for at least a very large percentage of the workers in the clothing factories—not the sweatshop, but the factories—in New York the conditions were infinitely better than in the home; that immediately the woman came from the home into the factory, she built up and up, and her chances of accident decreased rather than increased as she left her home. That is one of the things we can not forget, and who can be charged with that I don't know. As I said before, I am perfectly willing to charge it if you will show me the man.

Mrs. Slayback. I can not let Mr. Stewart's words go by like that. Any factory inspector here knows that the manufacturers do not tell the man who does not get in promptly: "You get here promptly or you don't work." They may close the door to him for 15 minutes and charge him for it, but if a manufacturer employs skilled workers he is no more likely to tell that man that he can not work there because he does not get there on time than I am likely to invite you to go out airplaning with me this afternoon. You can not go out on the street and pick up skilled men. Henry Ford can say to his men down in the assembly plant, "You will transgress in that toilet but once more" (and I happened, on my last visit to Mr. Ford's most wonderful plant, to see a man told to come up to the office and get his pay because he had transgressed in the wash room), but Mr. Ford can take a man and in three days make him a competent workman to do the particular job which he has for that man. A man working in a crucible steel plant, or a man reducing chromium ore, or a man drawing some kind of a special chromium wire—which is not an extensive industry and is a highly skilled one—however, is not likely to lose his job because he is 15 or 20 minutes late.

Even though Mr. Stewart may think that the manufacturer has it all his own way, he has it only where there is unskilled labor. Why? Because unskilled labor abounds. If unskilled labor were not plentiful he would not have it even there. I am sorry to have to contradict you, but I know from the expressions of the gentlemen around me that they will support that opinion.

Mr. Stewart. Generally speaking—I am not going to make this an all-inclusive rule, but generally speaking—the skilled man that the manufacturer can not afford to discipline because he can not get a substitute for him, is getting a wage which puts him in a social status where he does know that his windows must be open; his home conditions are not the conditions of the common unskilled laborer. We can almost let the fellow alone who is getting $10 or $15 a day if he hasn't sense enough to open the window in his sleeping room, for by the time he dies there will be another man equally skilled, but there are comparatively few of the high-priced men whose living
conditions are bad. There are some of them, but it is the low-wage men, to the uninformed men, the men who come from countries where health and decency, as we understand health and decency, is almost a class question, being confined to the lords, who don't know anything about it and never did—that is where your large volume of what I will call social disease rather than occupational disease (I don't mean that in the technical term, but in the sense of bad living conditions) comes from for which I am not quite prepared to charge the manufacturer. Yet if you can show me somebody else to charge, I will.

Mr. Beasor. Does not this revert back to the question of education? If we educate the employer will he not see that his employees are educated to get the results he wants? Not many years ago we did not have the employers educated to the fact that goggles were a good thing to wear. How many now will not keep their men wearing them all the time? How many men will not want to wear their goggles all the time? If we educate the employer he will find some way to educate the employees, whether it is gargling their throats or wearing goggles, or what not. Sell it to him first and he will sell it to the employees.

The Chairman. If there is no further discussion on the paper by Mr. Patton, we will take up the paper read by Mr. Morley. President McBride suggests that we might take up the first three papers collectively rather than individually.

Doctor McBride. These are three very excellent papers, and if there is any question anyone here would like to ask, now is time to do it.

The Chairman. The Chair listened with much interest to the paper read by the general manager of the Industrial Accident Prevention Associations of the Province of Ontario, and congratulates Mr. Morley on its efficient management.

Accident prevention work is, in my opinion, not only a great humanitarian agency worthy of the moral and financial support of every community, no matter how small, but more. Because of its sympathetic humanitarian efforts to save life and limb, it so directly affects the individual, the home, the church, and the State as to make it an invaluable economical agency.

Without boasting or attempting to lessen the spirit of cooperation and brotherly interests so generously given by the manufacturers of your association, Mr. Morley, I want to call the attention of the convention briefly to what we are doing in Delaware along the line of accident prevention. There we have a State safety council, supported solely by the manufacturers and a limited number of individuals, that fosters: (1) Safety education in all schools in the State, and by the way if some of the promoters of the juvenile stage could witness the earnestness and instinctiveness of some of our school boys and girls “doing their stuff” in fire drills and accident prevention training they would find so much new material that “Our Gang” and Wesley Barry could be given a rest; (2) individual plant instructions and safety schools in which not only the industrial workers, but the plant managers are instructed in safety education; (3) and last, under the public safety and miscellaneous division, the importance of safety is given much publicity through the press of the State,
which has been most liberal in publishing such material as the council believes helpful, without cost to the council; in the distribution and posting in public places of safety posters; in an organized automobile safe drivers' club; in an active committee on automobile safety, railroad grade crossings, uniform signals, and water safety; consideration of the latter is better to protect the health not only of our own people, but also of tourists.

So successful was the work of the council last year, the industrial accident board of the State unreservedly said to the press that the activities of the Delaware Safety Council had made it possible for the board to reduce the cost of compensation insurance 6.6 per cent.

Tabulation of the results of the interplant safety contests in the State shows that our industrial members—that is, industrial plants that are active members of the safety council—have reduced both the number and severity of accidents to less than one-half the average prevailing in similar industries. Our safety council believes "we are our brother's keeper"; that if we are to accept our full responsibilities to our fellow man, we can not be indifferent to his health, or anatomical breaks, and losses. I have been actively connected with the Safety Council of Delaware for some years, and so convinced am I of its benefits to the employer and employee that I did not hesitate to say to the council some months ago substantially this: That as a result of the work done by the safety council we find among employers and employees a sympathetic response to appeals for cooperation concerning common interests that has created an industrial atmosphere of good fellowship which is an added asset to the State. Not only are employers and employees cooperating with our safety council, but State and city school authorities, State and city police departments, the industrial accident board, and other official agencies are assisting in the work.

Again, Mr. Morley, I congratulate you.

Mr. Maguire. I would like to ask a question of the commissioner from Massachusetts. In listening to his paper I understood that Massachusetts passed a law in 1907 requiring all industries established in the State to install first-aid packages or first-aid rooms, and that for those rooms there is now available to the inspectors a complete record of infected accidents since the act became effective. I would like to know how completely that law is observed in Massachusetts, and how complete the record of infected accidents, especially in the smaller manufacturers' plants, is.

Mr. Meade. The law enacted in 1907 provides that medical chests be installed in all manufacturing establishments regardless of size. It was amended 12 years later so that not only medical and surgical chests were required, but the department of labor and industry was given authority to require of such establishments where 100 or more persons were employed that they each install a first-aid room and to make rules and regulations in connection with its administration.

One of the many provisions that have been made under that authority is that there must be maintained in the first-aid rooms in manufacturing and mechanical establishments—because the law was again amended to include mechanical establishments—a record of all injuries treated on the premises for which first-aid assistance was given,
That does not mean that after first aid has been given to an injured employee the nurse there or the person competent to render first-aid treatment has authority to continue the treatment of the injured person; by no means. The only authority that he or she has is to give first-aid treatment.

So far as infected injuries are concerned, I think you will recall that in my paper, I said that our investigation showed, in 500 cases that were looked into because of the apparent number of infected injuries, that it was from 4 to 9 days before employees in those cases had sought any first-aid treatment. That was due to the fact that their injuries were either slight cuts or slight punctures which, perhaps, they thought at the time did not amount to anything and therefore did not require any service. Out of that the point was made that these very slight injuries should be attended to promptly on the part of the employee, and the inspector on going into the plant, knowing something about that condition, having received notice, perhaps through the office, of the number of injuries that occurred there, could make a personal investigation and find to what extent the employees were addicted to that practice, and whether or not the first-aid room functioned properly and was open and the nurse available at all times for treatment of that kind.

The Chairman. The chair would like to know, who, under your law, shall say the person in charge of the first-aid room is qualified.

Mr. Meade. The department of labor and industry. It proceeds this way: First, it requires the concern to furnish evidence that the person is qualified, and that is done either by the plant physician or the physician who goes to the plant occasionally. If he examines some one and says that person is competent to give first aid, we accept the physician's statement, which we file. Secondly, if that person takes a course, we will say, under the auspices of the Red Cross or some other organization that is interested in setting up a school for teaching first-aid treatment, and can show a certificate, we accept the certificate and place it on file. That applies where 100 or more persons are employed, but in the smaller plant there is no such regulation, by any means.

Mr. Stewart. On that first-aid business and the reporting of accidents, here again the power of the manufacturer to enforce rules comes in. Take the Swift plant in Chicago; if an employee gets a scratch where blood shows—it does not need to bleed, only look red—that employee must go to the first-aid room and have that treated and recorded; and believe me, he goes. If a girl in the sausage-stuffing room pinches her finger or something, and even shakes her hand, there is somebody in that room who is delegated to see that that girl goes to the first-aid room and has that matter attended to and recorded. The percentage of those insignificant things which afterward develop into serious cases, Swift & Co. of Chicago believes, is sufficient to justify that and the keeping of that enormous record. It offered those files to me to figure out the percentage, but there were trainloads of them; no bureau of labor would figure that out. The company has never seen fit to figure it out but it is convinced that no matter what kind of a scratch it is it must be recorded, even if it is not treated. So far as enforcing rules is concerned, you have
in the stockyards of Chicago an enforcement of a rule about reporting any little scratch that shows that the employers can enforce any kind of a rule if they want to.

**Mr. Warzala.** I must say that in fairness to truth and in fairness of practice, that I agree absolutely with Mr. Stewart in the matter of the enforcement of rules. We have rules relating to safety and we have rules with reference to occupational disease. We furnish our workmen who are engaged on processes that might lead to occupational disease with clothing, underwear, rubber gloves, and everything else. In addition to that we require that they bathe—we furnish everything, hot and cold water, soap, and towels, and so forth. We have started enforcing the rules. We noticed that this did not work. The great trouble is that we are unwilling, and every manufacturer is unwilling, to bounce a fellow, especially if he is a good workman, just because he has failed to obey some rule; that is the great trouble. A man fails to be on time—well, you overlook it.

We had habitual violators of the rule with reference to bathing, and as these men are our trained operators we were unwilling to fire them, so we devised a different scheme. We thought that if we rewarded them for bathing it would work, and developed competition, giving a man two days off with pay, or some such money, until we got them to the point where if our bathing facilities gave out they would complain; we have them to the point now where they go out and bathe voluntarily.

I believe there are ways of doing it, nevertheless I must agree with Mr. Stewart that enforcement, whether you do it through coercion or some other way, lies entirely with the manufacturer.

**Mr. Stewart.** I have just one more word to say about that. Perhaps the first institution that introduced bathing facilities for employees and along with it compulsory rules for bathing had a strike. It is the way you go at it; 99 per cent of everything in this world, as I see it, is attitude. You can fail at most anything by going at it in a foolish way. If you take the position that compulsory bathing, compulsory washing of certain clothing, compulsory wearing of goggles is not welfare, that it is a part of the job and a protection against occupational disease for which the employee will be held responsible, it does not require force—it only requires a little bit of intelligence and tact—to put it across.

Years ago a certain company put in bathing facilities and made it a rule that the girls must take a bath on the company's time once a week. Well, there was a strike—the girls were insulted—and I think that was the most justifiable strike that I ever got mixed up with in my life. The intention was all right, but the way the company went at it made its employees angry.

In the first place, it is up to the employers either to get some sense, or hire somebody who has sense, as to how to treat employees along these subjects and along these lines.

**Mr. Warzala.** Again I thoroughly agree. When we instituted that system it was not a question of welfare, but a question of business and profits. Before we adopt this method of furnishing men clothes and of requiring bathing, we had sickness. We manufacture
anolin, benzol, and other chemicals, the fumes of which make men sick and eventually lead to occupational disease.

We have found a way, through just this method of cleanliness, because we have found men, particularly the foreigners, wear underwear two or three weeks, and the things would become permeated with fumes; not only was the employee sick himself but he made his family sick. Since the adoption of this practice we do not have occupational sickness. We explained to them that it was a protection to them as well as a protection to us; that when they were sick we had no men to operate our machines, to run our processes; that it was a question not of welfare, but of business.

Mr. Morley. I think that the point that was brought out a moment ago is one overlooked in a great many cases; that is, the protection of the worker.

I remember two cases in Ontario, one where an employer called me one day and told me the workmen's compensation board had levied an additional assessment against him because of his bad experience. I asked for the details, and he told me that the total cost was bound up in one case, that of a young man who had lost an arm. He told me the story about this young man; that he had lost his arm while he was doing what he termed a "fool trick." I asked him whether that "fool trick" had been done before. He said, "Often. I have spoken to him myself in passing by, and I have seen the foreman knock the man down for doing it." I said, "Have you thought of discipline?" He said, "I couldn't afford to let him go." I said, "What did you do when he lost his arm?" He said, "I got another man."

The other case was this: In a plant where goggles were the rule a young man came to work; he was told that he would have to wear goggles on his particular job. Three or four days later he came in without them; he had left his goggles on the piano or somewhere else. The superintendent told him that goggles were the rule, and that he would have to wear goggles in the future. Four or five days later he turned up again without goggles, and he was sent home to think it over and told to come back in three days. The next morning the boy's father was looking for the superintendent at the plant, who thought he had a fight on his hands. The father said, "If my boy hasn't sense enough to protect himself, thank heaven he is working in a plant where they look after him."

Mr. Sanford. Mr. Meade stated at length what accident-prevention work could do. I want to give a few facts as to what accident-prevention has done. Up to 1918 most of the accident-prevention work in our plants was in the nature of providing safeguards for machine equipment, very little being done up to that time on educational methods, and in 1918, the first year of which we have statistics at all comparable with later dates, our lost-time accidents totaled 12, caused by belts, gearing, and other forms of power transmission machinery. At that time some of our people thought that we were going about as far as we could on accident-prevention work.
Without going into any details on accident-prevention methods adopted since 1918, I believe the following figures might be of interest showing reduction in 1927 from 1918, a 10-year period:

<table>
<thead>
<tr>
<th>Per cent of reduction</th>
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</thead>
<tbody>
<tr>
<td>Accidents on power transmission machinery</td>
<td>25.0</td>
</tr>
<tr>
<td>Accidents on point of operation of machines</td>
<td>68.2</td>
</tr>
<tr>
<td>Electrical shocks and burns in testing departments</td>
<td>83.3</td>
</tr>
<tr>
<td>Electrical shocks and burns in other departments</td>
<td>63.0</td>
</tr>
<tr>
<td>Handling of molten metals</td>
<td>80.7</td>
</tr>
</tbody>
</table>

The above are only a few of our cause classifications. We have a substantial reduction in every class.

On injury classification, the lost-time eye cases totaled 1,139 in 1918 and 58 in 1927, or 94.9 per cent reduction. Infections were reduced 59.7 per cent; fractures were reduced 51.2 per cent; and amputations were reduced 28 per cent. The total reduction for all classifications was 74 per cent.

The employer has several factors which ought to show him that accident prevention is a good thing. One of these is the item of compensation payments to injured employees. I believe that every employer, whether he is self-insured or carries insurance with an insurance company, would naturally get that figure annually at least, and his accident cost would be reduced, with reduction in his compensation payments. We have found that increased cost per case, caused by reduction of waiting period or increase in maximum payments, serves as an incentive to our men to get even more active in the reduction of accidents so as to compensate for additional and increased payments. We have made a reduction in compensation payments for several years. Two of these reductions, however, I will cite.

January 1, 1925, the waiting period in New York was reduced from two weeks to one week. During the year 1925 our compensation payments were reduced $35,000 below those of 1924.

October, 1927, the maximum payments in New York were increased from $20 to $25. The first eight months of 1928 show a reduction in our compensation payments at Schenectady from the first eight months of 1927 of about $20,000.

Mr. Duxbury. I have gotten one point at least out of this discussion this afternoon. For a long time I have been inclined to the conclusion that there was no justification for compensating the results of accidents that happened suddenly and by force that did not also apply to disabilities of an occupational disease nature. This discussion this afternoon has confirmed me in that impression, but there is a technical thing which has to be done in order to amend most of our laws. There are lots of ways to bring the thing about, but there are certain laws that already have that situation.

It does seem to me that this association ought to have a committee on legislation, such as the State Bar Association and the American Bar Association have. Here we have a concrete instance where we ought to have a committee on legislation by which we can advise those who are interested in how this thing can best be brought about.

In our State I think I could bring it about by amending one section of our statute and repealing another section; that is, I would
repeal the section which attempts to schedule the occupational dis-
eases which we will compensate, and amend the other section so that
it will take care of it. It seems to me that is the way it could be
accomplished in our State.

Then there is another thing: I was much interested in this dis-
cussion about what my friend Stewart called the “fool way” to do
things. If you use intelligent means of going at it you can accom-
plish it; if you use a fool method you do not accomplish it.

I applied that to a situation which exists in our State and has as
long as I have been observing it—that enactment in our law with re-
ference to safety regulations and some other things. Unfortunately
it uses the word “order”; whenever we find conditions that need
remedy we have to give the employers an “order,” make an order
on them to do so and so. Just as soon as you give the employers an
order they feel as if they were being bossed or imposed upon by
some higher authority, and they resent the idea that they are being
ordered around; it is offensive. If we were to change that law and
have it say that we are to leave with employers some suggestion, we
could get it done by suggestion lots of times when we could not by
orders.

I am going to have our law amended with reference to that. It
gives the wrong impression sometimes to our investigators or in-
spectors; they feel that they are giving orders to do something
instead of going there in another kind of capacity—that of trying
to cooperate with the employer, to assist him, and to give him
friendly suggestions they may have gained from experiences they
have had with other employers. That amendment may help their
attitude as well as the attitude of the employer.

Mr. Maguire. I would like to express myself as being in hearty
accord with Mr. Duxbury’s suggestion for the appointment of a com-
mittee on legislation—I do not know whether it would be well to call
the committee just that, but at least a committee on cooperation
with the States in workmen’s compensation and accident-prevention
work. If we could get such a committee, one that will distribute
information regarding the best laws and the best method of reporting
accidents and things of that sort, it would certainly be helpful to
the States in getting through uniform statutes and uniform practices.

Mr. Wenzel. I do not believe that this organization is anything but
a representation of administrative officials; the problem of legisla-
tion is entirely with our legislatures and with our Congress. I be-
lieve there is a field in which the organization can be of use, but it
seems to me that that field is limited, and if any action is taken along
this line it should be so limited. Lobbying has been frequently
spoken of in times past, often to the detriment of the person who was
supposed to be lobbying. There is a kind of lobbying, to my mind,
which is absolutely proper and correct. I have been a lobbyist of
that type myself, representing an employers’ organization. I never
asked a man to vote yea or nay upon a question, but I did present
to legislative committees facts which might pertain to a particular
subject. I believe that it is perfectly proper for this organization to
undertake such a work, to prepare, collect, and present facts which
may relate to a particular piece of legislation, but I do not think at
any time that this organization should take the position of lobbying
generally, or of securing votes, or of attempting to influence, except
by facts as they may bear upon a particular subject.

