

FACTORY
LEGISLATION
AND ITS
ADMINISTRATION

H. A. MESS

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**FACTORY LEGISLATION AND ITS
ADMINISTRATION**

FACTORY LEGISLATION
AND
ITS ADMINISTRATION
1891-1924

15 SEP 1928

BY
H. A. MESS, B.A.
Author of "Casual Labour at the Docks," etc.

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AUTHOR'S NOTE

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An article which appeared in the *Contemporary Review* has been incorporated in Chapters XI and XII.

H. A. MESS.

GATESHEAD-ON-TYNE,
November, 1925.

PREFATORY

THE last thirty years or so have seen a great deal attempted and a good deal accomplished in the matter of factory legislation and its administration. It is the purpose of this book to give a history of those efforts, to record the achievements, and to point out and to comment on some omissions and some failures of the period.

The year 1891 has seemed for a number of reasons a convenient starting point. There did begin undoubtedly somewhere about that time a new era in industrial legislation, marked both by a growth of compunction and a growing sense of justice, and also by increasing efficiency in obtaining ends desired. A few outstanding events round about that date indicate the new elements which were coming into British thought and practice.

In the first place the year 1891 would be of importance in the annals of industrial legislation if only because the Factory Act of that year gave to the Home Secretary power to make special rules for factories in which dangerous trades were carried on. On the clause conferring this power there has been built up a number of remarkable codes which have revolutionized conditions in many industries.

About the same time Charles Booth was publishing his comprehensive, descriptive and statistical survey of Life and Labour in London, which not only stirred sympathetic natures but also convinced the sceptically minded of the reality and scale of evils which had long been the subject of denunciation and of controversy. Public opinion was therefore prepared to deal with proved abuses.

The work done privately by Charles Booth and his band of investigators was supplemented and confirmed by two important Government inquiries. The House of Lords Select Committee on Sweating published its reports between 1888 and 1890, and the Royal Commission on Labour published its series of reports between 1892 and 1894.

Moreover these same years round about 1891 witnessed a great revival of trade union activity and an advance of trade unionism in quarters where hitherto it had been unknown. The famous Dock Strike of 1889 was only one of a series of industrial struggles in which the unskilled labourers showed their capacity to organize. And developments in trade unionism were paralleled by important developments in the sphere of politics. It was in 1892 that Keir Hardie was first returned to Parliament, the herald of a new party, the Labour Party.

These years saw also some recognition of the claims of women to a voice in industrial matters. The first of a series of strikes which marked the coming of the New Unionism was a strike of match girls. In the Report of the Chief Inspector of Factories for 1890 there is a reference to a new phenomenon, the existence of one or two women's trade unions. In 1893 the first women factory inspectors were appointed.

And, finally, it was in 1890 that there was held at Berlin the first official International Labour Conference. Small though its immediate effects were, it yet marked definitely the beginning of an attempt by the nations of Europe to work out a common policy in industrial legislation.

The years from 1888 to 1893 may therefore for a number of reasons be regarded as a turning point in the history of factory legislation. From that time onwards organized labour has to be reckoned with as a strong and increasingly stronger power. Women enter into the story in other rôles than that of mere victims to be helped or to be pitied. Concerted action with other countries begins to play a part, slight at first but of growing importance. And modern science, especially medical and chemical science, is brought to bear upon industrial conditions in the interests of the health and safety of the worker. This last factor was brought into play very largely by the section of the Factory Act of 1891 which gave the Home Secretary power to make special rules for dangerous trades. If a single year must be fixed upon as our starting point, we may well for that reason make it 1891.

The facts brought to light about the conditions of employment in the mills were, however, so revolting that Sir Robert Peel was able to carry his Factory Act in 1819. It prohibited the employment of children under the age of nine years, and it limited the work of young persons under the age of sixteen to twelve hours a day, exclusive of meal-times. But, chiefly because no provision was made for adequate inspection, the good effects of the Act were slight.

The agitation for factory legislation entered on a new phase when in 1830 Richard Oastler, who had been prominent in the anti-slavery movement, had his attention called by John Wood, a manufacturer with a conscience, to the horrors of the factory system. Oastler opened with a letter in the Leeds *Mercury* a tremendous campaign for new and effective legislation. Other able men, notably John Fielden and Michael Sadler, joined with him, and there was conducted for the next fifteen years an agitation which in power and intensity compares with the Chartist movement and the work of the Anti-Corn Law League. With strenuous agitation the opposition became more strenuous and bitter also. In 1832 Lord Shaftesbury (then Lord Ashley) became the Parliamentary leader of the factory legislation movement. The Factory Act of 1833 was chiefly notable because it provided for Government inspection.

