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PROCEEDINGS.

FOURTEENTH ANNUAL CONVENTION OF THE INTERNATIONAL ASSOCIATION OF FACTORY INSPECTORS,
HELD AT THE REPRESENTATIVE HALL, STATE
CAPITOL BUILDING, INDIANAPOLIS,
INDIANA, OCTOBER 2-5, 1900.

The Fourteenth Annual Convention of the International Association of Factory Inspectors convened in the city of Indianapolis, Indiana, in Representative Hall, State Capitol Building, at 10 o'clock A. M., Tuesday, October 2, 1900. President James Campbell, of Pennsylvania, presiding, and owing to the absence of the Secretary, Chief J. L. Cox, of Michigan, on account of delayed train, Chief Deputy Holbrook, of Michigan, reported the first session as Secretary pro tem.

The convention opened with a large attendance of delegates and the following officers were present:—

NATIONAL OFFICERS PRESENT.

HON. JAMES CAMPBELL, Harrisburg, Pa., *President*
HON. J. W. BATH, Elyria, Ohio, *1st Vice-President*
HON. GEORGE L. McLEAN, Hartford, Conn., *2d Vice-President*
HON. J. L. COX, Battle Creek, Mich., *Secretary and Treasurer*
HON. A. J. HARRIS, Chicago, Ill., *Assistant Secretary*
Hon. Louis Guyon, of Montreal, Canada, 4th Vice-President, and
Mrs. Annie Greene, of Fort Plain, N. Y., 3d Vice-President, were unable to attend, but sent their regrets and well wishes.

COMMITTEE OF ESCORT.

The President appointed a committee consisting of Chief McAbee, of Indiana; Chief Knaub, of Ohio, and Chief Williams, of New York, to escort Governor Mount to the President's chair in the Convention Hall.

HIS EXCELLENCY, GOVERNOR MOUNT.

At fifteen minutes past ten o'clock the committee returned with the honored and distinguished Chief Executive of Indiana, who was introduced by the President. Quoting from the Indianapolis News report, the

and the hours long. It is invariably true that the welfare of the child for his entire life depends largely upon his childhood, and the breaking down of the physical constitution of the child, effects, besides his own life, that of future generations. The child in the factory, in the mine and in other places of this kind should be at school. The child on a farm, or who is learning a trade, should also be at school; but in the latter this is not as important as the former. Experience shows that the influence of the factory is much worse than that of the farm, or from labor that is performed under the supervision of parents and the surroundings of home.

Injurious as child labor is to the ultimate interests of society as a whole, the immediate interests subserved by it are so strong that it can only be prevented by the best laws and a strong and competent inspection service for the enforcement of these laws. During 1897 strong efforts were made to prevent the violation of the child labor laws. It soon became apparent that little in this line would be accomplished until additional inspectors were had. In order to obtain some light as to just what was needed in this respect, as well as regarding the number at work, it was decided early in 1898 to practically drop all other inspections and have the inspectors devote their entire time to child labor. The results were obtained from examining 3,360 children, who were employed in 215 establishments, and of whom 155 were illegally employed. From September, 1898, to March, 1899, 1,396 children sixteen years of age or under, employed in 75 distinct establishments, were covered, and of these 301 children were under fourteen years of age, and thus employed in violation of the law. The work was continued in a slightly different manner from this time on, and up to June 1, many more children were relieved from work. By this time the new laws for the regulation of child labor and authorizing additional factory inspectors had gone into force, and for the first time in the history of this Bureau it is now in a position to do effective and proper work in the way of enforcing the child labor laws.

J. J. WILLIAMS,

401 Iron Block, Milwaukee.

President Campbell next called for the reading of a technical paper by W. E. Walling, of Chicago, entitled "The Dangerous Trades." This paper was read in a very excellent tone of voice, the points being well developed and the subject matter well received by the convention:—

THE DANGEROUS TRADES.

BY W. E. WALLING.

Our American Legislatures seem almost to have ignored a branch of factory legislation considered elsewhere to be of the utmost importance. While most of the countries of Europe, especially England, have considered the special regulations of dangerous trades as a necessity of modern industry, in only one case have the American States enacted special laws on the subject. This is the law with reference to emery wheels, that has been adopted by seven of our States.