Mr. Hatch. I gather that what is contemplated by the proposal
of Mr. Duxbury is not a thing that would in any shape or color bear
the color of lobbying. The incident which Commissioner Stewart
cites is essentially this: A legislature proposes to enact some legisla-
tion in workmen's compensation, or is considering such legislation,
and it writes to the secretary of this organization asking for informa-
tion. I submit to all of you that, generally speaking, when it comes
to legislation our legislators need information, and it is a wholesome
sign when some legislature says: Probably there has been experience
on this point somewhere and there are people who are dealing with
this thing under existing laws and who know something about how
things work under a given law; and the most sensible thing in the
world is for that legislature to say: "Who has that experience and
who can tell us about it?" And where in heaven's name would it
normally turn except to this organization?

I think we have a proposal here that is full of possibilities for
much greater usefulness on the part of this organization, not by way
of lobbying for anything, but by way of bringing to the assistance
of some State, when it is undertaking to do something with compen-
sation by way of legislation, the combined experience as it has been
observed and studied by the men who are handling that very thing.

I am very much in favor of the proposition; I am not at all fearful
that we shall be setting up a lobbying organization. I am confident
that there are more ways than one in which this organization as an
organization can be useful in such ways, mainly in furnishing infor-
mation about the job we are all handling to some particular agency
or person or office who wants to know. We do know by experience
how a given proposal does work or is likely to work.

Mr. Mowry. It strikes me that the suggestion made by Senator
Duxbury is one of the best that I have listened to at this meeting.
I say that because it peculiarly fits into our situation. We are con-
templating, in fact we are faced with a number of changes in our
compensation law and in our entire procedure. I thing it is fair
to say that the entire department since 1915 has been built up by men
who have had very little, if any, primary experience in compensa-
tion work. We have the usual problems ranging all the way from
proper handling of first reports of accidents to the entering of proper
awards, and the practical system of trying to get at the facts.

I can see where a committee of this sort would be of wonderful
value to the States who frankly do not have much contact with the
people here in the East. We are at a loss, many times, to know
what system to use, what scheme to devise. I am not speaking now of
the substantial features of the law, but of the administrative end
of it.

To give an illustration: I talked yesterday and spent some time
with the New York commissioner. I heard a long dissertation on the
value of sending everything to a trial calendar. The day before I
listened to a presentation of the idea of sending it to an arbitrator.
Those are samples of the problems that we in Colorado confront,
and when you add to that the disposition of the legislature to cut appropriations to hold down the amount of help and the salaries, these short cuts mean a lot to the man who has charge of the responsibility of getting a certain volume of work done, especially if he has only $10 to spend where he ought to have $50. I think that suggestion is good. I hope you will put it through.

Mr. Duxbury. I am going to present that question as one of the resolutions, so that we will have it in form. I will try to have those resolutions ready to be submitted some time early in the forenoon tomorrow, and in doing that I want it to be understood that it is only for the purpose of getting the subject matter before the association and that there will be no pride of authorship or phraseology, but that I will expect the members to whip it into such shape as it ought to be.

[Meeting adjourned.]
FRIDAY, SEPTEMBER 14—MORNING SESSION

Chairman, Fred M. Wilcox, chairman Industrial Commission of Wisconsin

Mr. Duxbury. Before proceeding with the printed program I would like to bring up the question which was a matter of suggestion during the closing hours of the meeting yesterday. I have a very rough resolution that I wish to present now:

Resolved, That the executive committee be, and it hereby is authorized and empowered to take such action as such committee may determine with regard to advising or assisting members or committees of State legislatures or of Congress in relation to pending enactments or amendments of compensation laws, safety laws, or other labor laws that have been the subject of the meeting of this association, and to appoint committees or representatives of this association to personally appear before legislative committees when request for such action has been made and pay the necessary expenses of such committees or representatives.

Remember that it was suggested by myself in the course of the discussion, though not from any previous consideration thereof, that it seemed to me, in view of the fact that we are frequently considering what laws ought to be and coming to some conclusion with reference to matters of that character, we ought to take action of some kind by which our conclusions may be brought before legislative bodies where those matters are pending.

There was some expression during the course of the debate that having a regular committee of that character might indicate that we were going into the business of lobbying and trying to force our conclusions upon legislatures, and that that might not be in very good taste; then there was an expression which was prompted by a statement of the secretary with reference to an experience which he had in appearing before a legislative committee at the invitation of the legislative committee and to his embarrassment in knowing whom he should represent.

I am bringing the matter up in the form of this resolution, in view of our practices at various times, particularly at the Salt Lake convention where a special committee was authorized and appointed for the purpose of doing what it could to bring about legitimate compensation legislation for harbor workers and workers in interstate commerce. I happened to be a member of that committee and we did nothing very effective because we had no authority other than just simply to communicate with members of Congress and senators of our own States and some other members of the committee, though we may have had some little influence in bringing about that legislation. As we did that in that instance, it does not appear that we have the idea that it is outside of our functions to do that, and it isn't outside of our functions; the responsibility in the exercise of these functions ought to be placed somewhere. The executive committee represents this body when it is not in session, and we generally find that it has the wisdom not to do any-
thing that would not be approved by the association. After the suggestions made in the meeting here yesterday afternoon it occurred to me that some authorization of that kind to the executive committee would take care of any exigencies that might arise, and that was the purpose of framing this resolution.

I will read the resolution again, following my statement, so that you will know why it was written. [Rereads resolution.] I move the adoption of the resolution.

[Mr. Stewart seconded the motion.]

Mr. Williams. If I understand what my friend has in mind, the method of doing it would be something like this: Any legislative committee of any State legislature or of Congress, if it cared to pay the bills of this association which might result, would write either to the president or to the secretary for such information; then, if there was a committee of this kind in existence and it was asked to do something, nobody could possibly say that it had no authority.

Mr. Kingston. The Senator submitted this question to us yesterday, and our secretary brought the matter up because of the technical difficulty arising out of an incident in connection with some State last year. His difficulty was that he felt he could not use official information because of the fact that he was not so authorized by this association, and the premise upon which the suggested resolution was based was that of request.

Now, if I understand Mr. Stewart aright in his remarks of a moment ago, his idea is that this association should act on the initiative. I question the wisdom of that. I heartily support the resolution in the form in which Mr. Duxbury has presented it. I do not think there is any harm at all in passing that resolution, but if we are to go farther and concern ourselves with the initiative, with getting a law in Florida and getting a law in the Carolinas, I think we are opening the way to accusations of being a propagandist organization. I do think that we ought not to expose ourselves to the accusation of a desire to put a particular type of law in any of the statutes. We were accused years ago of being a propagandist organization for the State fund. There is no doubt that certain interests did seek to use this association for purposes opposed to the State fund idea some years ago. That has not happened lately, but it is just as important, I think, that we should keep our skirts clear from any idea that we are a propagandist organization for any particular type of legislation. Let us concern ourselves with administrative problems and give all the assistance we can where assistance is asked for, but I think we ought not to go on record as becoming responsible for initiating any legislation, either in the form of an amendment to what we consider a poor law, or in establishing a new law in a State where there is no such legislation at all.

Mr. Wenzel. I am heartily in sympathy with the remarks just made. As an individual I take this position, that my views should be forced upon you and yours upon me only as the facts may bring conviction. I think as an organization we should do the same. As I said yesterday, I believe the limits of legislative assistance by this body should be in the presentation of facts. That necessarily means that you must gather them in advance and present them, but I am opposed, absolutely, to this organization becoming a propaganda or-
ganization, to force or insist that some State shall adopt our views regardless of the peculiar conditions in that State or the demands of the people of that State. I for one would go home and refuse to continue to contribute as a subscriber to this organization if that attitude were taken. I believe it is entirely wrong and outside of the province of this organization. I do believe, as I said yesterday, that it is perfectly proper to gather the facts as they may apply to a particular situation because we have the means of gathering them, means that a single State has not, but when we have accomplished that we should end there.

Mr. Stack. What do you mean by “requests made”—requests made by whom?

Mr. Duxbury. Well, of course, that is a little indefinite; it must be implied that requests have been made by these committees and others before which you appear.

Mr. Stack. In other words, the request shall come from the legislative and not from the labor organization?

Mr. Duxbury. There is nothing here with reference to labor organization. It says, “They can furnish this information to members of committees of these legislative bodies.” I do not think that that means that when the information is requested by a labor organization, for instance, that that would be the proper source of request; I do not think it would be. I think the request should come from somebody connected with the legislative body where the matter is pending, either a member or a committee of that body.

Mr. Williams. This is an international organization. We have talked about legislation of the States and Congress.

Mr. Duxbury. That is with our usual idea that the United States of America is the world.

Mr. Kennard. I would like to ask Mr. Duxbury one or two things. He speaks of a legislative committee to represent this association. In my years of attendance in this association I have found very few things upon which this association agrees, and I anticipate that we are going to have a discussion a little later which will bring out that there is quite a material and fundamental difference in the feeling about what a compensation law should do, to start with. Is it the Senator’s expectation that this legislative committee when invited shall go before the committee of the legislature and propound the viewpoint of the association as an association, because I am afraid it will not know what that is, or is it the purpose to present the matter from the various angles based on the information which we have? I speak of that because of my personal experience; each year I am asked to go before the Massachusetts committee in executive session and talk about the various bills which have been introduced. It has always been my position, in doing that, that it was for me to give to the committee what seemed to be the advantages of the various bills and their disadvantages. If asked for my personal opinion I would give it; I do not give the opinion of my commission, because I rarely know it.

Is this legislative committee expected to give information on both sides of what may be controversial—because there is hardly a section of any compensation law which does not have in it the elements of a
controversy an attempt to give a judicial standpoint, or are we to give the standpoint that the legislative committee—I speak of our committee as the legislative committee—itself has? Is it going to give the standpoint of the individuals or to attempt to give the standpoint of this association? Is it the Senator's anticipation that it will present the two sides of the question, if there are such, give the committee of the legislature information along the lines that have been suggested, and let it pass upon whatever controversial points there are in the matter, the representative of our committee giving the benefit of our experience bearing upon particular matters? Certainly, if this commission points out information to a State attempting to change its whole plan, I do not think it will meet with any great favor. We have had some experience in Massachusetts; one of the commissioners from a neighboring State came there attempting to tell Massachusetts that it ought to adopt a law similar to the one they had. He was cheered by some and jeered by others. The situation left behind was not entirely a pleasant one, and in my opinion it would not inure to the credit or the standing of this association if we are going to take a decided stand upon controversial matters.

I believe there is a field in which such a committee might be of assistance; I believe that it might so present information that it would find itself with a reputation for fairness of presentation which might in time lead to confidence, but I think that the moment that it attempts to present the matter from the standpoint of a partisan or an advocate, its value will greatly diminish. I started to ask you a question and ended by giving my own viewpoint.

Mr. Duxbury. I think your viewpoint would be practically what my answer would be. As I said at the beginning, there are many perplexities connected with this, and the suggestions that were made last night contained many viewpoints. It is a difficult thing for anybody in a particular instance to represent the views of this association, because anyone who has been here a great deal knows that that is a hard thing to determine.

Of course, this association can, like a caucus, determine that it favors such and such views, but there is some serious question about how we can get at this question of being useful, bettering conditions with reference to this character of laws, without at the same time being offensive, not only to people to whom we want to be useful, but also to some of our own members.

I recognize that there is some difficulty connected with this, but it is true that we have deliberately done that in several instances, one of which I cited, where we attempted to authorize this association to take definite action in relation to pending legislation and as to procuring legislation. Maybe we were outside of our province when we were doing that; maybe we ought to do that more than we do. I do believe that the information that the members of this association have from their consideration of the subject, and from the discussions and debates which they have had in their meetings, would be very useful to members of legislative bodies or others contemplating such legislation in getting a better class of enactments, but, as I say, it is a delicate subject. We all know that there was more or less resentment because of what some people thought was an attempt to use the association to promote certain types of laws and to discredit
others, and we concluded long ago quite unanimously that that is not a wise thing for this association to indulge in. It is hard to state the dividing line, but I think that with the limitation that the executive committee shall do that only upon request there is not likely to be any very serious consequences, and it might be the means of permitting us to be useful where we can be useful.

Mr. Baldwin. Mr. Kennard referred to this resolution as the forming of an executive or legislative committee. As I understand the resolution it does not in any sense contemplate the formation of a legislative committee or any other committee; it simply gives to the executive committee authority to furnish information and to collect information to be presented to legislatures, legislators, or others upon request.

Mr. Duxbury. The essence of it is that it leaves the question of what should be done in any instance to the wisdom of the executive committee and vests in it our confidence that it will not do anything that is embarrassing.

Mr. Thigpen. As from one of the States that really is in dire need of a consulting committee, if I might so frame this proposed committee, we of Alabama would heartily indorse it. In the last legislature we had two bills presented which would have given us extremely beneficial changes in our compensation act, but these died before they reached the legislative committee. I am convinced that if at that time we had presented the bills in that way, if we could have had a conferring committee in this association, that the result would have been to our good.

I want to say again that we of Alabama are for all the legislative information and assistance regarding compensation laws of the Nation and the entire world that we can get.

The Chairman. We should bear in mind that our executive committee is made up of the past president, the incumbent president and secretary, and the vice president and three other members—am I right?

Mr. Stewart. Five other members.

The Chairman. There are nine then on the executive committee, and selected as they are they ought to give us some assurance of real balance when it comes to action being taken on what request should be recognized and what the course should be.

Mr. Heaberlin. I am not at all familiar with the workings of this association, I regret to say, having attended only this meeting. I believe that the resolution offered, to say the least, goes far afield in its object. My conception of your organization is one to advance the fundamental and economic principles of compensation laws and rates and regulations. I think a regulation authorizing your executive committee to wait on various legislative committees at the request of such committees for the purpose of informing them as to sound principles of compensation theories adaptable to their own State needs, would be all right. It is my opinion, that you would find scarcely any one State whose needs would be adapted to the same compensation act that would fit the needs of another State, and, for my own part I should seriously object to the resolution if including
labor laws. I think that the Senator is far afield, in that too many controversies in labor legislation exist that have nothing to do with and no distinct connecting point with legislation as to compensation.

Mr. Wenzel. I do not want any misunderstanding as to my attitude here. I want to say that personally I value very highly the work of this organization. I should dislike very much to see anything come up that would disrupt the organization in any way. I feel, however, very strongly that the resolution is still a little too broad, and I believe it should be limited entirely to the presentation of facts, letting the local legislature make its own conclusions from the facts. Let us not become a propaganda organization for any particular type of law in a particular State.

Mr. Kyle. I can see no objectionable feature to this resolution. I can not conceive or concede that it is in any way a propaganda movement, for the reason that, as I take it from the resolution, it does not seek to empower our executive committee to take the initiative in any movement. I think it is almost impossible to separate labor laws and compensation laws; they are very closely allied in my opinion.

The Chairman. Whether or not we are going to authorize this committee to recommend, or to engage in a contest, back in Wisconsin or Oklahoma or some other State, on child labor laws, and laws on women's hours and minimum wage, and things of that sort—that is what Mr. Heaberlin thought was meant by reference to labor laws. Do you think we ought to get into any job of that sort?

Mr. Kyle. No, sir. I take it that our executive committee would be possessed of the necessary discretion in those matters and would not enter into, engage, or consider any labor law not directly connected with our compensation law.

The Chairman. I think you are quite right in that assumption, but Mr. Heaberlin did not want it passed over.

Mr. Heaberlin. I would suggest that assumption, and admitting that your committee has that wisdom, it certainly would not be to the credit of this association to include something in the resolution that we did not expect the committee to do.

Mr. Kyle. I do not think that the resolution was meant to include things that the committee was not expected to do. As I said before, labor laws are so closely allied and connected with our compensation laws that I do not think that that clause would be objectionable. The fact is that it might be given a broader construction than is intended. I do not think it is objectionable and I do not think it should be eliminated from the resolution, because, as I stated, the two classes of laws are so closely allied that they are entitled to consideration. It is quite true that there is a wide variance in the laws of the different States, but our executive committee, profiting from an exchange of experiences, you might say, as the result of these conventions, or from a construction of the laws of the different States, could very readily tell what information would be applicable to that particular State and the different conditions arising in that particular State, and since, as I view it, it is not intended that this committee take the initiative in any movement whatever, but merely act as an advisory committee, I do not think that that could, should, or might be construed as propaganda—when "requested."
The Chairman. I am sure there is no one here who does not want this association to be as helpful as it can be and still maintain its integrity, and Senator Duxbury and those who are sponsoring this thing are simply evidencing that desire. There has been expressed on the floor at our meetings and in the lobbies and in private conversations oftentimes the position of many members of this group, that they ought never to interfere with the legislature in their own home States, and if they sit by back home as calmly as they would have me believe they do it occurs to me that the legislature in that State ought to have some rather impartial group to go to for help. It can not be supposed that this executive committee would ever give any information of detailed character on any contentious subject. Its help, its views must always be a composite, and for my part I do not see any objection to this resolution.

I am hoping that we will find it desirable to let this executive committee at least try this thing out over the next legislature session.

Mr. Armstrong. I want to make myself clear in regard to the question of what I think the duties of compensation boards are, and this differs very radically from the views expressed by our chairman yesterday, as well as by those of some of the other members. I have no great objection to the resolution as read by Mr. Duxbury, but it may be the entering wedge that may cause a lot of trouble in this association.

Mr. Stewart says that five States have no compensation laws. We may go ahead and get these five States to pass compensation laws; then the question may come up here that some of those laws give only 5 per cent, and we want to advocate that there should be no limit, or we want to make it 66 2/3 per cent. Where are we going to end if we carry on propaganda of this kind?

My views in regard to the duties of a compensation board are to give the legislature, when asked, all the information possible that it can in regard to legislation along the lines proposed; but to go and tell the legislature that you want to raise your percentage from 5 or 55 per cent to 66 2/3 per cent, to cut out your limit—instead of paying medical aid for one month, to pay it for the full time, or instead of putting the limit of $100, to put no limit—then the board gets into trouble.

This may be more up to States where there are State funds, because in those States we have to meet the employers and to meet the workmen, and if we go to the legislature, as somebody has suggested, and advocate that it give more compensation or pay the widows and children more, we are jumped on by the employers and told, That is not your business, you are appointed as an administrative and a judicial body.

Did you ever hear the judges in a State calling a meeting of all the judges and advocating that the legislature make changes in the laws? I never did.

The Chairman. I will tell you of one. In the State of Wisconsin the circuit judges of that State have an organization which meets regularly, and they counsel the legislature as to what changes ought to be made. I protest this notion that men who know should sit down and close up like clams and wait until somebody comes around and coaxes them to ask this or that or give this or that information.
Mr. Duxbury. I felt long ago that I could not boast about Minnesota's compensation law because of the many defects and deficiencies, but I am proud of one thing, and that is that we are expressly required by the law to suggest and advise amendments in relation to laws.

Mr. Williams. So are we in Connecticut.

Mr. Duxbury. Why shouldn't we be? We are more likely to know something about what ought to be done, being familiar with all the facts and all the workings of the law and what its defects are. I am impressed, too, by some remarks that have been made here, that if we are to follow the ideals which have been expressed in the discussion against this resolution, we have very little to do in this association.

I have been prideing myself for some time that we are gathered here for the purpose of seeing where we could better our laws, and judging from the experience of others, when we get the information, how we can better our laws. If when we get the information we are to shut up like clams and not say anything about it—if we can not use it when we get it, and if we can not suggest any changes for fear we are going to be offensive—there is no use coming here, getting the information, and becoming better informed about compensation laws. We had better be offensive if it offends those who do not want any improvement.