I.

Extension to Different Classes of Works.

The Health and Morals of Apprentices Act was really a Poor Law rather than a factory law, and it was in operation so ineffective that we may disregard it in this connection. The Factory Act of 1819 applied only to cotton mills. The Factory Act of 1833 applied to cotton, woollen, worsted, hemp, flax, tow, linen, or silk mills. The extension of legislation from industry to industry was almost inevitable, for it was a clear anomaly that some

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workers should be protected whilst other workers doing very similar work, or perhaps work of a more objectionable nature,¹ should be unprotected. When the manufacturers of cotton goods pointed out that conditions in their works were at least as good as those in the works of the woollen manufacturers, and protested against regulation as being therefore unjust to them, the obvious retort for the reformers was to demand the regulation of the woollen industry also. Employers in regulated industries would generally support the extension of regulation to other industries, especially competing industries, and would sometimes ask for it. And Lord Shaftesbury's constant solicitude about children was always bringing to light fresh conditions needing the attention of legislators.

In 1845 a Print Works Act was passed; in 1860 an Act to regulate bleach and dye works; in 1861 a Lace Works Act; and in 1864 an Act to regulate calendering and finishing. In 1874 a Consolidating Act was passed to include all textile industries.

Non-textile industries (other than coal-mining) were first regulated in 1864 as the result of an inquiry, instigated by Lord Shaftesbury, into the conditions of employment of children and young persons. Six industries were placed under regulation by the Act of that year: pottery, lucifer-match making, percussion caps and cartridges, paper-staining, fustian-cutting, and hosiery.² Three years later an Act of 1867 applied to a huge catalogue of industries, including foundries, forges and blast furnaces; there was moreover a general application to "any premises on which fifty or more persons are employed in any manufacturing process." For the first time *all* factories of any size came under regulation.

Workshops were first regulated in 1864, in certain industries, and more generally by the Workshops Act of 1867. A workshop was defined as "any room or place whatever, whether in the open air or under cover, in which

¹ "What are you doing here?" said Mr. Ashton to a little fellow whom he found in one of his coal mines. "Working in mine, till I am old enough to go into factory." Nassau Senior: *Letters on the Factory Act, 1837*.

² Hutchins and Harrison, *op. cit.*, p. 154.

any handicraft is carried on by any child, young person or woman and to which and over which the person by whom such child, young person or woman is employed has the right of access or control." ¹ Handicraft was so defined as not to exclude the use of power, and the Workshops Act was so drawn as to include all factories employing fewer than fifty persons and therefore not coming under the Factory Act. From 1867 to 1878 factories were distinguished from workshops as places where more than fifty persons were employed. In 1878 the distinction of numbers was done away with, and there was substituted for it the new distinction of use or non-use of mechanical power. This distinction holds to-day.

It was contended quite early in the controversies about factory legislation, and probably with truth, that children were often treated quite as badly when they worked at home with their parents as when they went to the mills. During the inquiries of the Commission on Children's Employment in 1861-3, it was found that some of the worst conditions existed amongst workers in private houses, either their own homes or those of other people. This was notably the case with the fustian-cutters. When fustian-cutting was brought within the provisions of the Factory Act of 1864, a home industry came under regulation for the first time.

As the whole subject of out-work and home-work is extremely complicated and difficult to grasp, it may be well to give here a couple of definitions. An out-worker is one who works for an employer, but on premises over which the employer has no control. A home-worker, strictly speaking, is one who works in his or her own home, receiving assistance from no one but members of the family. A home-worker may be an out-worker or may be independent of any employer.² An out-worker may work at home, or in somebody else's home, or in a workshop. But the

¹ *Op. cit.*, p. 170.

² In the Report of the Chief Inspector of Factories for 1921 there is a description of master brush-makers in Camberwell, who work alone in their own homes, and who do not come within the scope of the Factory and Workshops Act.