The expression, "dangerous trades," is used in a somewhat technical sense. It does not, of course, include all trades that are dangerous, but has been especially applied to those trades in which some form of poison or disease is incidental to the trade itself as at present carried on. It is not generally used with reference to those trades in which sudden injury and death are caused by dangerous machinery or unguarded perils, but rather refers to those slower acting causes which, while not so sensa-

tional in their horrors, are even more frightful in their results. On the other hand, the term is not applied to those dangers of poor sanitation and poor ventilation that are incidental to all trades.

In our present era of sharp international competition the smallest difference in the technique of an industry may give a nation a great commercial advantage, such as the United States enjoys in many cases to-day; but, with the spread of technical education, all the nations are turning out men able to bring each industry up to the highest level of efficiency, so that in the great majority of processes the same methods prevail in all countries. In England we have had, so far, our greatest competitor, and her methods are most similar to our own. In that country this question of the dangerous trades has for the last ten years claimed a very large share of public attention. It has been foremost in the Unions, has filled columns of the press day after day for years, has been the subject of two parliamentary acts and two exhaustive parliamentary reports. One of these appeared in 1898 and the other last year. They are so far the most authoritative treatments of the subjects, and as we have no comparable discussions in this country, I will draw on them at length.

I. THE DANGERS.

The following is a classified list of those trades which have been considered dangerous either in the acts of parliament, in the recent reports above mentioned, or in the annual reports of the factory inspector.

1. Trades in which lead is a poisonous element:—

The manufacture of earthen-ware and china.
File cutting.
The manufacture of white lead.
Lead smelting.
The use of lead in print or dye works.
The manufacture of red, orange or yellow lead.
Glass polishing.
Enameling of iron plates.
Enameling and tinning of hollow metal ware and cooking utensils.
Processes in which yellow chromate of lead is made, or in which goods dyed with it undergo the process of building, winding, weaving, etc.

2. Trades which produce other chemical poisons:—

Manufacture of paint and color.
Extraction of arsenic.
Dry cleaning.
Paper staining, coloring and enameling.
Hatters' and furriers' work.
The manufacture of matches.
Chemical works.
Bronzing and metallochrome powder in lithographic works.
India rubber work.
Dyeing with certain dyes.
Mixing and casting of brass, gun metal, bell metal, white metal, phosphor-bronze and Manila mixture.

3. Trades in which anthrax or lockjaw is an incident:—

Wool sorting.
The handling of hides and skins.
Hair factories.
Brush making.
Bone factories.

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Fellmongers' works.
Furriers' works.
Tanneries.
Wool combing.
Blanket stoving and tentering.
Warp dressing.
Carbonizing and grinding or rags.
Flock making.
Feather cleaning.

4. Trades in which the danger arises from injuries particles in the
air or from dust:—

Basic slag works.
Manufacture of silicate of cotton.
File cutting.
Flour mills.
Trades which use { Grindstones, or
Emery wheels.

China scouring.
Silk combing.
Flax scutching.

5. Trades in which sudden accidents are so frequent as to demand a
special legislation:—

Metal works which use convertors.
Electrical generating works.
Bottling and bottle testing.
Quarries.
Manufacture of salt.

6. Processes which require a sudden change from great heat to cold,
and vice versa, such as lacquering and japanning, galvanizing or iron and
the work carried on in furnaces and foundries.

7. Processes that require artificial humidity:—

Cotton spinning, weaving, etc.
Flax spinning, weaving, etc.
Wool spinning.
Silk spinning.

Many of the trades mentioned will fall in one of these seven classes.

The above list shows a wide prevalence of trades in which such
special dangers as we are now discussing exist. Every State in the Union
contains numerous industries in which these dangerous processes are car-
ried on.

We cannot stop to discuss just which are the dangerous elements in
each of these trades, but must go on to describe the dangers themselves.
In this description all statements have been verified through actual cases
found by the English officials and traced directly to the factories.