Mr. Heaberlin. I do not want to leave the impression that I oppose the executive committee's opportunity and duty to advise. I believe that the phrase, "Workmen's compensation law," is broad in its application and will include any necessary information that this committee could give to any State, and I am sincere in my position that the resolution should not include the words "labor laws," because they certainly are separate and distinct from compensation laws in the majority of instances.

Mr. Duxbury. I was going to suggest that that portion of the resolution ought to be stricken—"safety laws or other labor laws."

Mr. Stewart. "Safety laws" might be left in there.

Mr. Duxbury. Unless there is objection I want to strike out the words "and other labor laws."

The Chairman. Is that satisfactory, Mr. Heaberlin?

Mr. Heaberlin. That is satisfactory. I suggest that the resolution be read.

Mr. Duxbury—

Resolved. That the executive committee be, and it hereby is, authorized and empowered to take such action as such committee may determine with regard to advising or assisting members or committees of State legislatures or of Congress in relation to pending enactments or amendments of compensation and safety laws—

Mr. Williams. I suggest the word "assemblies" for "legislatures"—that might include Quebec.

A Member. Why not make it "law-making bodies"?

Mr. Duxbury. "Law-making bodies" then; that would include those fellows in Canada that we so frequently forget until we need them; then we know they are valuable.

law-making bodies in relation to pending enactments or amendments of compensation and safety laws, and to appoint committees or representatives of this association to personally appear before legislative committees when request for
such action has been made, and to pay the necessary expenses of such commit-
tees or representatives.

[The question was called for and the resolution was adopted as corrected.]

The CHAIRMAN. I wish at this time to make some observations
aside from the regular program, yet to my mind appropriate to this
first meeting of the association in New Jersey.

If you were representing the first State to have a workmen’s com-
pensation law; if you had been present at the birth of this organiza-
tion at Lansing, Mich., in 1914; if your State had never failed to
have representation at a single meeting of this association or to lag
in its fealty to the fundamental purposes of the organization—
then you would know the thrill and joy of interest that is in me.
Other commissioners have also been long in service to their States
and to this association, and for quite similar reasons have like
thoughts and feelings. Notwithstanding, there must and does come
to myself and to these other commissioners much of sadness and
regret.

When Mr. Kingston announced at the session Tuesday afternoon
that W. B. Marshall, of Oregon, was in the convention hall, I felt
doubly repaid for having come on to Paterson. It was my first
meeting with Mr. Marshall since the Seattle convention in 1915, al-
though each of us had continued to serve our States through all
the intervening years. But most of those men who were in at the
beginning have dropped out of the service—some from personal
choice or necessity, some by reason of death, but most of them re-
lieved for reasons that are inimical to good compensation admin-
istration.

It is only a handful of us that had the privilege of knowing the
lamented Judge Yaple of Ohio. Perhaps fewer still knew Dagget
of Washington, Kinnane of Michigan, Pillsbury and French of Cali-
ifornia, and Crownhart of my own State. And there was Holman
of Massachusetts, Duffy of Ohio, Simonds of Vermont, and many
others who organized compensation administration for their respec-
tive States and helped to chart the course of this association. French
is back in the service in California, and Marshall is administering
the longshoremen’s act in the Northwest, so we may hope to have
their counsel and advice for future years. But many of the pioneers
are gone from the service, usually taken just at the time they could
have served us best, and it is realization of that loss which hurts
most.

And now we have come on to New Jersey, to the State whose indus-
trial worth and resources were pictured so wonderfully by the gov-
ernor. It is the State that, notwithstanding size, ranks third in the
value of manufactured products. It was the third State to have a
workmen’s compensation act. It has furnished the country with the
most outstanding instrumentality for demonstrating safety of opera-
and process—the safety museum.

And it has given to labor law administration the finest of men. You
will travel far and wide in fruitless search for another McBride.
Where will you find a man that has given equally with John Roach
to the whole cause of protection from injury? In what State has
mastery of administrative detail been better secured than by Mr.
Weeks? A State that finds within its borders, coincident with its need, men of this caliber for the administration of workmen’s compensation and other labor laws, must first have committed itself to a lofty purpose in its dealings with management and men.

As I contemplate this fine background and note the perfectly evident purpose of this State to deal wisely and impartially and humanely with the worker and his employer, because of the character of men she has assigned to the task, my mind turns to one little known to visiting members, but known to all New Jersey—General Bryant. He was one of God’s chosen few. None knew him but to love him. I came to know him early in my service. I met him often. I joyed in his friendship. I marveled at the combination of rare judgment and insight and firmness and kindness that characterized his every act. I went to him for counsel and valued his advice. Much was the good he did for States other than his own.

I shall cherish always my last meeting with him. We spent several days in the Pinchot conference at Milford, Pa. Then I came on with him to New Jersey and spent several days in close study of his State’s plan of administration and the type of service rendered. During this time, I lived with him, ate with him, slept with him. I helped strap to his broken and twisted body the braces of leather and steel that injury and disease compelled him to wear. Through each of those wonderfully spent days, I noted in all his work and dealings such patience as few possess. I marveled that out of a body so broken and bent and gnarled there could come such sweetness of spirit, such love for all mankind, such heart in every act and deed.

There was only one General Bryant. Intimate acquaintance with him such as was enjoyed by his staff and so many New Jerseyans, must have left an ineffaceable influence upon the department and upon his State. Those members of the association who knew General Bryant would not wish to come into the State he loved so dearly and on a mission for which he would have given his all, without acknowledging our deep appreciation of him and all he meant to the cause of intelligent, humane, painstaking development and administration of labor laws. Out of a full heart, I speak these words of him.

We will have at this time the paper which Senator Duxbury has prepared.

Should the Association Attempt to Determine the Relative Benefits of Existing Compensation Laws?

By F. A. DUXBURY, chairman Industrial Commission of Minnesota

May it be understood in the beginning that my purpose in presenting the question in the title to this paper is not to urge upon you any particular conclusions of my own, but to attempt to get the subject before this association for discussion, to the end that whatever action is taken, either for or against the suggestion, it be based upon your deliberate consideration with the fullest possible
information of the objects to be served, the difficulties involved, and possible adverse consequences likely to result.

It may not be inappropriate to state here some of the circumstances that have resulted in the questions being presented at this time. Among the reasons for such statement is to inform you that the subject matter is not one that is original with me, and for the further purpose of showing in some degree the reason why I do not intend to urge any conclusions of my own as to how the matter should be determined.

Those of you who attended the Baltimore convention in 1922, or who may have read the proceedings of that convention, will recall a rather unusually interesting paper read by Mr. George A. Kingston, of Ontario, entitled “A comparison of permanent partial disability ratings and awards.” This paper and the discussion resulting is reported in the proceedings of that convention (Bureau of Labor Statistics Bul. No. 333), commencing at page 97. That paper was based on the responses received from several jurisdictions as to the amount of compensation payments that would result in such jurisdictions in five hypothetical cases submitted to the administrative bodies of such jurisdictions. These responses indicated a wide difference in the amount of compensation which would be paid in the different jurisdictions in these particular hypothetical cases.

The discussion following the paper seemed to indicate that, in some instances at least, the result in some of these particular cases submitted did not accurately reflect in every particular the relative merits of the law in certain jurisdictions, and was not an entirely satisfactory test of the relative benefits of the laws in at least some of these jurisdictions.

Since the Baltimore meeting there has been no further express consideration of the subject in the meetings of this association until the meeting at Atlanta in 1927. At that meeting, a motion by Mr. F. M. Wilcox of Wisconsin was adopted to the following effect:

That the executive committee be requested to give consideration to the question of whether some one of the commissioners should not be assigned the task of giving us at the next convention a survey of relative benefits under each jurisdiction on a representative group of specific injuries, the factors to be considered in each case to be designated by the executive committee.

The motion included a further subject of relative costs of administration, but that portion of the motion does not come within the purview of this paper.

Several months prior to this meeting, the secretary-treasurer of this association asked the writer to undertake the task of “making a survey of relative benefits under each jurisdiction on a representative group of specific injuries” in compliance with the above-stated portion of Mr. Wilcox’s motion. Correspondence with the secretary and with Mr. Wilcox developed the fact that the executive committee had not attempted to designate the factors to be considered in compliance with the motion, and that even if that had been done, the preliminary work involved in such a survey was quite beyond my own time and means, as well as requiring more statistical talent than I possess. It was finally agreed that the subject ought to be presented to this meeting for the purpose of discussion and to determine in the first instance whether it is expedient for the as-
sociation to attempt the thing suggested, and if so, to define the means and manner in which the work shall be done.

It seems quite certain that, if it is determined that a survey of this character ought to be made, the executive committee or a special committee should definitely determine just what shall be the factors and basis of such a survey. The work of procuring and compiling the data must be done, it seems to me, by some organization equipped properly to accomplish the object, and the conclusions to be drawn from the compiled data would be a proper subject for a paper or a committee report.

As I stated in the beginning of this paper, I have no settled conclusions on the fundamental question of whether or not the survey ought to be attempted, and it is not my purpose to indicate by anything contained in this paper any conclusions of my own. The purpose of this paper is to attempt to bring to you for your consideration and action the primary question of whether such a survey should be attempted by this association, and if it be determined that it should be done, to have you prescribe the manner and means of making such a survey.

In considering that question, I think it should be done uninfluenced by the fact that the suggestion came from one of the oldest and most highly respected members of the association, and that the Atlanta convention by its action on the motion, in effect at least, seemed to have approved the proposition.

In view of the limitations which I have imposed upon myself in relation to the expression of any conclusions of my own as to what this association should do in the premises, it might be consistent to close this paper with what has been said. On the other hand, it may stimulate a more thorough discussion, which is one of the prime objects of bringing the matter before you at this time, briefly to state some facts and conditions which it seems to me are important in considering what action is wise on the part of the association.

Practically everyone who has had experience in the administration of compensation laws is convinced that every existing compensation law is far from perfect, that some are better in certain respects than others, and that every jurisdiction could improve its law if certain features of the law in other jurisdictions were incorporated in its law, and no doubt in many other ways.

It can not be denied that, in spite of the maxim that comparisons are always odious, many improvements in the provisions of existing laws have resulted from the discussions in the meetings of this association in which some weakness of existing laws was disclosed and a better provision was found in another jurisdiction or in several other jurisdictions.

The time has passed when we need to waste any effort in justifying the general principle of compensation laws. In most of the jurisdictions belonging to this association, especially where these laws have existed for some time, we can now render service better by studying how to improve the law to make it better serve the fundamental purposes of the compensation laws.

I do not intend to imply that the ideal situation would be to have the provisions of compensation laws identical in all jurisdictions. I think all will agree that varying local conditions require certain varying provisions in the several laws.
In the debates that have occurred in connection with several propositions this association has considered in times past, I have been impressed with the thought that compensation laws as they now exist in the several jurisdictions belonging to this association differ very materially in their fundamental characteristics and purposes. These differences probably have resulted from a failure on the part of legislatures, and of courts called upon to construe these laws, to comprehend what seems to me to be the proper fundamental characteristic of compensation laws. In many instances, it seems that the legislature in enacting the law, and the courts in construing its provisions, have considered the law to be a legislative rule or control of indemnity or damage liability for personal injury in the relations where the law applies, which relations vary in the different jurisdictions.

I am not entirely satisfied that in some instances certain actions of this association, in the recommendations which it has made with reference to modifications of compensation laws, have not been founded, in some degree at least, on this conception of the purpose of compensation laws. I think it vitally important that, before this association takes any definite action with reference to the matter which is the subject of this paper, a clear and definite understanding of what should be the fundamental character and purpose of compensation laws should be discussed and well understood.

I believe that no one will seriously contend that the amount of money which is paid to an injured workman under compensation schedules bears any necessary relation to the measure of damages in the way of indemnity for the result of any particular accident involved. Nevertheless, much of the criticism of the results of compensation laws seems to be based upon a comparison between the money payments under the compensation law and the amount conceived to be adequate indemnity for the consequences of the accident.

The fact that a young man who may be earning a learner’s wage receives a specified number of weeks of compensation for loss of an eye at the minimum rate, amounting to slightly more or less than $600, while a man advanced in years whose working period is practically ended, receives for loss of an eye the same number of weeks of compensation at the maximum rate, aggregating $3,000 more or less, is frequently cited in criticism of the justice of compensation law provisions. Many other such apparent criticisms of compensation laws will occur to anyone who has had experience in the administration of these laws.

It is undoubtedly true that if compensation laws are to be considered as a system of statutory indemnity for the effects of an injury, such criticisms are warranted. It does not follow, however, that because in Minnesota compensation of $3,600 is paid for the loss of a leg at a certain age and wage, that the Minnesota compensation law is a better compensation law than that of Massachusetts where $1,049.53 would be paid in compensation under the same state of facts, as appears in a table in Mr. Kingston’s paper referred to above.

If the wisdom and virtue of compensation laws are to be tested by the amount of money paid for compensation in a specific instance and we are to disregard all other provisions and purposes of the
law, such as the rehabilitation of persons injured in industrial accidents, we lose sight of the real and substantial justification for this class of laws.

It seems to me that the theory and principle of indemnity must be disregarded in order to justify a common effect of compensation laws giving to the individual whose injury and disability are caused absolutely by his own fault the same consideration and benefits as are given one wholly without fault, suffering an identical injury and disability. It is something other than the theory of indemnity which can justify full compensation benefits to a workman not physically sound, whose accident would have been comparatively trivial and probably not disabling to a physically sound individual. I understand that there are some laws which authorize diminishing the benefits where it appears that the disability existing after an accident is caused in part by existing infirmities. Such provisions, however, seem to me to be suggested by the theory of indemnity for the results of the accident, and to lose sight of what I believe should be the fundamental purpose and character of compensation laws. Is it not possible that, in some measure at least, these laws have been framed with regard more to the ideals and requirements of insurance actuaries than to what should be the rights and liabilities that best serve the interests of society?

I venture to suggest that if this association concludes to make a survey to determine the relative benefits of existing compensation laws, that, as a preliminary to such survey, a diligent and careful study be made to determine the proper characteristics and provisions of any law that deserves to be called a compensation law, and that such survey be made for the purpose of determining how well any particular law measures up to these ideals and considerations. It seems to me that this subject is one of vital importance, and one which has been, so far as my own experience goes, very much neglected and generally not understood. I shall be gratified indeed if what I have been able to suggest should result in a discussion and consideration of what seems to me so vitally important to the betterment of compensation laws generally.

DISCUSSION

Mr. Stewart. We have discussed the wisdom of determining the administration costs of the compensation laws in the States, and I have said, and it has been practically agreed to, that it would be a whole lot better that the association do it, that we do it ourselves, than to have somebody on the outside do it for us.

The Wilcox resolution in Atlanta was along that line; that had, as I understood it, for its primary purpose that the committee on statistics should determine the cost of administration of these laws. Mr. Wilcox added to it a clause that the committee should compare the administrative costs with the benefits derived by the injured workman.

It seems to me—and I think before you get through with this discussion you will agree with me—that you have put on the committee on statistics an utterly impossible job, taking into consideration the time we have to spare.
While I still believe that you had better show your administrative boss that we have somebody to do this, yet if you propose to tie it up with impossibilities, then for the purposes of the record I move that the committee on statistics and costs, which originally meant administrative costs, be relieved from all of the various suggestions and pending resolutions that have dragged down through the years, and that it be instructed to drop the whole subject of administrative costs.

Mr. Duxbury. My paper had nothing to do with that part of Mr. Wilcox's motion. There were two separate parts: one relating to administrative costs, which was not assigned to me. I had nothing whatever to do with that, and I think I pointed that out in my paper, that it was not related to administrative costs; that that did not come within the province of my paper, for the reason that in the correspondence which I had I was asked to consider only the subject which I have considered in my paper. The other matter, that suggested by the secretary, I did not consider at all.

Mr. Stewart. Can I get a second to my motion?

The Chairman. Mr. Stewart, will you wait until I say a word with regard to the resolution that I offered at Atlanta?

I do not think there is in that resolution any suggestion that I wanted the comparison of administrative costs to be made upon the basis of the benefits of the law. I think if you will go back to the wording of the resolution you will find it quite clear that my desire was to have the study of administrative costs made according to the various types of compensation coverage. I wanted the States that have State funds compared one with another; I wanted the States that have straight insurance coverage also compared one with another, and the costs in those States which have competitive State funds compared.

* * * and second, the question of whether there should not be committed to some commissioner the study and discussion at the next convention of the relative costs of administration of the various jurisdictions grouped according to character of insurance protection, and otherwise as the committee may direct.

That was my purpose. I did not think it was fair in a study of administration costs to compare Wisconsin, a true insurance protection State, and likewise Connecticut, with Ohio and West Virginia. It was not profitable, from our standpoint; and that is the reason I had no such thought as Mr. Stewart has drawn from that resolution.

Now, may I, while I am on my feet, and I have the advantage of you this morning because the obligation of upholding this resolution is upon me, say I did not have any thought of slipping anything over on the Atlanta convention, though I did come during the closing hours——

Mr. Duxbury. I did not mean that.

The Chairman. But Mr. Stewart will bear me out in my assertion to you that for many years I have thought that we ought to pursue that method in our conventions. Our programs are failing. That is not very complimentary, and if there has been any good conven-
tion we have had one here, nevertheless we are getting pretty well fed up on this kind of a program; aren't we Mr. Stewart?

Mr. Stewart. Yes, yes.

The Chairman. And it is the view of people who have been attending these conferences year in and year out that we will have to get back to the round-table plan of helping ourselves and helping each other.

Now I offered this resolution for a comparative study of benefits in specific cases in the specific States. I know what Kingston's experiences have been. He delivered the same kind of a paper on another study that he made at Columbus. I heard that and I listened to people in the lobby afterwards who were not satisfied with the rating that their States got, who thought Kingston picked out the questions in order to show up Ontario to the best advantage, and to put down some other State. He didn't do anything of the kind; that isn't Kingston. Nevertheless those were the criticisms, and there were some at the Baltimore convention, who felt likewise about the paper he delivered there, so I said:

I want this executive committee to pick out the factors that are to be inquired into by the man who writes this paper, so as to take the burden off of him; that what he is doing—making this comparative study—is a job of this association and committed to him.

Compensation has been declared by you and by myself and by the courts, times without number, to be a system undertaking to put on industry and on the ultimate consumer the loss that men are sustaining in wages because of industrial injury, but we proceed to put just some small fraction upon industry and let the men lug the balance of it. I think it is high time we commenced seeing what our various States are doing. Back in the home State—you have heard it from the people in your State and I have heard it in mine—men stand up and shout from the housetops what a wonderful law we have in Wisconsin, and what things it does, when they do not know a thing about what it does; they tell the public a lot of stuff that is not so. They are doing that in your State just as they are in mine, and I think it is time we showed up in some public document the shortcomings of States and the meaning of responsibilities by other States, so that when people discuss these subjects they will discuss them with reasonable intelligence.