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term home-worker is often used loosely and confusingly to cover workers in a dwelling-house which is not their own home. A house in which a family lives, but in which others than members of the family also work at some manufacturing process, is now legally a workshop. A private house in which members of a family, and no one else, are at work is legally styled a "domestic workshop." The Act of 1864 controlled out-workers but not home-workers, whilst the Act of 1867 controlled home-workers but not out-workers,¹ a good instance of the hesitating and uncertain manner in which extensions of the scope of factory legislation took place.

Bakehouses were brought under control in 1863 by an Act which was administered by the local authorities. In 1878 they were included under a Factory Act. Quarries were regulated under the Factory Acts from 1878 till 1894, when control of them was transferred to the inspectorate of mines.

There was no further legislation altering the scope of the Factory and Workshop Act between 1878 and 1891. As the law stood prior to the Act of the latter year, it extended to premises where mechanical power was used in manufacture, and also to certain classes of premises enumerated by schedule, e.g. lucifer-match works, glass works: these were regarded as "factories." It also applied, but with less stringent regulations, to any premises where manual labour was exercised, by way of trade or for purposes of gain, in order to make, alter, repair, finish or adapt any article: these latter classes came under the category of workshops.

II.

Restrictions on Workers according to Age and Sex.

Early factory legislation was designed for the protection of children. The opinion of the governing class was strongly opposed to any general regulation of the conditions of the

¹ Hutchins and Harrison, *op. cit.*, p. 171.

workers; and it was only by way of exception, partly because the revelations as to child labour produced an irresistible sense of pity, and partly from a perception of the absurdity of regarding children as free agents, that legislators were willing to intervene even in their case. But when once it was admitted that some legislation was necessary, it was impossible to stop at children.

The Factory Act of 1819 imposed conditions as to the employment in cotton mills of anyone up to the age of sixteen, and it prohibited entirely the employment of children under nine years of age. In 1833 protection was extended to all persons under the age of eighteen: they were limited to a twelve-hour day, and night work was prohibited. In 1844 adults were protected for the first time, women being put under the same regulations as young persons. It is worth noting in view of later controversies, that the sex distinction made then its first appearance in factory legislation. Parliament agreed to the regulation of the labour of adult women with remarkably little controversy, though the point was raised and discussed.¹

There has been much greater hesitation in interfering in any way with the labour of adult males. So far as hours are concerned, there is no general restriction to this day on the work of an adult male in a factory, though there are special restrictions with regard to dangerous processes. Indirectly they benefited from a fairly early date by legislation, ostensibly intended for the protection of women, young persons, or children; and it was well understood that they would do so: it was impossible to run a cotton mill profitably in the absence of these other classes, and therefore the hours of the men were in fact determined also.

¹ One member said that he had heard no argument to establish a difference between a man above twenty-one and a woman above twenty-one. Sir James Graham, who was in charge of the Bill, argued that "females being the weaker part of the community, and married women being under the influences of their husbands, were often tempted to labour under a desire of gain to an extent not consistent with their health." Other members laid stress upon the desirability of their being able to perform their domestic duties. See *Hansard*, 22 March, 1844.

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In the matter of fencing, of gearing and of machinery, the law seems to have hesitated at the start (in 1844) between making general provisions and making provisions dependent upon the presence of women, young persons or children. There was a good deal of misunderstanding and dispute about its application, and a distinctly reactionary measure was carried in 1856. It was not, however, till after the Act of 1867 that there were within the scope of factory legislation any considerable number of works in which men only were employed. In the Act of 1878 the requirements as to fencing were made absolute, without respect of persons. It is unnecessary to trace here the tortuous advance of factory law with respect to men's welfare in such matters as sanitation and employment on dangerous processes; a good deal will be said about it later on; it is sufficient to note that by 1891 it was well established that some legislative control, though not a great deal, was thought necessary for the protection of adult men.

III.

Needs met or Dangers provided against.