1. Lead Poisoning.—The direct disease caused by inhaling particles
of lead is called plumbism. One of its early symptoms is a blue gum,
followed by a loosening and dropping out of the teeth. The writer was
shown through a pottery by one of the Glasgow inspectors, and the very
first boy questioned showed the blue line along his gum and other symp-
toms of poison. There often follows blindness, paralysis and death in
convulsions. Miscarriages become the rule with the married women.
Besides the plumbism itself, there are other serious indirect results. Dr.
Tatham says: "There are thirteen occupations in which there is unmis-
takable evidence of poisoning by lead. For each occupation the mortal-

ity is shown not only from plumbism, the mortality directly attributed to which cause forms by itself but an imperfect measure of the injury resulting from the absorption of lead into the system, but also from gout and from phthisis as well as from diseases from the urinary, nervous, circulatory and respiratory systems. On examining the mortality tables it at once becomes evident that exposure to the risk of lead poisoning is associated with increased liability to disorders of the urinary and nervous systems. This is true of all those occupations which are especially exposed to that particular risk; and further, it is found that those occupations which show the greatest excess of mortality from plumbism, also show the greatest excess of mortality from diseases of the urinary and nervous systems. Among lead workers the combined mortality under these two headings is represented by 393, and that among file makers by 316, as against 123 only among occupied males in general." This subject, together with the others under discussion, has been most exhaustively treated in the Factory Inspector's reports of 1897 and 1898. There are discussed the cases which have occurred, the condition of the persons upon whom they have fallen, symptoms, remedies and the frequency of cases in the different processes.

2. The diseases and injuries arising from other poisons are so numerous and varied that they will have to be referred to very briefly.

(a) Among the early symptoms in phosphorus poisoning are recurrent ulceration of the gums, jaundice, anæmia and general ill health. Later phosphorus necrosis follows, with terrible disfigurement and often death. Optic neuritis and drop-wrist are among the other results.

(b) Mercurial poisoning gives rise to anæmia, loosened teeth and spongy gums and paresis of the muscles of the limbs.

(c) The use of nitric acid for cleansing, etc., gives rise to poisonous fumes which may cause instant death. The same thing is true of the manufacture of bleaching powder and other chemical processes too numerous to mention. It is noticeable that the workers in the chemical industries have a rate of mortality half again as great as the other trades.

(d) The use of bisulphide of carbon in rubber works causes nervous symptoms, digestive derangements and peripheral neuritis.

(e) The use of naphtha in rubber and other factories causes severe inflammation of the eyes, giddiness, nausea, hysterical symptoms and even loss of consciousness.

(f) In paint, dye and wall-paper works wherever arsenic is used the danger of poisoning is very great. As deaths have been known to result even from arsenic paper on the wall the risk may be estimated in places where solutions of arsenic are in use or arsenic dust is abundant in the air.

(g) Workers in copper and in bronzing lithographs suffer from copper poisoning. The symptoms are severe diarrhœa, vomiting and violent nausea. Skin eruptions and respiratory troubles are also common results. The workers in copper show an unusual rate of mortality.

Of course there are other important cases of chemical poisoning in industry, but these may serve as illustrations of their widespread evils.

3. Anthrax.—The symptoms of lockjaw are too well known to need description, but it is not so well known that large classes of wools, furs, hides and skins are thoroughly infected with the anthrax germ. The least scratch then becomes sufficient to cause serious illness and even death. Any one working continuously among these germs runs a very heavy risk of being infected sooner or later.

4. Dust.—To-day we are apt to look at the breathing in of dust as

our fathers did at the breathing in of germs. It seems an insignificant and ridiculous matter, but this is the reverse of the truth. One of the women inspectors of England says of the evil effects of dust: "In the majority of cases the evil is very insidious and the general symptoms produced by dust on the various respiratory organs are to the lay mind so similar to those produced by other causes that it is not always easy to trace the connection. The incessant 'sore throat,' the irritation of the bronchial passages, the frequent 'cold on the chest,' and 'hoarse voice' and 'morning cough,' from which girls employed in dusty processes suffer, are all symptoms which to casual observers might be easily accounted for in other ways. One or two sad cases of phthisis medically certified to be seriously aggravated, if not induced, by work in rope factories which came under my notice have emphasized in my mind the grave possibilities arising from work in these places.

"Such instances can seldom be fully traced except with infinite labor and patience. The worker falls into ill-health, and sinks away out of sight in no sudden or sensational manner so that attention is seldom attracted to the ultimate source of the trouble.

"The evil effects of asbestos dust have also attracted my attention, a microscopic examination of this mineral dust which was made by H. M. Medical Inspector clearly revealed the sharp, glass-like, jagged nature of the particles, and where they are allowed to rise and to remain suspended in the air of a room, in any quantity, the effects have been found to be injurious, as might have been expected."