But I had something different from that in my mind. I wanted, of course, to have the States convinced of their own shortcomings; I wanted those other States that have met their problems to get the credit for it; but I had in mind something entirely different from that. I wanted that study after it had been made to be sent out—broadcast—to every State before our convention assembled, and to have our program based upon that study, I wanted the executive committee to put upon the program the round-table discussion type of program for the day—to pick out certain of the States shown up in the survey in one light or another, and to ask representatives from those particular States to come and tell us how they compensate for permanent total disability, for example—Oklahoma and Illinois, put them on the program, and Wisconsin and New York, and as many as you want—and why they do it that way. Then let us talk about the systems we have for a specific thing. Let us have our study made on
hypothetical questions which the executive committee puts up to us; for example take deaths; what you do on remarriage; what you do on temporary disability; how you meet medical aid; and how you meet burial expense—just a mass of subjects we could gather for this survey—and then utilize that survey as the basis for the round-table-discussion plan of program instead of the one we have had.

I have a study that the National Council has made and I know the differentiations in the insurance rates of the various States, but I am disposed to think, Mr. Stewart, that perhaps the secretary had better not use them. I do not want to give credit this morning to States that have met their obligations or to criticize those that have not, as I view it, and I think it is just as well perhaps that these figures should not be spread upon the record.

[Reads insurance figures.]

Mr. Stewart. You have read from a sheet of index numbers on premium ratings compiled by the insurance companies. I am not going to attack that, but that is not what the committee was instructed to do. As to cost of administration based upon premium ratio or premium index, if that is what you want, it is simple enough if you will give your cost of administration for various occasions.

The Chairman. Mr. Stewart, let it be known here, now, and forever, that I never proposed in that resolution at the Atlanta convention that you should make a tabulation of administration costs on any other basis than a comparison of state-fund State with state-fund State, and of insurance State with insurance State, and that indemnity benefits had nothing to do with the study that I wanted.

Mr. Stewart. We did not so understand the resolution.

Mr. Wenzel. I am in thorough sympathy with the Wilcox resolution in so far as it applies to a study of comparative benefits in the various States. I hope that a committee will be appointed and that such a study will be made; and when such a study has been made, now that the resolution presented by Senator Duxbury has passed, I am going to come back here and make a motion that to that committee be delegated the task of bringing other States up to North Dakota.

Mr. Kennard. I have been listening to this discussion, and I have tried to find out where we are and what we are talking about. I understand that Mr. Wilcox's resolution had to do with the question of administrative costs. I understand that what Mr. Duxbury is talking about is something deeper and more fundamental than administrative costs. It is in no way tied up with Mr. Wilcox's resolution or what he desired to accomplish.

Mr. Duxbury. Those two things are embodied in Mr. Wilcox's resolution, but I had assigned to me only the one.

Mr. Kennard. You have accomplished what you have undertaken, Senator, as I understand it, but that is only distantly related to the matter which Mr. Wilcox desires to have investigated by the statistical committee.

We quite commonly see, or I do, some statement as to what constitutes an ideal compensation law, and there has been some effort to draw a standard compensation law for uniform compensation laws. I think that Mr. Duxbury's fundamental idea is the ideal that we
started with. If we start with different ideals we are going to land at different ports.

There are two theories of compensation law existing in this convention and in the laws of the States; one—and we have that one in Massachusetts—is that a compensation law should follow its name; it should compensate a man for his loss due to an injury in an industry. What is the injury that he suffers in industry? It is the loss of what his day's or week's labor will bring him, namely, his earnings; and our compensation law in Massachusetts has followed that proposition very closely. We give to a man, as near as we can figure it, a certain fixed proportion of his wages, this being dependent upon the extent to which his ability to earn wages suffers, not only at the time of injury, but taking events as they come along and running over a period of four or five hundred weeks and sometimes the balance of his life. It seems so simple to me. We do not have damages; we do not attempt to say, at the time a man is injured, or a week after, or a month after, that this man has suffered a $700 loss because he has lost two fingers. We pay compensation weekly until he has gotten back to a position where his injury no longer reduces his ability to earn wages. That is the theory which I, personally, have always had of a compensation law. The very word itself means to compensate. What are you compensating him for? Are you compensating him for his loss of beauty? Are you compensating him for his suffering? Are you compensating him for all the elements which enter into the verdict of the jury when you have a court action for damages? Our theory in Massachusetts is that we are not compensating for that; therefore, I was in a quandary, because I felt that jurors who attempted to say beforehand that every man who suffered the loss of a leg had suffered the same damage from industry and in industry were entirely wrong.

There are those in this convention who believe that along the line of damages is the logical and proper way for this law to be interpreted; as I understand it, some of us do not think so. I had gotten the impression from the Senator's paper that what he had in mind was to discuss that fundamental proposition; then we can begin to talk about the comparative merits of the laws in the States. Perhaps Vermont has a compensation ideal which is entirely different from that of New York. If so, then we ought to find out, if we have any way of finding out or any way of getting information, for the benefit of those who are interested in the subject, what is to be said for the various ideals—as to which is the ideal on which a compensation law should be built. Of course, the moment it is a question of damages you are in a field where you have nothing but temperament and the frame of mind of the man who is assessing them; everybody knows that you can go before one jury and get $5,000, and you can go before another jury and get $20,000.

That, as I see it, is the trouble with damages. If you are going to attempt to assess the results of an injury upon a man arbitrarily and in a fixed amount, then it is perfectly apparent that you are not giving anything like justice unless you place your estimate at a point which is going to compensate to the fullest the man who needs the most compensation and who is deserving of the most compensation, and let the rest ride in on his back.
It is a pretty theoretical proposition, as I see it, and at the same time one to which we must give consideration. As I attend these conventions it seems to me that we fumble around because we do not talk with the same meaning. We start a debate, and nobody knows what the words mean. We talk about occupational disease—I do not know what occupational disease is, and I doubt whether Mr. Wilcox does. Last night after I had talked with him I came to the conclusion that probably we did pay for occupational diseases in theory, if not in law, and so it goes all along the line. We talk about the comparative benefits of compensation laws. Benefits of compensation laws can be compared only when you start out in theory alike.

If New York gives $10,000 or $15,000 to a man of family who has been killed, that is damages that are assessed, for we all know that the death of one man may be an economic benefit to a family and the death of another man a serious loss.

Of course, if once you get a common ideal then you have some common ground. I heard the commissioner of public works in Massachusetts in speaking of the building of roads say that there is no such thing as a best automobile road, that what is the best road depends upon the foundation upon which you build the road, and so I submit that there is no best compensation law, that it depends upon the foundation. When you get your foundation, which includes, of course, all the local elements that enter into it—cost of living, wages, and so forth, ad infinitum—and start with a common ideal, then you can begin making comparisons between the States as to which one has the best law. The probabilities are that each has the best law for its own State up to a certain point.

As I say, the whole proposition is one which as a theoretical discussion has something to be said for it and is interesting, but until we start on the same basis we are going to get stalled on the track; there will be no finish, there will be no winner, and there will be no competition so far as the comparative costs are concerned. That is a question which I presume is a moot question. Given the necessary factors I presume Mr. Stewart and the association ought to be able to find that out without a great deal of trouble. I anticipate the greatest difficulty is getting the factors. Being given the factors, I should think the proposition might well be taken care of.

But as to the discussion of Senator Duxbury's resolution, in so far as I understand Mr. Wilcox’s proposition he has thrown it out in the back yard, and whether we now want to bring it into the house and nurture it is the question Mr. Duxbury has raised, but so far as the resolution or the remarks of Senator Duxbury now stand, it seems to me it is a question for the convention to consider whether or not we want to discuss that academic, if you please—or not entirely academic—proposition. What is the whole theory that goes to make up compensation, and what is the doctrine upon which it is founded?

Mr. KINGSTON. Mr. Kennard took the words right out of my mouth in his last remark, that this proposition is bordering on the academic. Reference has been made to the comparative survey which I had the privilege of making at the convention in Columbus 12 years ago, as well as that at the convention in Baltimore six years ago. One of
the things that I regretted in connection with each of those surveys was that it did appear, from the results of my study, as if I was trying to put Ontario into the limelight in comparison with the other jurisdictions, and I appreciate very much, Mr. Chairman, your observation this morning which acquitted me of any such intention. It did so turn out, however, that Ontario was near the top of the list, and I regretted, when I found the situation to be what it was, that I had to go on with the study in that way.

The result of the discussion in Baltimore led me to the conclusion that there is little to be gained by making such a survey. Those who were at Baltimore will recall how, immediately the paper was presented from Maine to Delaware and I don’t know where not, the delegates had their backs to the wall immediately in defense of their own particular types of law, and they seemed to resent the particular place where the schedule, which I prepared from the information which they themselves gave to me, placed them with relation to other States. I do realize that it is very difficult to place Massachusetts, because of the particular type of the Massachusetts law; no matter what set of factors you take for the purpose of making a survey, it is not going to reflect truly the Massachusetts law. I realized that, and I made a footnote in my paper which gave some indication of that. Massachusetts, however, is practically the only exception. No matter what set of factors you may choose to adopt as the basis for this survey, you will find exactly the same condition Mr. Wilcox finds in this paper to which he refers and exactly the same condition I outlined in my review at Columbus, varying, of course, in detail as appeared in the survey which I made at Baltimore—you will find one State at the top and another State in a hopeless condition at the bottom.

There is no doubt that there is a wide disparity between the top and the bottom in this survey, and it is one of the regrettable things that you find that condition. If we could take such a survey and tell it from the housetops or in our legislative halls, because that is really the place where it ought to be told and if we could get it home to the gray matter of our legislators and instill into the minds of such legislators that they ought to do something, particularly in those States that we feel are not paying any compensation, we might serve some useful purpose, but that comes back again to the question of propaganda. Is it our particular business or concern here, as an association, or is it my particular concern in Ontario whether Delaware pays so much less than we do, or whether Wyoming or North Dakota pays more or less than New York does? It is all right for North Dakota to have a pride in her own position or Minnesota to have a pride in her position, but is it not after all a legislative problem, and are we seriously concerned with bringing Connecticut or Delaware or Maine up to the level of New York, or Minnesota, or North Dakota, or Illinois, or Michigan, or Ohio, or any of them? I am afraid it will come down to that situation, and if we produce a survey next year along the lines suggested, the moment the survey is made half a dozen delegates will have their backs to the wall immediately defending the position in which they happen to be placed in the survey. I am afraid not much more good will be accomplished than was accomplished as the result of the survey at Baltimore.
I recall the very happy remark made by Harry A. Mackey, of Philadelphia, who was then a delegate at the convention, when delegates from all over the room were throwing stones at me for comparisons which I made; he got up and said that I ought to be thanked for bringing the survey before the meeting. He said, in effect, "I did not come here to defend the Pennsylvania law, and I am not here to defend it; but a survey of this sort serves to bring home to some of us the defects in our own law, and that is the way we ought to look at it." At the same time I doubt whether many of the members looked at it in that way, and I question very much whether such a survey is of more than academic interest, and I do not know that it helps us very much in the solution of our administrative problems.

**Mr. Wenzel.** I am very sorry indeed to be placed in the position of laughing at the convention—in view of the many happy associations here I would much rather laugh with the convention—but you passed a motion just a little while ago and I opposed it upon the very ground that I thought it was no business of this association to meddle with the affairs of States except to the extent of supplying information. Now you have before you the proposition of ascertaining just what the relation of the States is, and you back water. Of course you will back water; you are bound to. Why did you pass the resolution a little while ago? Somebody before long will move a reconsideration of that motion.

**Mr. Stewart.** I think that Mr. Hatch, the chairman of that committee, and the other members of the committee have been very much enlightened to-day as to what can be done in regard to the instruction which we have had for the last five or six years to obtain comparisons of administrative costs. It seems to me you have to do one of two things—either tell us to get administrative costs and stop there, or else relieve us of the whole proposition. This thing has been hanging on, the committee being absolutely afraid to touch it because of the complications that have arisen here to-day.

Now this talk here to-day—what can a statistician do with that? Statistics have certain limitations. We can go ahead and tell you that it costs 22 cents a case in Tennessee and $12 a case, we will say for instance, in New York. That is as far as we can go on administrative costs, but you have tacked it on to us to know all that that 22 cents means in Tennessee and what that $12 means in New York. Most of what it means, it is absolutely impossible for a statistical committee to handle in any sort of way. So again I move that these instructions for the committee on statistics and costs to go ahead with the report on statistics of administrative costs be withdrawn and the committee discharged from that obligation; I do not mean that the committee be discharged—it is a permanent committee—but that instructions be withdrawn, as mentioned.

[Mr. Kingston seconded the motion.]

**Mr. Hatch.** Perhaps it will help to make clear just what the difficulty of the committee in carrying out the instructions is, if I point out one or two things. Any study of benefits or administrative costs is of interest only for the purpose of comparing what is true in one State with what is true in another State. We will all agree to that.

Now, then, we are going to compare, we will say, the administrative cost in Tennessee with the administrative cost in New York. We
will suppose that the data are available by which we can say that for all cases closed in Tennessee the cost was so much, say 22 cents, and that in the State of New York it was so much, say $10.

From the scientific point of view I want to say that that does not mean a single thing by itself. We are comparing here two samples of something, but the two samples are not the same kind of thing at all. What do they do in their administration in Tennessee? How long does it take them to settle a case? How promptly does the workman get his money? How often after the court makes a decision does the case go to appeal? How long is it before the appeal is settled? The whole question of how you conduct your administration, and how efficient it is, has to be gone into at length as regards Tennessee and as regards New York, so that, if these figures are going to be worth anything to you, we can make the statement that where a State was this and this and this in its administrative procedure, and gets this and this and this result by that procedure, in the States where those factors are the same the figures are this and this.

I do not believe I need to do anything more than to state what the statistical problem is to convince you that, from the technical point of view, you are asking of the statistical committee, with the resources it has and the time its members can give to this thing, an impossible task. That is all I want to make clear on this administrative cost proposition.

As for Commissioner Wilcox’s proposition about comparison of benefits, I am strongly of the opinion that this association ought to make such a study if it can do it, but you have the same difficulty there, technically, that you have with the other proposition. I am in favor of this association doing it. I will say that theoretically I am in favor of gathering this information for the simple reason that other people are doing it.

That table of index numbers that you heard referred to this morning is being quoted all over the country, and it is being said that this State is doing three times as much as that State, or four times as much as that other State. Now who is saying that? The two parties most vitally interested. On the one hand employers are saying: “In our State we are doing so much more than this other State that we can not afford to do more until that other State gets in line.” The injured workmen are saying in the other State: “In this State we get only so much, whereas injured workmen in that State get four times as much, and we can not understand, on any theory of justice, no matter what the theory of compensation is, why there should be that difference in the two jurisdictions.” So that the parties which have a lively interest in this thing are talking about it and considering and studying it. Now the issue on that statement comes back to just this: Is this organization going to be an active influence by furnishing authoritative information, coming from those who probably know more about it than anybody else, or are we unable to do that? That is the theoretical side.

Practically, I do not see how, in the near future, it will be possible to make such a study for the whole field of benefits and get anywhere. It might perhaps be possible to make a beginning and to study comparative death benefits, perhaps comparative death and total disability benefits—and when you have covered those you have covered a large
percentage of the total benefits in the State—but if it is gone into at all it will have to be gone into in a modest piecemeal way, and then, I can assure you, with all the duties that the members of the committee on statistics in this association have in their individual jurisdictions, it will take a long time to get the job done.

So that though I feel that this is a highly desirable thing, at least so far as administration costs are concerned, I would support Commissioner Stewart's motion.

The CHAIRMAN. Are you ready for the motion?

Mr. HEABERLIN. I want to say it is rather a coincidence that I have viewed this matter as an individual. I recently engaged a reputable actuarial firm and requested it to make a survey of the comparative value of the compensation law in our own State for our own use in West Virginia, with reference to the coming session of our legislature, so as to be able intelligently to inform it what our situation was with reference to our neighboring States.

[The question was called for and the motion was carried unanimously.]

The CHAIRMAN. The committee is relieved of any duty in that regard. Now, are you ready for the question on whether we can in the future impose upon the executive committee the obligation of selecting somebody to make this study of comparative costs on specified cases?

Mr. HATCH. I have an idea that I am going to broach. We have already, as I said a while ago, some figures that are being widely used and widely quoted, and so far as I know they are very reliably compiled figures for what they pretend to be. Now, once again, you have to define what your figures are in statistics. These figures are prepared by the National Council on Workmen's Compensation Insurance. How would it be to invite the actuary of that organization to present at the next meeting of the association a paper explaining what those figures are, how they are compiled, and what they do and do not mean. Then this association or any of our members, when those figures are quoted, will be in a position to discuss them with exact knowledge of what they do and do not mean, and see that whenever they are used they are properly used. That is merely a suggestion, as perhaps getting us a little along this road of a study of comparative figures.

The CHAIRMAN. Do you offer that as a substitute for the proposal I made at the Atlanta convention?

Mr. HATCH. I move that as a substitute.

[The motion was seconded by Mr. Williams.]

Mr. KINGSTON. If that can be worked out it is an excellent idea; if it were possible to put that survey in the hands of delegates a month or six weeks prior to the convention, so that we could give it a little study, we would be able to discuss it when we come to the convention.

Mr. HATCH. I have no doubt that that paper could be secured in advance and distributed to the members.

The CHAIRMAN. Be it remembered, men, that these very figures are the basis for the rates that your industries are paying in your own States for your compensation coverage.
Mr. Kennard. As you have already referred to the executive committee the question of the legislative position of this board as represented through delegates, this question having tied up with it, as brought out by Senator Duxbury's discussion, the question of whether or not it would be feasible to invite this actuarial study, and whether we would get anywhere in so doing and what the modus operandi should be, this is something that this meeting can not discuss. I move the matter be referred to the executive committee, which having heard this discussion and knowing what the situation is, may be trusted to act in a constructive way.

[Mr. Stewart seconded the motion.]

Mr. Hatch. I think, perhaps, that is a wise proposition and I am willing to accept that as an amendment to my motion.

The Chairman. I am not very thin skinned about this thing; I am not very thin skinned about what my State is doing. I would like to have a study made of death benefits, as I have the impression that Wisconsin is not paying what it ought to pay for deaths. What I have been in doubt about is whether or not many of the States are impressed with what their individual State is doing—whether it is actually doing what it ought to do. I think it is time we had to stand up and take a position one way or the other.

Are you in favor of the suggestion, Mr. Kennard, that the matter be referred to the executive committee with power to act?

Mr. Kennard. I am.

[The motion was put to a vote and carried without dissent.]

The Chairman. The next number on the program is Mr. Stewart's paper "The small plant and workmen's compensation coverage."

Mr. Stewart. The reason I have prepared this paper, I will say to you frankly, is the protests that we have received in the Bureau of Labor Statistics in the Department of Labor from workmen against the administration of the law or the nature of the law in the various States—that is, this fellow is included, this factory is excluded; I got hurt and I find that I am not insured; what does the compensation law mean—and that sort of thing. Now those letters and protests are not few in number, they are large in number. In other words, in the minds of a very significant percentage of the working people the whole compensation scheme and theory are skidding and skidding very rapidly.