Health and morals were the two first conditions of well-being which the law attempted to safeguard. Fresh provisions are still being made continually for the purpose of safeguarding health, and the line of development from the Act of 1802 is easy to trace. It is not so easy to trace the history of legislation in the interest of the morals of the workers. Concern for morals in the narrower sense, the kind of concern which made the Act of 1802 demand the provision of separate sleeping apartments for apprentices of different sexes, is represented in modern factory legislation chiefly by provisions requiring decency of sanitary conveniences and separate cloakrooms for men and for women. It has been also the basis of demands, not yet obtained, for statutory requirement of adequate lighting in factory yards and approaches; and it has been the basis of demands

for the supervision of women by women.¹ It may be noted as a modern instance of legislation in the interest of morals (and of morals of adult men) that an Act of 1883 forbade the payment of wages in public-houses. It ought, however, to be added that care for morals was not the only motive of the Act: the practice made it very difficult for men to avoid treating the foreman, if he wished to be treated, and it therefore amounted to a virtual deduction from wages and a species of truck.

But the main succession to that part of the Act of 1802 which dealt with morals has been through the Education Acts which, though not technically Factory Acts, have had profound effects on factory conditions. The Education Act of 1918, with its requirement (not yet in force) that employers shall release their young persons for attendance at continuation school, represents the latest development of the provision in the Health and Morals Act of 1802 that apprentices should be instructed in reading and writing.

The law was late in making provision for the *safety* of factory workers. It was not until 1844 that there was any legislation: the Factory Act of that year required the secure fencing of all shafts and gearing, but the Act did not come fully into operation till 1853.² Safety regulation is therefore little more than seventy years old. From 1844 down to the present time there has been continual development; but it will be argued later on in this book that in the matter of safety, both legislation and administration (and also the efforts of employers and of workers) have attempted and accomplished a good deal less than in the matter of health.

Just payment is a fourth matter to secure which has

¹ Such supervision is sometimes imposed as a condition when two-shift working is allowed by Special Order under the Employment of Women, Young Persons, and Children Act of 1920.

Concern for morals is also one of the reasons why the Employment of Children Act, 1903, gives local authorities power to prohibit the employment of children in certain occupations, and to regulate it very strictly in other occupations. But this refers to employment outside factories and workshops, and it is not therefore within the scope of this book, except by way of illustration from another sphere of industrial legislation.

² Hutchins and Harrison, *op. cit.*, pp. 85 and 113.

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been an object of legislation from a very early date. Clearly employees ought to know how much money they are entitled to receive: yet it has often been possible for employers to withhold the information from them. The clauses in Acts of Parliament which deal with this matter are called Particulars Clauses, and the first of them in modern times occurs in an Arbitrations Act of 1824.¹ It depended, however, upon the voluntary assent of both parties, and it did not therefore afford much protection to the worker. In 1854 Acts were passed making it compulsory to supply particulars of work done and price paid in the hosiery trade and in the silk-weaving trade. Nothing more was done in this direction till 1891, when the right to particulars was conferred on all piece-workers in textile factories.

A second important matter for the workers is that they shall be paid in hard cash, without unjust deductions and without any dictation as to the way in which the money shall be spent. This is dealt with by the Truck Acts, which have a history which can be traced back as far as 1464. They continued to develop even during the period when the doctrine of *laissez faire* was most powerful. The Act of 1464 applied to labourers employed by cloth makers. In 1701 the principle was extended to woollen, linen, fustian, cloth and iron manufacture. There were extensions to other trades in 1749 and 1817. In 1831 a Consolidating Act was passed, which contained a wide enumeration of trades. The list was incomplete, as such lists almost always are, and moreover new industries kept coming into existence. In 1887 a Truck Act was passed, with a general definition to cover all manual labourers except domestic servants.² The enforcement of the Truck Act was entrusted to the factory inspectors.

To know the amount of wage due, and to be sure of getting it in hard cash, are both important. But more important still is to have an adequate wage, and to be protected against the unfair terms which an employer in a

¹ Tillyard: *The Worker and the State*, p. 26.

² This paragraph is based on the information in Tillyard, *op. cit.*, pp. 20 and 21.

strong bargaining position can often enforce on an employee. But to any regulation of the amount of wages there was during last century a stubborn opposition from employers, and public opinion was on the whole on their side. The wage was supposed to be a matter of contract between man and man with which the State could not interfere without gross injustice and the imperilment of the bases of modern industry and modern prosperity. The Trade Boards Act of 1909 was the first interference of the State in modern times with the amount of wages which might be offered or taken; and (with the amending Act) it is still the only legislation affecting the amount of wages of any class of factory workers.

IV.

Restrictions or Obligations Imposed.