As to the scouring of china, she says: "A microscopic examination of the flint in which china is bedded shows that, owing to the shape of the particles, it forms one of the most mechanically injurious of all dusts. In his 'Diseases of Occupations' Dr. Arlidge describes the symptoms and development of the form of phthisis produced by the action of this dust on the lungs.

"In the Staffordshire district the cause of the disease is so well known that even in a death certificate the doctor frequently enters the direct cause of death by the significant term 'flint.'"

In an old investigation one of the workers said: "Not many scourers live long; we all feel overloaded upon the chest and cough very much. I am stuffed up at my chest; I cannot lie down all night; my throat is always sore and I have a constant cough with difficulty of breathing. Every one that works in this place suffers from coughs; we are all stuffed up; we have known a great many deaths from it."

Another very injurious dust is that produced in silk combing. The British Medical Inspector says: "The photographs of silk dust taken from the combing room of a large silk factory show that it was composed not so much of particles of silk as of the debris of silk worms. The dust was present in the air of the rooms in large quantity. Microscopically it consisted of striated muscular fibres, fragments of the trachea with their spiral thickenings, hair-like processes from the skin of the larva, portions of the chitinous horny skin of the pupa case, and an enormous number of hook-like structures, probably portions of the thoracic and abdominal segments of the pupa case."

5. Among the trades in which sudden and violent accidents are so common as to need special rules the British reports give the following:—

Metal works using convertors.
Electrical generating works.
Quarries.

The manufacture of salt.

Bottling and bottle testing.

Accidents in the first three industries are so shocking that our American papers consider them worthy of attention and have given frequent accounts. They have justly become notorious.

The danger from salt manufacture is the horrible one of falling into the pans of boiling brine. Notwithstanding the precautions taken, the accidents are still very frequent.

The danger from bottling aerated waters and from bottle testing is also less known. The pressure used and the inequalities of the glass cause the bottles frequently to burst, which, of course, is apt to cause every kind of mutilation and even death.

6. Those processes that require sudden change from a very high temperature to a much lower one are probably fruitful of more injury to the workers than has ever been shown. As any of the troubles that follow might have been due to other causes as well as to this, the real one, nothing can be conclusively proven, but if we bear in mind the common medical advice about much smaller changes in temperature, we can judge what the results must be.

7. Several processes in the textile mills require artificial humidity. This brings about and nourishes all diseases that are fostered by an excessively moist climate and in some cases affects even those not especially susceptible to these troubles. Like most of the other injuries mentioned, there is little of the striking or spectacular in these diseases, but they are perhaps the cause of more human misery than our most revolting industrial accidents.

II. REMEDIES.

Legislation has been provided by Parliament to cover all these trades and is in many cases very effective. The method followed is to give the Home Secretary power to declare a certain trade dangerous and to require whatever preventatives he may consider necessary. If the manufacturer objects he may appeal to arbitrators, whose decisions are then binding. These provisions are very generally enforced. Out of fifty-six cases before the courts in 1898 the Inspectors won forty-nine.

The first essential point in the regulations is that sickness from these cases is required to be reported. This is essential both for the enforcement of the rules and as a guide for future action. Unfortunately, this requirement is not very well observed, but bills lately introduced in Parliament claim to have overcome the difficulty.

The rules themselves may be said to have several objects:—

(1) To prevent fumes or dust from arising in the first instance. An illustration of this is a requirement in the white lead work that every stack be fitted with a stand-pipe or movable hose, and an adequate supply of water distributed by a very fine hose or watering-can for dabbling the white-bed before stripping. Another is the regulation in wool sorting that the floor of the sorting-room shall be thoroughly sprinkled daily with a disinfectant solution, and swept daily after the work is done.

(2) To carry off the fumes or dust before they reach the worker. In yellow lead works and many other industries it is required that the occupiers shall provide fans or other means of ventilation wherever dust is generated in the process of manufacture. Other similar rules are especially adapted to the various industries.

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(3) Another object is to prevent the fumes or dust from reaching the person of the worker in those parts of the body they might injure. In nearly all the dangerous trades, respirators, overall suits and head coverings are required to be worn by the persons employed.

(4) It is considered most important to keep clean the person and the clothes of the worker where he is surrounded by injurious dust. Several provisions have been enacted to accomplish this purpose. Changes of clothing and baths are often required. Separate dressing-rooms, dining-rooms, lavatories and cloak rooms are provided for. Bathing is within certain limits made compulsory. Lavatories, dressing rooms, etc., are required to be kept in a clean condition. Time for washing and eating is provided for.