The Small Plant and Workmen's Compensation Coverage

By Ethelbert Stewart, United States Commissioner of Labor Statistics

There is very little, if any, doubt that the work of accident prevention has been introduced and accelerated in this country by reason of the workmen's compensation laws. Where workmen's compensation applies and can be made to apply you find a live human interest in accident prevention. In many instances it has become really human; but, to stop kidding ourselves, the interest generally has only the image of a human on one side and the image of an eagle on the other.
We are beginning to wake up to the fact that the small plant is taking little or no interest in the question of accident prevention. When workmen's compensation laws were enacted the people had a feeling that those injured in industrial employment, together with their families, were going to be reasonably well taken care of, and they sat back with that smug assurance which characterizes the American mind (and I suppose all minds) when it has succeeded in having a law passed.

The fact of the business is, however, that even by the terms of the law the number of workmen in the United States who are protected by compensation is so small compared with the whole that, so far as the laws and the records show, only a relatively small proportion of the workers in the country are insured.

Granted that the question of compulsory and voluntary election as it is written into the laws of most States confuses the problem beyond all hope of understanding by the layman, nevertheless certain facts stand out.

In no law in the United States is there compulsory insurance for all establishments or employments under any and all circumstances. The nearest we come to it is in the California law and the new law covering employees in the District of Columbia, which will be taken up later on.

We must remember that by the latest census records over 40 per cent of the manufacturing establishments of the United States employ on average of 2.7 workers per establishment. So far as any information we have is concerned these establishments are not covered in the following States: Alabama, Alaska, Arizona, Colorado, Connecticut, Delaware, Georgia, Kansas, Kentucky, Maine, New Hampshire, New Mexico, Ohio, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin. The theory seemed to be that the man who worked in a small plant could afford to be killed or maimed and his family would be delighted, and society would have money enough on hand to buy a poultice plaster for the workers in these small plants.

There is a feature in some of the laws which permits voluntary or elective coverage. There is not a State in the Union from which I can get statistical returns that knows how many and what per cent of establishments, according to size, have voluntarily elected to come under the workmen's compensation law. They can tell me how many have come in. They can not or do not or will not tell me how many have not come in. The workmen in those plants that have not come in are not insured. This leaves an unknown number of small plants with no inducement to clean up, to have safety devices, or to protect their workers in any way.

There is another clause in many laws which requires employers in extrahazardous occupations to come in, and this includes all employees engaged in the hazardous occupations. Here we do not know what proportion of the employees are covered and what proportion are not. It is fair to assume that once in, the election covers all.

What constitutes extrahazardous employment is defined differently in the States by the statutes, and can not as a matter of fact be defined at all. The girl in a lawyer's office, entirely excluded from the law, who climbs up a stepladder to get a law book and falls and breaks her leg has a broken leg just the same as the fellow who gets
one of his legs broken in climbing up and down a ladder in an iron-ore mine. She has no protection. She is working in an industry entirely out of the range of most of the State laws.

But why quibble over the States that cover 1, 2, or 3? There are plenty of industries such as mercantile, clerical, etc., which persons get hurt who are not covered at all. The point I wish to raise is that the atmosphere of compensation laws covers the large plants and not the small ones, and that atmosphere permeates all the so-called compulsory and elective laws. We have not, we are not to-day putting the pressure of compensation laws on the small plants to make them clean up and institute safety devices.

As I understand the laws, in certain States establishments having less than a certain number of employees can not come under the compensation law even by election or voluntary choice. These States with the specific number of employees are—Alaska, 4; Arizona, 2; Delaware, 4; New Hampshire (as to factories), 4; Texas, 2.

It seems to me, after my brief and quiet occupancy of the secretaryship of this organization, that the extrahazardous institution ought to be compelled to come in under any circumstances and without regard to the number of employees. Extrahazardous employees numbering four in New Hampshire or Delaware need protection more than those in nonhazardous occupations. It comes down to this—that in certain States certain people were afraid that the law would cost too much.

I will pause a second to refer to the omission in practically all laws of casual workers. By and large, there is no more hazardous occupation and no class of people who have less to depend upon or fewer friends to take care of them than the so-called casual workers.

Without going into detail I will say right here that the National Safety Council has pointed out that the home accidents show a higher rate than do accidents in practically any other industry. Coverage of domestic employment is not compulsory in any State. Farm accidents, in the States where we have any idea about them, are more frequent than accidents in many of those industries covered by the laws.

We are dodging the cooperative movement, the partnership movement, and the subcontractor and the sub-subcontractor movement, even where it is not the result of an insurance company plan.

My purpose here is simply in a general and sketchy way to show that, generally speaking, the compensation laws use their pressure on the large plant to provide safety methods, and also, speaking generally, do not use the same pressure or any pressure to impel the small manufacturer or employer to install safety methods.

It was made very clear at the Atlanta convention that this fact is being used to throw more and more workmen out of the scope of compensation protection. It used to be the theory that workmen's compensation laws were intended for the workingmen, and I can remember that when that statement was made at the Baltimore convention by Carl Hookstadt it was backed up and cheered by the membership generally. At the Atlanta convention it was positively denied that the workmen's compensation laws were intended for the workingmen and nobody challenged the statement. This associa-
tion has on at least two occasions positively refused to go into any scheme which would extend the education of the workmen, even as to the existence of these laws or as to their rights under them.

Trend of Compensation Coverage in Various States

Some time ago I asked the various States to answer a number of questions along the line of this increasing number of uninsured employees. The practice of letting subcontracts for particular parts of a job, where the number of men employed by the subcontractor or the sub-subcontractor would be less than that covered by the law, is becoming more and more common.

Over and above that of the large total number of workmen excluded from compensation by the minimum coverage of the law, there are two or three other points to bring up.

In the first place the National Safety Council has developed the fact that a very large percentage of accidents is what it terms home accidents. These are entirely uncovered except by election in California and one or two other States. The few instances where home accidents are compensated may be considered negligible.

Then we come to the small plants, which though employing enough people to be covered by the law, are unable to secure insurance. The report from Alabama says: "The small industries comprising this group consist of sawmills, small coal operators, laundries, stores, etc. The larger insurance companies exclude extrahazardous occupations of all sorts and small businesses." Arizona reports refusal by insurance companies to carry mining and farming and mercantile establishments. However, the State fund of Arizona accepts and covers every risk for which application is made. The same may be said of California. Colorado reports insurance companies refusing to accept coal mine risks, which are, however, for the time being taken care of by an Employers' Mutual Insurance Co. The other small plants which are refused insurance are taken care of by the State fund. Delaware reports but one case of refusal—that of work on the extension of a sewer under the surface railroad tracks. The work was to be done by a recently patented boring machine and the machine could best be operated by five men, the minimum number of employees under the State law. The safety engineering department of the railroad examined the plans and decided there was no risk to the railroad and issued a permit to have the work go on. The contractor, however, could not get compensation insurance.

In Georgia there is only one concern which will write insurance on portable sawmills, and window cleaners are on the prohibited list in that State as in many others.

In Illinois the following industries are unable to secure workmen's compensation insurance: Window washers, tuck pointers, iron dealers (commonly known as junk dealers), and house or building wreckers. All insurance companies except two are reported to have withdrawn from insuring coal mines, and I understand that since this information was furnished, even these two companies have withdrawn from the coal fields.

In Iowa coal mines can not secure insurance, I am told by Commissioner Funk, who says, "I find that the smaller coal operators are
unable to secure insurance because insurers decline to accept their risks on any terms.”

In Kansas all the coal mines, except those owned by railroads, which are self-insurers, find it impossible to secure insurance. There are other classes of small operators, who are unable to secure insurance, but they are banding together at present and taking out policies under a life and accident insurance company which is doing business in the State without the definite approval of the superintendent of insurance. There is, however, a significant case in Kansas, and that is Osage County, in which there are 24 coal mines. They have severally and jointly made application as self-insurers, the 24 operators collectively binding themselves to pay any loss under the compensation act to an employee of any of the 24 mines. Each company pays $10 as a deposit and then 5 cents on each ton of coal produced during each month. On the basis of last year’s production in this field and the number of accidents reported, that 5 cents will more than pay the compensation provided under the act.

Minnesota reports that some companies have certain prohibited risks and that it is almost impossible for operations of logging and lumbering, small portable saw and lath mills, and also quarries to obtain insurance in either stock or mutual insurance companies.

Missouri reports that all classes of insurance carriers have adopted the principle of selective risk and are refusing to insure coal mines, window washers, scrap-metal yards, and other extra-hazardous and undesirable risks. Missouri has no State fund, and therefore that source of pressure upon these concerns to become less hazardous is lacking.

Oklahoma reports that the entire coal mining industry in the State is without insurance of any kind.

Rhode Island reports that the jewelry refining industry is unable to get insurance, and there is no State fund with which to protect it.

Tennessee reports that coal mines, sawmills in the outlying districts, and some sawmills in the smaller towns are being refused insurance.

Texas reports a rather peculiar and interesting situation. The insurance companies will not insure cotton-oil mills, and power and light plants, and some companies do not insure oil drilling and producing operations in certain sections of the State, especially where there is at present extra poisonous gas. However, it appears that the law creates an association under the employers’ liability law which is compelled to insure them when they make application for such insurance.

Vermont reports lumbering and logging, including sawmills, and to a certain extent woodworking industries, as having great difficulty in securing compensation coverage. This is also true to a lesser extent of the slate industry. The smaller companies in lumbering and logging operations are reported as being in a particularly bad way.

The situation in Virginia has been pretty well covered by others and need not be taken up here.

Pennsylvania finds trouble in a number of industries, but particularly in that of coal mining.

And while we are on the subject of coal mining I want to say that in those coal mines in Pennsylvania which are under the State
workmen's insurance fund (and it is fair to assume that many of them are under it because of the trouble in securing insurance) the premium rate for the years 1923 to 1927 inclusive, was 3.2 cents per ton. It was increased to 3.5 cents per ton in 1927. The total loss incurred on account of accidents for the same period was 2.7 cents per ton. In Ohio the losses, including medical attendance, amounted to 5.5 cents per ton. Ohio pays a maximum of $18.75 a week and a death benefit of that amount for 416 weeks, while Pennsylvania pays $12 per week. (The figure was raised to $15 last year, but my figures do not include last year's experience.) Ohio's coal premium rate is $3 per $100 of the payroll. Her compensation cost, including medical attendance, which as stated above is 5.5 cents per ton, was in the year 1926, 20 per cent above the premium. That is to say, at a premium of $3 per $100 of payroll it cost Ohio an additional 60 cents per $100 of payroll. Ohio pays the highest compensation of any State in the Union for coal. Utah's premium is $3.90 and she insists that she is making money on it.

Now, there is either some mighty poor housekeeping in the coal mines of the States where the insurance companies require $7.90 for premium, and there ought to be some pretty strenuous efforts made to introduce safety work there, or there is some pretty bad thinking on the part of the insurance companies.

But to proceed, from Massachusetts I get from the commissioner of insurance the report that many companies refuse to insure under workmen's compensation building wrecking, window cleaning, roofers, junk dealers, fireworks manufacturing, and stonecutting and polishing.

I am advised that 45 employers upon their own initiative sought the assistance of the New Jersey bureau to help them get compensation insurance after they had been refused.

South Dakota reports that the sawmills and woodworking industry in the western part of the State is rapidly approaching the status of inability to secure insurance.

When I asked the various States what proportion of plants or of employees were unprotected I found that not a single State had any comprehensive figures on the subject.

Private insurance companies, whether stock or mutual, are not compelled to accept all insurance risks in any of the States except Utah and Arizona, and even there they have methods which amount to nullification of the law.

Whether or not this matter so far as the insurance companies are concerned is growing or decreasing is another subject upon which the States have no statistics. Most of them believe that outside of coal mining it is decreasing. Oklahoma says, "The number is constantly increasing or rather has increased somewhat during the past year." Tennessee says, "In our opinion the number of uninsured employers is growing." Vermont thinks the number is increasing slightly. Virginia says, "In our opinion the number of uninsured employers is growing."

In answer to the question as to what they believed was a proper solution of this problem a great majority stated that compulsory insurance regardless of coverage, and a State fund at least a competitive State fund, seem to be the only answer.
South Dakota makes a statement which raises the whole issue. It states that in its opinion legislative action should be taken along the lines of penalizing for failure to obtain insurance, and adds these significant words, "Employers are prone to let protection go and take chances with action at common law." Now, if this latter statement be true, with the present and growing attitude of the workmen toward the law, it is my conviction that it is up to this association to do certain things. One is to use its entire power, and the power of the other organization including factory inspectors and labor commissioners, to induce the small plants to pay some attention to the ordinary requirements of safety and cleanliness, to reduce their accident rates, and then to insist that there shall be a commensurate reduction in premium rates.

It might be wise to encourage such groupings as that of the coal miners of Osage County, Kans. New York has just made a move in regard to this problem which to my mind is entirely in the wrong direction. It has increased the rates for the small plants, apparently on the theory that it can scare them into better practices. My own judgment is that it will make more and more enemies of the whole workmen's compensation law scheme and that more and more employers will, as South Dakota says, fall back on the common law, particularly in those States in which the law makes that possible through election.

Changes Necessary in System

I want to say a few words as to my opinion of the basis of the whole trouble. We imported workmen's compensation law from Germany, where the theory was that everybody in an industry must be insured and a rate must be made that would pay the losses in that industry; in other words a jackpot by industries of the whole compensation question. In my opinion that is the proper theory. Coal should take care of coal whether one man is employed or a thousand men are employed in a mine. The industry as such should take care of the industry and pay a rate that will do it. The American idea, which is being pushed for all it is worth, is to insure each individual and give him a rating based upon his accident experience. That is an incentive to the large concern to install safety methods so that accidents are reduced to a minimum as rapidly as possible. There is no such incentive to the small manufacturer. He is not able to put in the safety devices that the large plant puts in, and the insurance company makes his rate so high that he can not afford to insure. And through this individual rating device we are increasing the number of workmen who are not insured, and enormously increasing the number of workmen who would vote against the whole scheme, because, as the railroad men contend, they are better off under the liability law.

Some of the bad features of workmen's compensation laws as at present constructed and administered, and insurance regulations as at present conducted, will have to be ironed out or we will see the workmen of the United States bring their vote to bear solidly to wipe out the present form of workmen's compensation insurance and to install something that has fewer bad spots in it.

California has just changed its law in regard to agriculture in a way to which I would like to call attention. Under the old law the
The farmer was not protected unless he elected to come under the law and so notified the commission. Now he is assumed to be protected unless he elects not to be protected and so notifies the commission. This may seem to be a very small difference, but watch what its effect in California will be.

The longshoremen's act was applied to the District of Columbia, and covers everything except domestic service, agriculture, and casual labor. Probably there is no class of labor that needs protection so much as casual labor.

Another point about which I would like to have you think is the refusal of insurance companies to take the extrahazardous risks. Of course with no general pooling of all labor in a compensation jackpot you can readily understand their reason for doing this. At the same time it is rather amusing to find a State fund—Nova Scotia—where when the fishermen risk became too expensive the private insurance companies came in and said the State fund was all right for nonhazardous concerns but the fishermen should be left to private carriers. Perhaps there is a barb on this hook, as the fishermen were strong enough in the legislature to compel a low premium rate, while private companies can put up a rate which will make the other fellow cut bait or fish with a vengeance.

DISCUSSION

The Chairman: I know you would like to give your experiences in your States on the problems you have had and just how you are meeting them, and I should like to hear them.

Mr. Wenzel: North Dakota has a small-plant problem to the nth degree. It has the problem, not from the standpoint of the competitive insurance States, but from the standpoint of the exclusive State-fund (so called) States. It has the problem, not of getting the small plants covered, but of determining what to do with them after they are covered. It has that problem to the nth degree, because more than 50 per cent of the total number of classifications covered in North Dakota have nothing but small plants, and that notwithstanding the fact that we have reduced the total number of classifications from 245 to 160 since my appointment as commissioner five years ago.

North Dakota also has the problem in other classifications, but in no case is it the problem of securing coverage. In every case it is the problem that is presented to insurance companies in competitive insurance States. For example, I have kept an accurate record of the situation in the coal-mining industry over a period of three years. That record shows that five of the largest coal companies pay approximately 70 per cent of the total premiums each year, but each year's loss record shows that they are responsible for only 19 per cent of the losses. It is quite clear that, if this were a competitive insurance State, the small mines would have considerable difficulty in obtaining coverage; in fact, it is quite likely that if the attempt were made (under a competitive system) to compel the private companies to cover those small mines it would be likely to result in driving them out of the business entirely.

There is no need of going into a further discussion of these matters. The point I wish to bring out is this: That the association is overlooking a large field of usefulness by not devoting at least one day of its annual session to round-table discussion by groups having
similar problems. The administrator of a competitive insurance law
does not and can not know much about the administrative problems
that confront the administrator of an exclusive State-fund law or
even of a competitive State-fund law.

Now, one can wave his arms, get red in the face, and shout with
the voice of Saint Peter that the employees in the small plants must
be covered, and that insurance companies must write the insurance,
but the administrator of a competitive insurance law (most of which
laws eliminate the really small plants by excluding all those which
have less than three or four or five employees), seemingly does not
get the viewpoint of the insurance company that must deal with these
small plants and pay the losses out of the premiums it collects. We
in North Dakota take the smallest of the small plants ("one or more
employees," says our law), and we have to pay the losses, fix the
rates, and collect the premiums. The man who says that we do not
have a problem in attempting to do justice to all the employers within
a particular classification, in the light of the illustration I have
presented, is not conversant with the facts, nor can he ever be,
because he will never meet the problem.

That is why I say, by way of constructive and not destructive
criticism, it is high time that the international association, in its
annual meetings, give opportunity for the consideration of mutual
problems at group round-table discussions. One day devoted to that
sort of thing is not too much to ask, and I now make bold to request
that one day of the 1929 session be devoted to such round-table
discussion by groups.