(a) ABSOLUTE PROHIBITIONS OF WORK.—The first kind of restriction on employment which we will consider is an absolute prohibition to work. The Factory Act of 1819 prohibited the employment in cotton mills of children under nine years of age. The same prohibition was extended to all textile factories in 1833. In 1844 the age was lowered to eight, but some non-textile factories were included. By 1864 this applied to all factories, both textile and non-textile. In 1878 the age was raised to ten for all factories and workshops; and it remained at that until 1891 when it was raised to eleven.¹

Beside the general provisions prohibiting the work of children of tender years, there have been imposed at different times and on different classes of persons absolute prohibitions to work in certain dangerous processes or dangerous industries. The earliest provisions of that kind occur in the Factory Act of 1867. "No boy under twelve, and no woman, was to be employed in grinding in the metal trades."²

¹ The clearest statement of the development of the legal minimum age for employment is in F. Keeling's *Child Labour in the United Kingdom*. See especially pp. xiv to xvii.

² Hutchins and Harrison, *op. cit.*, p. 169.

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In 1878 the employment of children and of young persons was forbidden in certain branches of the white lead and other factories.¹ There were a few more total prohibitions in dangerous trades before 1891. Since then the exclusion of women, or of young persons, or of both, from dangerous processes has been a common feature in regulations.

The prohibition of men (as well as of women, young persons, and children) from working at a process or in an industry would be tantamount to prohibiting that process or industry altogether. There was not any such prohibition prior to 1891. Since that date we have had the White Phosphorus Act, 1908.

(b) HOURS OF WORK.—Round the question of hours, more than round anything else in factory legislation, great battles have raged, and employers have put up a stubborn resistance. It is difficult for us to understand the complacency with which a twelve or fourteen hour day could be viewed. Observers in the earlier part of the last century seem to have been strangely blind to the fatigue involved in factory work. Nassau Senior speaks of "the extraordinary lightness of the labour, if labour it can be called."² And there was a horror of idleness of which we find it hard to form a conception; it seems to have been a common assumption that any time not devoted to eating or sleeping or working or schooling must almost certainly be spent in vicious practices. But the chief reason for the opposition was that the manufacturers, having sunk capital in machinery and plant, were anxious to have the machinery running as many hours as possible. In this they were supported by many of the economists. When the Factory Bill of 1837 was before Parliament, Nassau Senior wrote to Poulett Thomson, the reactionary President of the Board of Trade, his *Letters on the Factory Act*, with their astonishing argument that the whole net profit of a cotton mill was derived from the last hour of work. The deductive method in economics was at that time something of a new toy, and

¹ Hutchins and Harrison, *op. cit.*, p. 202.

² *Letters on the Factory Act*, London, 1837.

Senior has a long train of reasoning¹ designed to prove that any restriction on hours will be ruinous to the cotton industry—"I think I see, as in a map, the succession of causes which may render the cotton manufactures of England mere matter of history." What Nassau Senior and most of the economists and manufacturers of the time did not know, and indeed it was not generally realized right down to the period of the Great War, was that shortening of hours does not necessarily lessen output. Yet Robert Owen had already demonstrated this in his mills at New Lanark.

In the matter of hours it is useful to bear in mind five^d distinct kinds of limitation, which have however constantly interacted. There has been limitation of (a) the number of hours which may be worked in a day; (b) the period each day within which the allowed hours may be worked; (c) the number of hours which may be worked in a week; (d) the number of hours which may be worked without a break, i.e. the spell; (e) overtime work.

The history of the regulation of the hours of children is not easy either to trace or to set out in any intelligible form. It must suffice here to indicate the main features of it. The Act of 1819 forbade the employment of those under sixteen for more than twelve hours a day, exclusive of meal-times; and these hours were reduced to nine by the Act of 1825. The Act of 1833 stipulated that children under the age of thirteen should attend school either half each day or on alternate days. Regulations as to the number of hours which might be worked by children employed in different ways, or in different kinds of work, now become very complicated and cannot be followed in detail. After 1870 a still further complication arises: the Factory Acts continued their regulations as to hours of

¹ The argument can be condensed as follows: If profits are to be maintained with shorter hours, prices must be raised. Higher prices will diminish consumption. Diminished consumption must bring about diminished manufacture, with consequent loss of the economies of large scale production. Prices will therefore rise still further. Foreign competition will cut into our trade, and increasingly the advantages of large scale production will pass from our manufacturers to the foreigners. And so, with acceleration, to the dismal end.