(5) Another object is to furnish an antidote before the effect of any poison which may have been taken into the system has resulted. The sanitary drinks are recommended and required to be taken. Upon any person complaining of being unwell, the doctor must be summoned with the least possible delay; and upon any person desiring medicine a dose of the prescribed medicine must be provided at the works.

(6) The sixth object aims to bring immediate relief after an injury, whether the worker is aware that he has been injured or not. A weekly visit by a doctor must be arranged, and he must examine every worker individually and enter the result of each examination in a register.

(7) Finally, when evident injury has been caused by poisoning it is attempted to prevent its reaching a more serious stage. Every case of illness by poisoning must be reported, both to the Inspector of Factories for the District and to the Certifying Surgeon. It is then within the power of the surgeon to prohibit the individual affected from continuing at this work.

(8) Another entirely different method of preventing these injuries is the eliminating of persons unfit for such occupations. This unfitness may arise from youth, sex, personal idiosyncrasies, or even from the accumulated effects of labor at the trade. There are many provisions under this head. The following are merely illustrative:—

In vulcanizing of India rubber no child or young person can be employed in any room in which bisulphide of carbon is used.

In white lead works no female can be employed without a certificate of fitness from a physician. No person in white lead works can be re-employed after an absence through illness without a certificate from a physician.

In lead smelting no person can be allowed to remain at work in a fume more than two hours at a time.

No person can be employed for more than five hours in any day in a room in which bisulphide of carbon is used, nor for more than two and a half hours at a time without an interval of at least an hour.

The late New York law forbidding the employment of women and young persons at work with emery wheels follows one of these precedents, but is a novelty in the factory legislation in the United States. We have many State statutes forbidding the employment of children in dangerous trades, but as these trades are not defined by law the provision is, as a rule, useless. It is extraordinary that this should be so in our country, since we believe in the education and protection of children more strongly, perhaps, than any nation of the world.

In a more or less indirect way some of the questions arising from the dangerous trades have been touched upon by the factory laws of our

States. But the point I want to make is, that, with the exception before mentioned, they have not been made the subject of the necessary special legislation. This has invariably caused improvement where it has been tried, but the problem is a difficult one at its best. Even in England many regulations have not yet given satisfaction. To ignore an issue when intelligent and persistent effort has failed to overcome it is both cowardly and unwise. The success of our emery-wheel laws should give encouragement and show the practicability of special legislative enactments in this field. Of course two or three States have a general law which may be stretched to cover some of the evils, but as experience in Great Britain has shown, this is not sufficient, and I believe that nothing less than the best, in legislation as in anything else, is good enough for America.

THE NEGLECTED STATES.

Chief Knaub, of Ohio, explained in a few well-directed words that the establishment of Factory Inspection Departments had certainly been neglected in the extreme Southern and Western States and after stating that he favored the idea of the convention meeting in neglected States, he offered a resolution upon the subject, which was referred to the Committee on Resolutions and will appear in their report.

SOCIAL FUNCTIONS.

Chief McAbee, of Indiana, apprised the delegates of the various points of interest and manufacture that were to be visited, at the conclusion of which statements Chief Arrington, of Illinois, protested against devoting any time to visiting factories or sight-seeing, but he stood alone in his position, while many defended the idea of occasionally visiting points of interest as a matter of knowledge and observation as well as a needed rest from the tiresome, irksome routine of convention work. As one chief put it, "All work and no play makes Jack a dull boy."

A LADY OF THE LABEL LEAGUE.

Mrs. Sarah Crossfield, general organizer of the Woman's International Union Label League, addressed the convention for a few moments, stating the object of their organization and asking the co-operation, as far as possible, of the State Factory Inspection Departments. She stated that both these organizations were working with practically the same object in view, the protection and relief of female and child labor and other wage-workers as well. Mrs. Crossfield paid a very neat compliment to Chief McAbee, of Indiana, for various endeavors in the interest of wage-workers of this State. She explained that her league worked among the mothers, daughters and sisters of wageearners and that they had a specific mission to fill.

TO GAIN TIME.

It having neared the hour for dinner, President Campbell notified the delegates that there would be an evening session of the Convention, to be convened at 8 o'clock, for the purpose of regaining such time as might be lost on the afternoon's inspection trip. The convention then adjourned.