**ACTUAL RECORD ON THE SMALL-PLANT PROBLEM IN NORTH DAKOTA**

[Basis facts: Total classifications in North Dakota, 160; number of years involved in check-up, 7; number
of classifications involved, 78, or 48.75 per cent of total]

**Group 1**

<table>
<thead>
<tr>
<th>Manual</th>
<th>Description of manual</th>
<th>1926 rate</th>
<th>7-year earned premiums</th>
<th>Surplus</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2171</td>
<td>Cigar manufacturing</td>
<td>$0.09</td>
<td>$61.52</td>
<td>1,827.06</td>
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</tr>
<tr>
<td>3372</td>
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<td>Tar manufacturing</td>
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<td>31.32</td>
<td>30.20</td>
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<tr>
<td>5008</td>
<td>Lightning-rod erection</td>
<td>$11.00</td>
<td>1,043.03</td>
<td></td>
<td></td>
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<tr>
<td>5100</td>
<td>Erection ornamental iron and brass</td>
<td>$3.00</td>
<td>1.37</td>
<td>41.11</td>
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<tr>
<td>5140</td>
<td>Paper hanging</td>
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<td>52.16</td>
<td>45.37</td>
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<tr>
<td>6251</td>
<td>Tunneling</td>
<td>$10.00</td>
<td>28.19</td>
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</tr>
<tr>
<td>8103</td>
<td>Wool merchants</td>
<td>$0.90</td>
<td>54.71</td>
<td>47.37</td>
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<tr>
<td>8717</td>
<td>News agents</td>
<td>$0.50</td>
<td>31.57</td>
<td>22.21</td>
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<tr>
<td>9022</td>
<td>Domestics</td>
<td>$1.15</td>
<td>20.85</td>
<td>12.60</td>
<td></td>
</tr>
<tr>
<td>9015</td>
<td>Motion-picture product</td>
<td>$1.30</td>
<td>14.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>417.36</strong></td>
<td>316.22</td>
<td>1,043.73</td>
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**Group 2**

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<tr>
<th>Manual</th>
<th>Description of manual</th>
<th>1926 rate</th>
<th>7-year earned premiums</th>
<th>Surplus</th>
<th>Deficit</th>
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<tbody>
<tr>
<td>2013</td>
<td>Flax tow mills</td>
<td>$4.00</td>
<td>$464.93</td>
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<td>$2,239.12</td>
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<tr>
<td>2570</td>
<td>Mattress manufacturing</td>
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<td>361.73</td>
<td>$206.47</td>
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<tr>
<td>2574</td>
<td>Awning and tent manufacturing</td>
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<td>227.65</td>
<td>195.63</td>
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<tr>
<td>2693</td>
<td>Tanners</td>
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<td>273.01</td>
<td>190.40</td>
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<tr>
<td>2702</td>
<td>Logging and lumbering</td>
<td>$6.60</td>
<td>256.62</td>
<td>697.74</td>
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<tr>
<td>3124</td>
<td>Hand tool manufacturing</td>
<td>$1.50</td>
<td>170.75</td>
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<tr>
<td>3360</td>
<td>Acetylene welding</td>
<td>$4.00</td>
<td>153.75</td>
<td>644.00</td>
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</tr>
<tr>
<td>3360</td>
<td>Battery manufacturing</td>
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<td>37.24</td>
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<tr>
<td>3726</td>
<td>Steam-boiler installation</td>
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<td>354.06</td>
<td>1,071.26</td>
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<tr>
<td>3866</td>
<td>Carriages and wagon assembling</td>
<td>$1.15</td>
<td>164.39</td>
<td>52.75</td>
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<tr>
<td>4121</td>
<td>Glass merchants</td>
<td>$1.50</td>
<td>174.44</td>
<td>182.23</td>
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<tr>
<td>5005</td>
<td>Windmill erection</td>
<td>$7.00</td>
<td>112.37</td>
<td>45.03</td>
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</tr>
<tr>
<td>5402</td>
<td>Glaziers, away from shop</td>
<td>$2.20</td>
<td>343.23</td>
<td>1,250.06</td>
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1 No injuries in 7 years.
ACTUAL RECORD ON THE SMALL-PLANT PROBLEM IN NORTH DAKOTA—Continued

**Group 2—Continued**

<table>
<thead>
<tr>
<th>Manual</th>
<th>Description of manual</th>
<th>1926 rate</th>
<th>5-year earned premiums</th>
<th>Surplus</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0003</td>
<td>Pile driving.</td>
<td>$8.00</td>
<td>$464.10</td>
<td>$293.56</td>
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</tr>
<tr>
<td>0046</td>
<td>Landscape gardening</td>
<td>1.65</td>
<td>161.16</td>
<td>1,109.29</td>
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<tr>
<td>6102</td>
<td>Railroad construction and maintenance.</td>
<td>5.95</td>
<td>318.12</td>
<td>1,267.26</td>
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</tr>
<tr>
<td>6222</td>
<td>Oil production.</td>
<td>3.45</td>
<td>301.98</td>
<td>1,267.26</td>
<td></td>
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<tr>
<td>6223</td>
<td>Dredging.</td>
<td>3.65</td>
<td>321.76</td>
<td>1,275.04</td>
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</tr>
<tr>
<td>6233</td>
<td>Caisson work.</td>
<td>14.00</td>
<td>148.75</td>
<td>1,275.04</td>
<td></td>
</tr>
<tr>
<td>6280</td>
<td>Blasting.</td>
<td>17.50</td>
<td>403.48</td>
<td>1,197.94</td>
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<tr>
<td>6400</td>
<td>Fence construction.</td>
<td>1.65</td>
<td>127.56</td>
<td>1,197.94</td>
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</tr>
<tr>
<td>7590</td>
<td>Incineration.</td>
<td>4.00</td>
<td>454.00</td>
<td>1,303.55</td>
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</tr>
<tr>
<td>8200</td>
<td>Bag and paper stock dealers.</td>
<td>1.70</td>
<td>263.33</td>
<td>1,245.34</td>
<td></td>
</tr>
<tr>
<td>8212</td>
<td>Bottle dealers.</td>
<td>2.05</td>
<td>166.15</td>
<td>1,166.25</td>
<td></td>
</tr>
<tr>
<td>8216</td>
<td>Grain weighers, inspectors.</td>
<td>0.40</td>
<td>154.74</td>
<td>1,133.78</td>
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</tr>
<tr>
<td>8880</td>
<td>Public libraries.</td>
<td>0.17</td>
<td>290.10</td>
<td>91.02</td>
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</tr>
<tr>
<td>R078</td>
<td>Commissaries, cool cars.</td>
<td>2.70</td>
<td>166.40</td>
<td>1,016.07</td>
<td></td>
</tr>
<tr>
<td>9081</td>
<td>Skating rinks.</td>
<td>0.95</td>
<td>119.82</td>
<td>1,135.50</td>
<td></td>
</tr>
<tr>
<td>9180</td>
<td>Merry-go-rounds, etc.</td>
<td>6.00</td>
<td>317.20</td>
<td>1,267.05</td>
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</tbody>
</table>

Total: 7,276.90, 3,839.54, 5,190.73

**Group 3**

<table>
<thead>
<tr>
<th>Manual</th>
<th>Description of manual</th>
<th>1926 rate</th>
<th>5-year earned premiums</th>
<th>Surplus</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2150</td>
<td>Artificial ice manufacturing.</td>
<td>$5.00</td>
<td>$856.17</td>
<td>$408.00</td>
<td>948.71</td>
</tr>
<tr>
<td>2660</td>
<td>Cobblers.</td>
<td>3.30</td>
<td>626.38</td>
<td>1,783.75</td>
<td></td>
</tr>
<tr>
<td>2803</td>
<td>Carpentry, shop.</td>
<td>3.20</td>
<td>772.80</td>
<td>2,783.75</td>
<td></td>
</tr>
<tr>
<td>2998</td>
<td>Furniture manufacturing.</td>
<td>3.55</td>
<td>795.22</td>
<td>2,783.75</td>
<td></td>
</tr>
<tr>
<td>3093</td>
<td>Sheet-metal fabrication.</td>
<td>0.85</td>
<td>783.60</td>
<td>605.45</td>
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</tr>
<tr>
<td>3594</td>
<td>Agricultural implements manufacturing.</td>
<td>2.10</td>
<td>540.91</td>
<td>302.67</td>
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</tr>
<tr>
<td>4190</td>
<td>Optical goods manufacturing.</td>
<td>0.10</td>
<td>550.36</td>
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<tr>
<td>4191</td>
<td>Photographers.</td>
<td>0.18</td>
<td>536.90</td>
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<tr>
<td>4781</td>
<td>Iron-work erection, outside.</td>
<td>0.00</td>
<td>508.22</td>
<td>336.14</td>
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</tr>
<tr>
<td>5345</td>
<td>Plastering, including lathing.</td>
<td>3.00</td>
<td>503.46</td>
<td>5,770.96</td>
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<tr>
<td>5324</td>
<td>Laying gas mains.</td>
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<td>252.60</td>
<td>3,785.95</td>
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</tr>
<tr>
<td>8004</td>
<td>Poultry dealers.</td>
<td>1.40</td>
<td>725.44</td>
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</tr>
<tr>
<td>8180</td>
<td>Hide and leather dealers.</td>
<td>0.75</td>
<td>957.50</td>
<td>50.30</td>
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</tr>
<tr>
<td>9192</td>
<td>Amusement park employees.</td>
<td>1.80</td>
<td>870.55</td>
<td>652.53</td>
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</tr>
<tr>
<td>9220</td>
<td>Cemetery employees.</td>
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<td>601.75</td>
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<tr>
<td>9403</td>
<td>Garbage collectors.</td>
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<tr>
<td>9501</td>
<td>Painting, in shop.</td>
<td>0.45</td>
<td>610.84</td>
<td>449.05</td>
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</table>

Total: 1,216.79, 4,697.47, 10,963.72

**Group 4**

<table>
<thead>
<tr>
<th>Manual</th>
<th>Description of manual</th>
<th>1926 rate</th>
<th>5-year earned premiums</th>
<th>Surplus</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0003</td>
<td>Florists and nurserymen.</td>
<td>$1.40</td>
<td>$1,844.72</td>
<td>$3,514.19</td>
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</tr>
<tr>
<td>1463</td>
<td>Coal briquette manufacturing.</td>
<td>6.00</td>
<td>1,464.05</td>
<td>1,263.32</td>
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</tr>
<tr>
<td>1802</td>
<td>Marble and stone cutters.</td>
<td>1.50</td>
<td>1,620.33</td>
<td>$1,620.33</td>
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</tr>
<tr>
<td>2206</td>
<td>Clothing manufacturing.</td>
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<td>1,877.41</td>
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<tr>
<td>2583</td>
<td>Dyers and cleaners.</td>
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<td>1,935.66</td>
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<tr>
<td>4035</td>
<td>Concrete block manufacturing.</td>
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<td>1,966.14</td>
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<tr>
<td>4601</td>
<td>Drug and medicine manufacturing.</td>
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<td>5182</td>
<td>Plumbing and pipe fitting.</td>
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<tr>
<td>7006</td>
<td>Ferry-boat operation.</td>
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<td>1,694.71</td>
<td>434.82</td>
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<tr>
<td>7202</td>
<td>Livery and sales stables.</td>
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<td>7535</td>
<td>Installation and repair of electrical apparatus.</td>
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<td>8092</td>
<td>Junk dealers.</td>
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<td>Veterinary surgeons, including hospitals.</td>
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<td>8630</td>
<td>Undertaking.</td>
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Total: 21,260.51, 4,897.80, 5,156.45

**Group 5**

<table>
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<tr>
<th>Manual</th>
<th>Description of manual</th>
<th>1926 rate</th>
<th>5-year earned premiums</th>
<th>Surplus</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5584</td>
<td>Roofers</td>
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<td>$3,276.72</td>
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<tr>
<td>6200</td>
<td>Well drilling.</td>
<td>6.75</td>
<td>2,556.61</td>
<td>13,628.64</td>
<td></td>
</tr>
<tr>
<td>6320</td>
<td>Laying steam mains.</td>
<td>8.00</td>
<td>2,412.05</td>
<td>11,329.92</td>
<td></td>
</tr>
<tr>
<td>7584</td>
<td>Ice handling, in connection with railroad operation.</td>
<td>3.25</td>
<td>2,665.83</td>
<td>1,555.27</td>
<td></td>
</tr>
<tr>
<td>8080</td>
<td>Department stores</td>
<td>6.25</td>
<td>2,952.40</td>
<td>2,194.03</td>
<td></td>
</tr>
<tr>
<td>8264</td>
<td>Livestock dealers</td>
<td>2.75</td>
<td>2,015.69</td>
<td>865.70</td>
<td></td>
</tr>
<tr>
<td>9544</td>
<td>Advertising sign manufacturing.</td>
<td>5.00</td>
<td>2,700.13</td>
<td>350.47</td>
<td></td>
</tr>
</tbody>
</table>

Total: 17,567.43, 6,083.25, 14,717.03

1 No injuries in 7 years.
2 1 injury since last date covered by report which will cost over $30,000.
### DISCUSSION—GENERAL

#### AVERAGE PREMIUM PER CLASSIFICATION AND NET DEFICIT FOR THE SPECIFIC GROUPS

<table>
<thead>
<tr>
<th>Group</th>
<th>Average premium per classification in—</th>
<th>Net deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7 years</td>
<td>1 year</td>
</tr>
<tr>
<td>Group 1</td>
<td>$37.94</td>
<td>$827.51</td>
</tr>
<tr>
<td>Group 2</td>
<td>$250.93</td>
<td>$1,351.19</td>
</tr>
<tr>
<td>Group 3</td>
<td>$650.81</td>
<td>$6,206.25</td>
</tr>
<tr>
<td>Group 4</td>
<td>$1,544.33</td>
<td>$258.65</td>
</tr>
<tr>
<td>Group 5</td>
<td>$2,506.78</td>
<td>$8,633.78</td>
</tr>
</tbody>
</table>

#### SUMMARY

Of the foregoing classifications 9 have only slight hazards, 30 have extraordinarily high hazards, and 22 have had no injuries in 7 years.

<table>
<thead>
<tr>
<th>Group</th>
<th>Total premiums</th>
<th>Net deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (11 classifications)</td>
<td>$417.36</td>
<td>$827.51</td>
</tr>
<tr>
<td>Group 2 (29 classifications)</td>
<td>7,276.90</td>
<td>1,351.19</td>
</tr>
<tr>
<td>Group 3 (17 classifications)</td>
<td>11,216.79</td>
<td>6,206.25</td>
</tr>
<tr>
<td>Group 4 (14 classifications)</td>
<td>21,200.51</td>
<td>258.65</td>
</tr>
<tr>
<td>Group 5 (7 classifications)</td>
<td>17,561.43</td>
<td>8,633.78</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57,672.99</strong></td>
<td><strong>17,277.38</strong></td>
</tr>
</tbody>
</table>

Average premiums per classification in 7 years: **$739.39**
Average premium per classification in 1 year: **$105.62**

Is there or is there not a small-plant problem in North Dakota?

Mr. Stewart. I cannot let Mr. Wenzel's statement pass without calling attention to the fact that there is a complete misunderstanding. We are not both talking about the same thing. The subject of my paper had to do with the workers in the small plants who are not insured because the insurance company will not cover the employer, and I said that of course in the State-fund States the workers are not losers. I did not say that the State fund was not a loser. Mr. Wenzel shows that it costs the State-fund States more to carry the small plants than they get out of them in premiums. I have no thought of disagreeing with that statement. As a matter of fact, I think the State fund of New York shows that it is carrying a number of small plants that do not pay into the fund enough to cover the expense of carrying them. I have no doubt that Ohio would show the same thing. But the worker does not lose his compensation. From my point of view the essential thing is that the worker shall not lose his compensation. I am not half so anxious as to whether or not the State is making money.

Mr. Wilcox. The statement of Commissioner Wenzel, of North Dakota, confirms the very thought I had in mind when I urged that North Dakota, an exclusive State-fund State, had no problem other than such as one may claim with respect to any type of risk subject to compensation. Coal mines have problems. So do machine shops, laundries, and all the rest. But their problems are not comparable with the coverage problem as applied to small risks. The small-plant problem is the problem of obtaining insurance from any source and at a rate that is not prohibitive. In its most serious aspect, it is the problem of that State which must depend altogether
upon the course that private insurance companies select for themselves. The State that has a competitive State fund is somewhat relieved because such fund may be prevailed upon to adopt plans in cooperation with the compensation board or commission, which offers opportunity for coverage when it may not be obtained elsewhere. The exclusive State-fund State is altogether relieved from any begging, coaxing, or threatening plan of operation. It has the question of coverage entirely within its own hands, and it becomes alone a matter of adequate inspection, pay-roll auditing, and rate making.

Wisconsin has no State fund and perhaps reference to some of our experience will be of interest and value.

On November 5, 1926, we sent out a letter to all the insurance companies operating in this State in which we said:

Certain individual risks and also some risk classes are quite generally declined by compensation-insurance companies. The employers involved find it difficult to procure the compensation coverage required by law. Will you please write us your ideas for meeting this situation? In this relation, will you also favor us with lists covering: (1) Risk classes in which you have had applications for insurance during 1927 and declined to issue policies; and (2) risk classes, if any, for which compensation insurance is not offered by your company.

We received many replies and then used a follow-up letter on November 19, 1926, and a bureau meeting was called for December 14, 1926, to consider the question. Before the bureau met we tabulated the information which came to us in reply to these letters, particularly as regards their attitude on 28 well-recognized types of risks or classifications which were being discriminated against. Of the 28 classifications, 2 of the companies refused coverage to 20 of them. Three companies refused coverage to 19 of the classifications. Another company rejected 13 of them and still other companies a lesser number. Some of the companies reported that they had no prohibited list. The fact remains, however, that while they may not set up any specifically prohibited list, in practical operation of their affairs, they refuse insurance to a large number of risks and classifications that are rightly entitled to coverage.

In all of the studies which we had made up to that time and have since made, it was apparent that the risks which they deemed unsatisfactory had proven so, largely for the reason that they rarely or never audited the pay rolls and collected on the original minimum premium; and, secondly, that while risks generally were given inspection service in a way to reduce accident hazard, they never spend a dollar inspecting one of these so-called undesirable types.

We have urged from the first their obligation to audit pay rolls and give inspection service, and in that way bring these risks or classifications up to a standard which would end the present contention.

Under the compensation insurance board law of Wisconsin all companies licensed to do business in the State are required to belong to the bureau. So at this conference in December, 1926, I proposed that all the insurance companies join in an agreement to pool the writing of these prohibited classes and that the business be actually handled by the manager of the bureau for their account. The bureau then and now has its own inspectors and auditors available for use, and since there would be no acquisition cost and not much overhead, with
abundance of opportunity to do the inspecting and auditing which is now being neglected, we felt certain that the experience would be beneficial and at the same time we would be relieved from the difficulty of getting some company to insure these risks and keeping them insured.

The insurance companies were represented at the above-mentioned conference in full force, coming all the way from the East and the West. They were unable to conceal the fact that their objection to the pool plan was fear that it constituted the entering wedge for a State-fund system. I assured them that I had no such thought and that in my judgment one of the ways to avoid the necessity for a State fund was to do something constructive in the matter of coverage of these undesirable risks at a decent rate. While they refused the pool plan, they gave assurances at that time that they would develop some way of handling the business. From that time on to the present the question of what was to be done to reach the issue has been much in evidence. There has been some liberalizing of attitude on the part of certain companies, but on the whole the situation is still bad.

Finally, on May 8, 1928, the governing committee of the bureau adopted the following resolution:

Voted that it is the sense of this meeting that a plan be adopted whereby the so-called undesirable risks would be referred to the manager of the bureau for definite assignment to individual companies in the State in proportion to their premium writings, and that the manager circularize all the member companies to determine which companies are prepared to subscribe to such plan; further, that the rating committee be empowered to fix rules and special rates where necessary.

Then at the August, 1928, meeting of the bureau they adopted the following resolution:

Voted that the general manager be authorized to advise the industrial commission that the plan designed to furnish coverage to the so-called undesirable risks has progressed to the point where coverage will be extended, provided notice is furnished to the general manager of the bureau, and that such notice is accompanied with the proper deposit premium either in the form of a certified check, currency, or money order.

Not less than 15 companies have already notified the manager of the bureau that they will accept business assigned to them pursuant to the resolution.

Under date of September 18, 1928, Mr. Haydon, general manager of the Wisconsin bureau, gave notice to his bureau members as follows:

A meeting has been called to convene in the offices of the National Council, 151 Fifth Avenue, New York City, to commence at 10 o'clock a. m., Friday, October 5, for the purpose of finally deciding upon rules governing the proposed plan to extend coverage to so-called undesirable risks. It is taken for granted that all companies that have signified their intention to subscribe to this plan will be present with full power. In addition, it is urged that all other companies that have not so signified their intention will endeavor to be present so that they may have every opportunity to observe the rules as finally drawn, together with the manner in which they will be administered, with the view of possible further consideration of any negative action to which they may be committed. At the same meeting a discussion will be invited to obtain a first-hand view of the companies with respect to the proposed “policy record” which formed the subject matter of the circular letter of the Wisconsin Compensation Insurance Board under date of September 1.
While the foregoing displays commendable interest in the subject matter, there is no right to hope that the course which they are following is going to provide material relief. They still take no steps to remedy the fundamental reason why these risks have proven unprofitable to them. Their plan still leaves an individual company to struggle along with a small risk here and another one there and no prospect of supervising, without tremendous overhead, the safety of the risk and rarely, if ever, an intention to audit pay rolls or collect a dollar beyond the minimum premium.

It is significant that the experience of the insurance company writing the largest volume of business in this State, a company which has a highly developed safety inspection program and sufficient business in every community to justify pay-roll audits of every risk, at a moderate overhead, does not find the small risk especially burdensome.

We have 58 insurance companies licensed to transact compensation insurance business in this State. Recently, we tabulated the compensation claims for the year 1927, not only by counties where the accident occurred, but by the number of insurance companies involved in the claims for each county. This tabulation discloses the end to which competition for business has carried the insurance companies—business written by many of them in communities where the expense of administration is bound to eat up the earned premium, with little left for losses.

The small risk will cease to be a serious problem only when a plan of underwriting, pay-roll auditing, safety inspection, and claim adjustment is centralized and a volume of business thus brought together which will make it possible for all of these factors to be not only cared for, but cared for at a reasonable cost. In States depending upon insurance companies for the coverage of these risks and where there is a rating and inspection bureau, there is the choicest opportunity for the insurance companies to solve the problem and relieve the public and public administrative bodies from the danger and the worry that is now present. I do not know how the situation can be met in the State that has no rating and inspection bureau, unless insurance companies are willing to develop some sort of a pool and charge this pool organization in absolute good faith with the doing of whatever is necessary to meet the problem. In our present situation throughout the country the exclusive State-fund State is to be congratulated upon its freedom from problems that beset sister States who are dependent upon the voluntary action of private insurance companies.

Mr. Laughlin. As I stated when I was presiding yesterday, the personal contact between members of the different States has not been what I think it should be, and I would like to make the suggestion that the executive board for future meetings make some arrangement whereby that personal contact will be better. We meet here for the purpose of exchanging ideas—that is our educat on—and I would like to see a plan worked out in the future whereby some arrangements can be made that different States meet together at luncheon, say; for instance, the States that have the insurance fund could discuss their States; the next day another group could meet and discuss all the problems that affect their States. Our big problem to-day is medical
aid. I came here to find out how to solve the medical-aid problem, but I haven't got any information.

Mr. Stewart. I second that motion; and in doing so I would like to suggest that the program policy in an association of this kind might very well perhaps be wiped out; that is to say, just make a list of topics of problems which the States are up against and say, Here boys, go to it. I wonder if that would not solve the question.

Mr. Wenzel. May I make a suggestion along that line? I have been secretary-treasurer of the State bar association for 9 or 10 years. We had the same problem there that we are having here; time was taken up by reading of papers and we had no time for discussion. It took me five years to put over the program but we have succeeded, finally; we print, just as you do, the reports and addresses in advance. Why not send those out two weeks in advance of the meeting and then come here and discuss the problems that are presented by those papers? That is what we do in North Dakota in the State bar association, and everybody likes it.

The Chairman. It has been moved and seconded that the executive committee in arranging for the program and carrying out of the convention proceedings, formal and informal, take account of the need of States to confer with one another.

[The motion was carried.]

Mr. Kingston. We have been talking a good deal about surveys this morning and we got a lot of good from the discussion, but I think the thing we need a survey on is our association work—a survey of ourselves.

I have felt, and I know that a number of the members have felt, for a long time that we are not functioning as an association 100 per cent and there must be some way of improving that situation. I do not know what it is, but we are in danger of getting into a rut. I am afraid to some extent we have got into it, and we must get out of it. The suggestion of the secretary is a good one. This idea of coming here and having the program filled up by the reading of papers, so far as they go, is good, but it is discussion that is helpful rather than the reading of papers.

Now I have a feeling that we are not doing as much as we might in the interim between sessions. I am wondering if we can not make greater use of the facilities at our disposal. There is a monthly bulletin being published by Mr. Stewart at Washington, copies of which go out to a limited number, and I have often thought that we ought to make that bulletin a clearing house for information. I did think that we ought to have our own bulletin, an association bulletin, but perhaps that will involve us in more expense than I feel like committing the association to. This is the resolution which I am going to submit, and which I hope the members will accept. It is given with the idea of keeping our minds to some extent focused on our work during the 361 days that we are not at the convention:

Resolved, That the executive committee be requested to consider how interest might be maintained in the work of the association during the period between annual sessions by the greater use of the compensation columns of the monthly bulletin of the Bureau of Labor Statistics or by the inauguration of a special association bulletin which might be used as a sort of clearing house for informative papers and discussions of interest to our common work.
I feel that if a little wise guidance is put on something of that sort we can have a lot of interesting material put before us during the year, and perhaps it may be the basis for discussion when we come together in our annual conference.

[A motion to adopt the resolution was made and seconded.]

Mr. Stewart. I would suggest that you amend the resolution to include instructions to the compensation commissioners of the various States to answer the letters of the secretary during these 361 days.

[The motion to adopt the resolution was carried.]

The Chairman. Now I will turn the meeting over to the president.

BUSINESS MEETING

Chairman, Andrew F. McBride, M. D., President I. A. I. A. B. C.

The President. We are now ready for the report of the auditing committee.

REPORT OF AUDITING COMMITTEE

The auditing committee met and checked over carefully the treasurer's financial report for the year intervening between the Atlanta and Paterson meetings. Receipts during the period totaled $4,692.33; balance and disbursements $3,100.62; leaving a cash balance of $1,591.71. Vouchers for all disbursements, with the exception of a few miscellaneous postage items, were audited and checked with the report.

The investment securities of the association, consisting of $3,700 worth of United States and Canadian Government bonds and local mortgage certificates, purchased by the treasurer with the authorization of the executive committee, are safely deposited in a box at the National Savings & Trust Co., Washington, D. C., marked "For delivery to Mr. Stewart's successor in the office of treasurer of [this] association." Mr. Stewart has provided by will that in the event of his death while in office the financial assets of this association be turned over to his successor in the office of treasurer.

The accounts of the association are in excellent order, and your committee feels that much credit and thanks is due to the treasurer for the efficient conduct of the financial affairs of the association during the last year.

William J. Maguire, Chairman.
Fred M. Wilcox.
Rowena O. Harrison.
F. M. Williams.

Mr. Kingston. I was going to suggest that it might be wise to ask the executive committee to consider whether or not $1,000 more of that $1,500 might not be invested in another permanent investment fund.

Mr. Stewart. That will be done of course; we keep about $500 in the bank.

The President. We will listen to the report of the committee on resolutions.

REPORT OF THE COMMITTEE ON RESOLUTIONS

Resolved, That Bulletin of the United States Bureau of Labor Statistics No. 456 be, and the same is hereby, approved as the record of the proceedings of the fourteenth annual convention of the association held at Atlanta, Ga., September 27–29, 1927. [Adopted.]

Whereas this association has learned with great sorrow of the death of Mr. Charles H. Verrill, of the United States Employees' Compensation Commission, and at one time secretary of this association, and
Whereas Mr. Verrill was for many years one of the leading compensation officials in the United States, and was willing at all times to assist newer officials in giving them the benefit of his knowledge and experience, and was the much esteemed friend of many members of the association: Therefore, be it

Resolved, That we, the delegates to the fifteenth annual meeting of the International Association of Industrial Accident Boards and Commissions, do hereby record our deep regret that Charles H. Verrill has been taken from our midst; and as a further indication of our sorrow and of the high esteem in which we held him, be it

Resolved, That this resolution be spread upon the minutes of this convention, a copy sent to the United States Employees' Compensation Commission, and a copy sent to the family of our departed member. [Adopted.]

Whereas this association has learned with much regret of the death of Mr. Benjamin W. Kernan, who joined the association as an associate member just prior to the Atlanta convention; therefore be it

Resolved, That we, the delegates to the fifteenth annual meeting of the International Association of Industrial Accident Boards and Commissions, do hereby record our deep regret that Benjamin W. Kernan has been taken from our midst; and as a further indication of our sorrow, be it

Resolved, That this resolution be spread upon the minutes of this convention, and a copy sent to the family of our departed member. [Adopted.]

Resolved, That we express our appreciation for the many privileges and courtesies extended to and enjoyed by this association and the members thereof at the Fifteenth Annual Meeting of the International Association of Industrial Accident Boards and Commissions held at Paterson, N. J., September 11-14, 1928.

Resolved further, That the thanks of this association be extended to the Hon. A. Harry Moore, Governor of the State of New Jersey, to the Hon. Wilmer A. Cadmus, [acting] mayor of the city of Paterson, and to Hon. Andrew F. McBride, M. D., commissioner of labor of the State of New Jersey and president of this association, and his associates, the Hon. Charles H. Weeks and the Hon. John Ronch, deputy commissioners of labor of the State of New Jersey, and to the Hon. James R. Wilson, president of the Chamber of Commerce of the city of Paterson, and to the personnel of the labor department and to the many other citizens of said city, convention, and State who have had part in providing for our welfare, instruction and entertainment, and especially to the following members of the medical profession who contributed the unusually able and practical papers to the literature of this association: Jack Blumberg, M. D.; S. Cosgrove, M. D.; William M. Mavner, M. D.; Stanley R. Woodruff, M. D.; C. Rutherford O'Crowley, M. D.; Jonathan M. Wainwright, M. D.; John J. Moorhead, M. D.; Charles A. Elsberg, M. D.; and Abraham E. Jaffin, M. D. [Adopted.]

Resolved, That the thanks of this convention be extended to the Paterson Automobile Trade Association for their courtesy in furnishing automobiles for the motor tour to points of interest in northern New Jersey; and also to the press in Paterson for its kindly consideration and the publicity. [Adopted.]

Fred M. Wilcox,
F. W. Armstrong,
F. W. Duxbury,
Committee on Resolutions.

[The following resolutions were heretofore adopted:]

Resolved, That the executive committee be, and it hereby is authorized and empowered to take such action as such committee may determine with regard to advising or assisting members or committees of State law-making bodies in relation to pending enactment or amendments of compensation and safety laws, and to appoint committees or representatives of this association personally to appear before legislative committees when request for such action has been made, and to pay the necessary expenses of such committees or representatives.

Resolved, That the executive committee be requested to consider how interest might be maintained in the work of the association during the period between sessions by the greater use of the compensation columns of the monthly bulletin of the Bureau of Labor Statistics or by the inauguration of a special association bulletin which might be used as a sort of clearing house for informative papers and discussions of interest to our common work.

[The report of the committee on nominations was presented and adopted. The list of officers elected will be found on p. 235. Niagara
Falls was chosen as the place of the next meeting, to be held August 19-22, 1929.

James A. Hamilton, the newly elected president, thanked the association for the honor bestowed on the Empire State and asked for a large attendance at the next meeting and for the cooperation of the members of the association.]

Note.—Early in 1929 Mr. James A. Hamilton left the position of industrial commissioner of the Department of Labor of New York, and being no longer connected with any active member organization of the International Association of Industrial Accident Boards and Commissions under section 4 of Article VII of the constitution it became necessary for the executive committee to elect his successor as president. Commissioner Frances Perkins of New York was duly elected and is now president of the association.

The executive committee has also voted to change the place and date of holding the sixteenth annual convention to Buffalo, N. Y., October 8-11, 1929.

Doctor McBride. Before we adjourn I want again to express my sincere appreciation to the association for having made it possible to have the fifteenth annual convention in the State of New Jersey. I trust that every member of the association and every one of the friends who made the journey to Paterson and likewise all who contributed to the success of this convention have felt repaid. We are deeply grateful to them and we trust that the convention has been a success. If merit counts for anything, it has been; if numbers count for anything, it has been; if a broad general discussion of topics counts for anything, it has been. It may be that we are getting into a rut, and that there might be adopted some new method which would be conducive of greater good. That can, perhaps, be safely left to the executive committee to give serious thought to; but the thought occurred to me this morning that if we had problems peculiar to our jurisdictions we ought to get in touch with the president of the association by mail, and set forth, either to the members or the chairman of the executive committee, problems particularly confronting us in our respective jurisdictions which we would like to have considered at the next convention. Perhaps it might lead to a round-table discussion of the problems that confront us and do away with the rut we may be getting into.

In conclusion I want to assure the association of the deep gratitude that New Jersey owes you for having come to our State.

[The convention adjourned sine die.]
Appendixes

Appendix A.—Officers and Members of Committees for 1928–29

Vice president, Walter O. Stack, president Industrial Accident Board of Delaware.
Secretary-treasurer, Ethelbert Stewart, United States Commissioner of Labor Statistics.

EXECUTIVE COMMITTEE

Walter O. Stack, Delaware Industrial Accident Board.
Ethelbert Stewart, United States Commissioner of Labor Statistics.
Andrew F. McBride, M. D., New Jersey Department of Labor.
Parke P. Deans, Virginia Department of Labor and Industry.
W. H. Horner, Pennsylvania Department of Labor and Industry.
William W. Kennard, Massachusetts Department of Labor and Industries.
William M. Scanlan, Illinois Department of Labor.
Victor A. Sinclair, Ontario Workmen’s Compensation Board.

COMMITTEE ON STATISTICS AND COMPENSATION INSURANCE COST

Chairman, L. W. Hatch, New York Department of Labor.
Secretary, Ethelbert Stewart, United States Commissioner of Labor Statistics.
Charles E. Baldwin, United States Assistant Commissioner of Labor Statistics.
Charles A. Caine, Utah Industrial Commission.
E. I. Evans, Ohio Department of Industrial Relations.
N. Fletcher, Manitoba Workmen’s Compensation Board.
O. A. Fried, Wisconsin Industrial Commission.
C. E. Gleason, Massachusetts Department of Industrial Accidents.
Sharpe Jones, Georgia Industrial Commission.
Miss B. C. Joseph, Maryland State Industrial Accident Commission.
George A. Kingston, Ontario Workmen’s Compensation Board.
William J. Maguire, Pennsylvania Department of Labor and Industries.
Mrs. F. L. Roblin, Oklahoma Industrial Commission.
R. M. Van Dorn, Washington Department of Labor and Industries.
S. W. Wilcox, Illinois Department of Labor.

MEDICAL COMMITTEE

Chairman, Raphael Lewy, M. D., New York Department of Labor.
Vice chairman, Charles W. Roberts, M. D., associated with the Georgia Industrial Commission.
William J. Arlitz, M. D., associated with the New York Department of Labor.
Robert P. Bay, M. D., Maryland State Industrial Accident Commission.
Nelson M. Black, M. D., associated with the Wisconsin Industrial Commission.
H. H. Dorr, M. D., Ohio Department of Industrial Relations.
Harley J. Gunderson, M. D., Minnesota Industrial Commission.
Maurice Kuhn, M. D., associated with the California Industrial Accident Commission.
M. D. Morrison, M. D., Nova Scotia Workmen’s Compensation Board.
Ralph T. Richards, M. D., associated with the Utah Industrial Commission.
Charles J. Rowan, M. D., associated with the Iowa Workmen’s Compensation Service.
SAFETY COMMITTEE

Chairman, John Roach, New Jersey Department of Labor.
James L. Gernon, New York Department of Labor.
Thomas P. Kearns, Ohio Department of Industrial Relations.
R. McA. Keown, Wisconsin Industrial Commission.
R. B. Morley, associated with the Ontario Workmen's Compensation Board.

COMMITTEE ON INVESTIGATION OF RESULTS OF COMPENSATION AWARDS

Chairman, Ethelbert Stewart, United States Commissioner of Labor Statistics.
Secretary, W. H. Horner, Pennsylvania Department of Labor and Industries.
Miss R. O. Harrison, Maryland State Industrial Accident Commission.
Appendix B.—Constitution of the International Association of Industrial Accident Boards and Commissions

ARTICLE I

This organization shall be known as the International Association of Industrial Accident Boards and Commissions.

ARTICLE II.—Objects

Section 1. This association shall hold meetings once a year, or oftener, for the purpose of bringing together the officials charged with the duty of administering the workmen's compensation laws of the United States and Canada to consider, and, as far as possible, to agree on standardizing (a) ways of cutting down accidents; (b) medical, surgical, and hospital treatment for injured workers; (c) means for the reeducation of injured workmen and their restoration to industry; (d) methods of computing industrial accident and sickness insurance costs; (e) practices in administering compensation laws; (f) extensions and improvements in workmen's compensation legislation; and (g) reports and tabulations of industrial accidents and illnesses.

Section 2. The members of this association shall promptly inform the United States Bureau of Labor Statistics and the Department of Labor of Canada of any amendments to their compensation laws, changes in membership of their administrative bodies, and all matters having to do with industrial safety, industrial disabilities, and compensation, so that these changes and occurrences may be noted in the Monthly Labor Review of the United States Bureau of Labor Statistics and in the Canadian Labor Gazette.

ARTICLE III.—Membership

Section 1. Membership shall be of two grades—active and associate.

Sec. 2. Active membership.—Each State of the United States and each Province of Canada having a workmen's compensation law, the United States Employees' Compensation Commission, the United States Bureau of Labor Statistics, and the Department of Labor of Canada shall be entitled to active membership in this association. Only active members shall be entitled to vote through their duly accredited delegates in attendance on meetings. Any person who has occupied the office of president or secretary of the association shall be ex officio an honorary life member of the association with full privileges.

Sec. 3. Associate membership.—Any organization or individual actively interested in any phase of workmen's compensation or social insurance may be admitted to associate membership in this association by vote of the executive committee. Associate members shall be entitled to attend all meetings and participate in discussion, but shall have no vote either on resolutions or for the election of officers in the association.

ARTICLE IV.—Representation

Section 1. Each active member of this association shall have one vote.

Sec. 2. Each active member may send as many delegates to the annual meeting as it may think fit.

Sec. 3. Any person in attendance at conferences of this association shall be entitled to the privileges of the floor, subject to such rules as may be adopted by the association.

ARTICLE V.—Annual dues

Section 1. Each active member shall pay annual dues of $50, except the United States Employees' Compensation Commission, the United States Bureau of Labor Statistics, and the Department of Labor of Canada, which shall be.
exempt from the payment of annual dues: Provided, That the executive committee may, in its discretion, reduce the dues for active membership for those jurisdictions in which no appropriations are made available for such expenditures, making it necessary that the officials administering the law pay the annual dues out of their own pockets for the State.

Sec 2. Associate members shall pay $10 per annum.

Sec 3. Annual dues are payable any time after July 1, which date shall be the beginning of the fiscal year of the association. Dues must be paid before the annual meeting in order to entitle members to representation and the right to vote in the meeting.

**Article VI.—Meetings of the association**

**Section 1.** An annual meeting shall be held at a time to be designated by the association or by the executive committee. Special meetings may be called by the executive committee. Notices for special meetings must be sent out at least one month in advance of the date of said meetings.

Sec 2. At all meetings of the association the majority vote cast by the active members present and voting shall govern, except as provided in Article X.

**Article VII.—Officers**

Sec 1. Only officials having to do with the administration of a workmen's compensation law or bureau of labor may hold an office in this association, except as hereinafter provided.

Sec 2. The association shall have a president, vice president, and secretary-treasurer.

Sec 3. The president, vice president, and secretary-treasurer shall be elected at the annual meeting of the association and shall assume office at the last session of the annual meeting.

Sec 4. If for any reason an officer of this association shall cease to be connected with any agency entitled to active membership before the expiration of his term, he may continue in office notwithstanding until the next annual meeting; but if for any reason a vacancy occurs in the office of president, the executive committee shall appoint his successor.

**Article VIII.—Executive committee**

Sec 1. There shall be an executive committee of the association, which shall consist of the president, vice president, the retiring president, secretary-treasurer, and five other members elected by the association at the annual meeting.

Sec 2. The duties of the executive committee shall be to formulate programs for all annual and other meetings and to make all needed arrangements for such meetings; to pass upon applications for associate membership; to fill all offices which may become vacant; and in general to conduct the affairs of the association during the intervals between meetings. The executive committee may also reconsider the decision of the last annual conference as to the next place of meeting and may change the place of meeting if it is deemed expedient.

**Article IX.—Quorum**

Sec 1. The president or the vice president, the secretary-treasurer or his representative, and one other member of the executive committee shall constitute a quorum of that committee.

**Article X.—Amendments**

This constitution or any clause thereof may be repealed or amended at any regularly called meeting of the association. Notice of any such changes must be read in open meeting on the first day of the conference, and all changes of which notice shall have thus been given shall be referred to a special committee, which shall report thereon at the last business meeting of the conference. No change in the constitution shall be made except by a two-thirds vote of the members present and voting.
Appendix C.—List of Persons Who Attended the Fifteenth Annual Meeting of the International Association of Industrial Accident Boards and Commissions, Held at Paterson, N. J., September 11–14, 1928

Canada

**Nova Scotia**

F. W. Armstrong, vice chairman workmen’s compensation board, Halifax.

**Ontario**

George A. Kingston, commissioner workmen’s compensation board, Toronto.
R. B. Morley, general manager industrial accident prevention associations, Toronto.

**United States**

**Alabama**

R. M. Thigpen, workmen’s compensation division, Montgomery.

**Colorado**

W. F. Mowry, referee industrial commission, Denver.

**Connecticut**

Albert J. Bailey, member board of compensation commissioners, Norwich.
S. G. Bloomfield, New Haven.
Albert L. Gray, M. D., Hartford.
George S. Hubbard, Scovill Manufacturing Co., Waterbury.
F. M. Williams, chairman board of compensation commissioners, Waterbury.
Charles E. Williamson, member board of compensation commissioners, Bridgeport.

**Delaware**

H. D. Carl, Hercules Powder Co., Wilmington.
G. H. Gehrmann, M. D., medical director E. I. du Pont de Nemours & Co., Wilmington.
Donald R. Morton, service manager E. I. du Pont de Nemours & Co., Wilmington.
Walter O. Stack, president industrial accident board, Wilmington.
District of Columbia

J. J. Bloomfield, chemical engineer, United States Public Health Service.
Miss Agnes L. Peterson, assistant director United States Women's Bureau.

Georgia

Richard P. Lawson, deputy commissioner United States Employees’ Compensation Commission, Savannah.
Miss Elizabeth Ragland, assistant secretary industrial commission, Atlanta.
T. E. Whitaker, commissioner industrial commission, Atlanta.
Mrs. T. E. Whitaker.

Idaho

G. W. Suppiger, chairman industrial accident board, Boise.

Illinois

A. V. Becker, industrial commission, Chicago.
William M. Scanlan, chairman industrial commission, Chicago.
Sidney W. Wilcox, chief bureau of statistics, department of labor, Chicago.

Iowa

Ralph Young, deputy commissioner workmen's compensation service, Des Moines.

Maine

Charles O. Beals, commissioner department of labor and industry, Augusta.
Donald D. Garcelon, chairman industrial accident commission, Augusta.
Willis B. Hall, associate legal member industrial accident commission, Augusta.

Maryland

Thomas N. Bartlett, manager claim division, Maryland Casualty Co., Baltimore.
A. E. Brown, secretary State industrial accident commission, Baltimore.
Miss Rowena O. Harrison, director of claims State industrial accident commission, Baltimore.
A. D. Lasenby, M. D., chief surgeon Maryland Casualty Co., Baltimore.

Massachusetts

William W. Kennard, chairman department of industrial accidents, Boston.
John P. Meade, director of industrial safety department of labor and industries, Boston.

Minnesota

F. A. Duxbury, chairman industrial commission, St. Paul.
Henry McColl, member industrial commission, St. Paul.
Ora E. Reaves, claims manager M. A. Hanna Co., Duluth.

New Jersey

Francis A. Abbott, factory inspector department of labor, Trenton.
Michael J. Angel, factory inspector department of labor, Trenton.
Maurice J. Angland, factory inspector department of labor, Paterson.
LIST OF PERSONS IN ATTENDANCE

Hugh J. Arthur, special investigator department of labor, Trenton.
Frank W. Ash, M. D., St. Joseph's Hospital, Paterson.
Maurice S. Avidan, M. D., medical advisor department of labor, Trenton.
George O. Beavans, superintendent compensation Commercial Casualty Insurance Co., Newark.

C. C. Beggs, resident manager United States Casualty Co., Paterson.
G. L. Belcher, safety inspector Standard Oil Co. of New Jersey, Newark.
Harold C. Benjamin, M. D., Jersey City.
Carl H. Blatt, adjuster General Accident Insurance Co., Newark.
Jack Blumberg, M. D., General Hospital, Elizabeth.
Henry Booth, factory inspector department of labor, Trenton.
James O. Boyd, trial attorney Public Service Corporation, Newark.
Sidney Brooks, M. D., St. Joseph's Hospital, Paterson.
Vincent P. Butler, M. D., Jersey City.
Hon. Wilmer A. Cadmus, acting mayor of Paterson.
Bernard S. Coleman, executive secretary, Hudson County Tuberculosis League, Jersey City.
Harold S. Cooper, factory inspector department of labor, Trenton.
Charles E. Corbin, deputy commissioner of compensation department of labor, Jersey City.
Joseph M. Crippen, claims manager Indemnity of North America, Newark.
William J. Crowley, factory inspector department of labor, Trenton.
R. S. Dalenz, New Jersey State Chamber of Commerce, Newark.
C. R. DeBow, superintendent Du Pont, S. P. D., Penns Grove.
L. G. Dibbell, superintendent Du Pont Co., P. L. Works, Pompton Lakes.
Patrick L. Diver, senior engineer Travelers Insurance Co., Newark.
John Divine, factory inspector department of labor, Newton.
R. E. Doran, M. D., Jersey City Hospital, Jersey City.
John J. Fitzgerald, secretary chamber of commerce, Paterson.
Miss Agnes Fitzpatrick, chief clerk department of labor, Trenton.
Frederick W. Flagge, M. D., Rockaway.
W. G. Franks, Eberhard Faber Rubber Co., Newark.
Emil Gallman, industrial manager chamber of commerce, Paterson.
Leo J. Gaul, factory inspector department of labor, Paterson.
Harry J. Goos, deputy commissioner of compensation department of labor, Newark.

James A. T. Gribben, chief bureau of statistics and records, department of labor, Trenton.
Crowell W. Haslett, factory inspector department of labor, Trenton.
A. E. Kaufman, M. D., pathologist, Paterson.

E. W. Heilig, secretary welfare committee, Public Service Corporation, Major William A. Higgins, aide to governor, Trenton.

Newark.
Henry H. Hussmann, factory inspector department of labor, Union City.
Abraham E. Jaffin, M. D., City Hospital, Jersey City.
James C. Keeney, M. D., Newark.
Mae Cecil Kelley, R. N., rehabilitation commission, Patterson.
Raymond A. Kiefer, M. D., Patterson.

M. Kummel, M. D., Newark.
Mrs. N. W. Lameire, department of labor, Paterson.
Henry F. Lohse, factory inspector department of labor, Bloomfield.
Joseph F. Londrigan, M. D., medical director department of labor, Jersey City.
Andrew F. McBride, M. D., commissioner of labor, Paterson.
Andrew F. McBride, jr., Paterson.
Clifford McIntire, production manager E. I. du Pont de Nemours & Co., Newark.
William H. McKnight, Travelers Insurance Co., Newark.
J. P. Maloney, general field sales manager Pyrene Manufacturing Co., Newark.
C. C. Mann, M. D., plant physician Du Pont Viscoloid Co., Arlington.
James C. Matthews, placement clerk department of labor, Paterson.
William Wallace Mauer, M. D., Christ Hospital, Jersey City.
Hon. A. Harry Moore, Governor of New Jersey, Trenton.
Laura W. Moore, factory inspector department of labor, Trenton.
Joseph R. Morrow, M. D., Bergen County Hospital, Ridgewood.
Francis S. Myers, M. D., medical director Globe Indemnity Co., Newark.
Leonard F. Nichols, assistant manager United States Casualty Co., Paterson.
Mrs. Margaret O'Connell, factory inspector department of labor, Jersey City.
C. Rutherford O'Connell, M. D., Newark.
James Phelps, safety director Pittsburgh Plate Glass Co., Newark.
Frank W. Pinneo, M. D., Essex County Medical Society, Newark.
Fred Preusch, claim auditor United States Casualty Co., Paterson.
Fred P. Rearwin, factory inspector department of labor, Trenton.
Frederic R. Reed, attorney Public Service Corporation, Newark.
L. R. Riss, claims manager General Accident Insurance Co., Newark.
Charles F. Riley, process server department of labor, Paterson.
John Roach, deputy commissioner department of labor, Trenton.
David Roskel, attorney, Newark.
Fred M. Rosseland, manager, Newark Safety Council, Newark.
Charles B. Russell, M. D., Paterson.
Ernest S. Schmid, special agent Tide Water Oil Co., Bayonne.
Howard Schrader, photographer department of labor, Trenton.
Augustine M. Schultz, M. D., medical director rehabilitation commission, Paterson.
Joseph F. Scott, examining engineer department of labor, Trenton.
Mrs. Joseph F. Scott.
M. L. Sheppard, M. D., medical director Passaic County Tuberculosis Sanitarium, Valley View.
Aaron Simon, M. D., Passaic.
Max Singer, M. D., Newark.
Morton Sittelman, M. D., Elizabeth.
Mrs. Nellie Rush Slayback, factory inspector department of labor, Trenton.
George J. Speidel, factory inspector department of labor, Trenton.
William Spickers, M. D., Paterson Barnet Hospital, Paterson.
Seth B. Sprague, M. D., Jersey City.
John J. Stall, referee workmen's compensation bureau, Jersey City.
William C. Stuart, M. D., department of labor, Jersey City.
William E. Stubbs, deputy commissioner department of labor, Trenton.
M. C. Sucoff, M. D., Barnet Hospital, Paterson.
James H. Tallon, factory inspector department of labor, Trenton.
Dr. G. E. Teurs, Paterson General Hospital, Paterson.
F. H. Todd, M. D., General Hospital, Paterson.
William Van Assen, factory inspector department of labor, Trenton.
Edward Walker, examining engineer department of labor, Trenton.
Charles A. Ward, chief electrical inspector, Paterson.
Stanley Warzala, Calco Chemical Co., Bound Brook.
Charles H. Weeks, deputy commissioner department of labor, Trenton.
Mrs. Charles H. Weeks.
W. E. Wentworth, Western Electric Co., Kearny.
John Wyckoff, manager Alexander Hamilton Hotel, Paterson.

New York

W. C. Bastian, M. D., Port Hospital, New York.
Frank A. Cardello, examiner United States Employees' Compensation Commission, New York.
Ross I. Chamberlin, claim attorney Merchants Mutual Casualty Co., Buffalo.
Richard J. Cullen, member State industrial board, department of labor, New York.
Charles A. Elsberg, M.D., Columbia University, New York.
L. W. Hatch, member State industrial board, department of labor, New York.
Mrs. L. W. Hatch.
Victor E. Kennedy, assistant general claims manager Merchants Mutual Casualty Co., Buffalo.
Miss Nellie D. McKeon, assistant to district manager, engineering department, American Mutual Liability Insurance Co., New York.
Miss Marguerite Marsh, research secretary National Consumers League, New York.
John Moorhead, M.D., Post Graduate Medical College, New York.
Edward M. Nash, M.D., medical adviser State insurance fund, New York.
Nathaniel Newbauer, underwriter State insurance fund, New York.
E. B. Patton, director bureau of statistics, department of labor, New York.
Thomas A. Quinn, superintendent compensation claims, General Accident, Fire and Life Assurance Corporation, New York.
L. D. Reed, director of service Du Pont Rayon Co., Buffalo.
George E. Sanford, General Electric Co., Schenectady.
Elmer F. Sheets, assistant editor Chemical Markets, New York.
S. R. Woodruff, M.D., Post Graduate Medical College, New York.
Fred A. Zierlihn, supervisor of compensation claims United States Casualty Co., New York.

North Dakota

R. E. Wenzel, workmen's compensation bureau, Bismarck.

Ohio

Carl C. Beasor, department of industrial relations, Columbus.
Francis T. Casey, field deputy, industrial commission, Columbus.
E. I. Evans, department of industrial relations, Columbus.
Rose Mark, convention reporter, Cleveland.

Oklahoma

Mrs. A. E. Bond, secretary, State industrial commission, Oklahoma City.
I. K. Huber, chief adjuster Empire Companies, Bartlesville.
L. B. Kyle, chairman State industrial commission, Oklahoma City.
Oregon

Sam Laughlin, chairman State industrial accident commission, Salem.

Pennsylvania

W. H. Horner, department of labor and industry, Harrisburg.
William J. Maguire, department of labor and industry, Harrisburg.
Raymond Scott, supervisor of compensation General Accident, Fire and Life Assurance Corporation, Philadelphia.
Jonathan M. Wainwright, M. D., Moses Taylor Hospital, Scranton.

Utah

Henry N. Hayes, member industrial commission, Salt Lake City.

Virginia

Parke P. Deans, commissioner industrial commission, Richmond.

Washington


West Virginia

J. R. Hanley, actuary workmen's compensation department, Charleston.
C. L. Heaberlin, commissioner workmen's compensation department, Charleston.
R. H. Walker, M. D., chief medical examiner workmen's compensation department, Charleston.

Wisconsin

Fred M. Wilcox, chairman Industrial Commission, Madison.

Wyoming

Charles B. Morgan, workmen's compensation department, Cheyenne.
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LIST OF BULLETINS OF THE BUREAU OF LABOR STATISTICS

The following is a list of all bulletins of the Bureau of Labor Statistics published since July, 1912, except that in the case of bulletins giving the results of periodic surveys of the bureau only the latest bulletin on any one subject is here listed.

A complete list of the reports and bulletins issued prior to July, 1912, as well as the bulletins published since that date, will be furnished on application. Bulletins marked thus (*) are out of print.

Conciliation and Arbitration (including strikes and lockouts).

*No. 124. Conciliation and arbitration in the building trades of Greater New York. [1913.]
*No. 135. Report of the industrial council of the British Board of Trade on its inquiry into industrial agreements. [1913.]
No. 139. Michigan copper district strike. [1914.]
No. 144. Industrial court of the cloak, suit, and skirt industry of New York City. [1914.]
No. 145. Conciliation, arbitration, and sanitation in the dress and waist industry of New York City. [1914.]
*No. 191. Collective bargaining in the anthracite coal industry. [1916.]
*No. 198. Collective agreements in the men's clothing industry. [1916.]
No. 223. Operation of the industrial disputes investigation act of Canada. [1918.]
No. 255. Joint industrial councils in Great Britain. [1919.]
No. 287. National War Labor Board: History of its formation, activities, etc. [1921.]
No. 303. Use of Federal power in settlement of railway labor disputes. [1922.]
No. 341. Trade agreements in the silk-ribbon industry of New York City. [1923.]
No. 402. Collective bargaining by actors. [1925.]
No. 468. Trade agreements, 1927.
No. 481. Joint industrial control in the book and job printing industry. [1928.]

Cooperation.

No. 313. Consumers' cooperative societies in the United States in 1920.
No. 314. Cooperative credit societies in America and in foreign countries. [1922.]
No. 457. Cooperative movement in the United States in 1925 (other than agricultural).

Employment and Unemployment.

No. 172. Unemployment in New York City, N. Y. [1915.]
*No. 183. Regularity of employment in the women's ready-to-wear garment industries. [1915.]
*No. 195. Unemployment in the United States. [1916.]
No. 206. The British system of labor exchanges. [1916.]
No. 235. Employment system of the Lake Carriers' Association. [1918.]
*No. 241. Public employment offices in the United States. [1918.]
No. 310. Industrial unemployment: A statistical study of its extent and causes. [1922.]
No. 409. Unemployment in Columbus, Ohio, 1921 to 1925.

Foreign Labor Laws.

*No. 142. Administration of labor laws and factory inspection in certain European countries. [1914.]

Housing.

*No. 158. Government aid to home owning and housing of working people in foreign countries. [1914.]
No. 263. Housing by employers in the United States. [1920.]
Industrial Accidents and Hygiene.

*No. 104. Lead poisoning in potteries, tile works, and porcelain enameled sanitary ware factories. [1912.]

No. 120. Hygiene of the painters' trade. [1913.]

*No. 127. Dangers to workers from dusts and fumes, and methods of protection. [1913.]

*No. 141. Lead poisoning in the smelting and refining of lead. [1914.]

*No. 157. Industrial accident statistics. [1915.]

*No. 165. Lead poisoning in the manufacture of storage batteries. [1914.]

*No. 179. Industrial poisons used in the rubber industry. [1915.]

No. 188. Report of British departmental committee on the danger in the use of lead in the painting of buildings. [1916.]

*No. 201. Report of committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions. [1916.]

*No. 207. Causes of death by occupation. [1917.]

*No. 209. Hygiene of the printing trades. [1917.]

*No. 219. Industrial poisons used or produced in the manufacture of explosives. [1917.]

No. 221. Hours, fatigue, and health in British munition factories. [1917.]

No. 229. Standardization of industrial accident statistics. [1918.]

No. 230. Industrial poisoning in making coal-tar dyes and dye intermediates. [1919.]

No. 233. Anthrax as an occupational disease. [1920.]

No. 237. Industrial unrest in Great Britain. [1917.]

No. 249. Industrial health and efficiency. Final report of British Health of Munition Workers' Committee. [1919.]

*No. 251. Preventable death in the cotton-manufacturing industry. [1919.]

No. 256. Accidents and accident prevention in machine building. [1919.]

No. 267. Anthrax as an occupational disease. [1920.]

No. 276. Standardization of industrial accident statistics. [1920.]

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