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work and the necessity of attending school, and the Elementary Education Acts also made claims upon the time of the children. The Factory Acts allowed children to work part time after the age of ten, but school boards, where they existed, could make by-laws under the Education Acts keeping children at school full time until they were thirteen. As much was left to the option of local authorities, whose standards differed widely,* it is not surprising that an Inter-Departmental Committee should characterize the situation later on as "somewhat complicated and in certain minor respects uncertain."¹ The position in 1891 prior to the passing of the Factory Act of that year, was roughly this: children who had reached the age of ten might work six and a half hours a day, or alternatively they might work ten hours every second day; on reaching the age of eleven they might obtain complete exemption from school and become "young persons," or they might have to wait for it as long as two years. The total number of hours which a child might work in a week varied, according to the scheme of employment and the nature of the work, from twenty-six and a half to thirty-four. The hours had to be worked between 6 a.m. and 6 p.m. or between 7 a.m. and 7 p.m.²

The distinction between children and young persons in industry was first drawn in the Act of 1833. Those between the ages of thirteen and eighteen were not to work longer than twelve hours a day or sixty-nine hours a week. In 1847 the Ten Hours Act was passed, applying to all classes of workers except adult men. But it was found in practice extremely difficult to enforce, because the ten hours might be taken at any time between 5.30 a.m. and 8.30 p.m.; it was almost impossible for the inspector to

¹ Report of Inter-Departmental Committee on Partial Exemption from School Attendance. Cd. 4791 of 1909.

² The chief sources of information as to the hours of children, apart from the Factory Acts themselves, are Hutchins & Harrison, *History of Factory Legislation*, an article on Child Labour in Palgrave's *Dictionary of Political Economy*, and F. Keeling's *Child Labour in the United Kingdom* (see especially the table on p. xxv). But their statements do not always appear to agree. An accurate and detailed history of the regulation of the hours of children in factories does not seem to have been written.

find out whether any particular worker had started the day at 5.30 or later. There was an agitation, therefore, to make the legal day correspond with the working hours permitted; and this was achieved by the Act of 1850, which said that the working day must be from 6 a.m. to 6 p.m. or from 7 a.m. to 7 p.m. This "normal working day" is still in force. There was fierce opposition to the Act of 1847 and to that of 1850; and Lord Shaftesbury, the leader of the agitation for factory legislation, found (or thought he found) that he could only obtain the much needed "normal day" by consenting to a slight lengthening of hours. After 1850 young persons (and also women) might work ten and a half hours a day instead of ten hours a day as between 1847 and 1850. It was a slight nominal loss but a substantial real gain: for the new hours could be enforced. Textile workers recovered the ten hours day in 1874 and it is still their legal maximum. Non-textile workers remained with the legal maximum of ten and a half hours a day as in 1850. The weekly maxima are fifty-six and a half hours and sixty hours respectively.

In the early days of the cotton mills children were often kept at work for very long hours with no interval whatever, and they ate their food as they did their work. The setting aside of time for meals was imposed by the Act of 1825; and most Factory Acts since that time have contained provisions as to the number of hours which might pass without an interval. The maximum length of spell was fixed by the Act of 1878 at four and a half hours in textile factories or five hours in non-textile factories.

The question of overtime has been a difficulty throughout the history of factory legislation, and not infrequently the effect of regulation of hours has been almost nullified by the exceptions allowed. Thus the Act of 1819 was followed promptly by an Act of 1820, allowing time lost by failure of water power or by other accident to be made up by overtime work.¹ And very generous exceptions have always been made. Since 1867 the Home Secretary has had power to relax the regulations, as to hours of work by Special

¹ Hutchins and Harrison, p. 30.

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Order, at first for any trade but since 1901 for certain trades and in defined circumstances only.¹

The fortunes of women in the matter of the regulation of hours have been since 1844 precisely the same as those of young persons.

It will be convenient to consider here the question of holidays. The short day on Saturday dates back to 1825, when it was enacted that children in cotton mills should not work more than nine hours on that day. It is a commentary on the distance we have travelled since then that the notion of calling a nine-hour day a short day raises a smile in us. But it may check any tendency to self-righteousness if we recall that the law still allows eight hours work on Saturdays in non-textile factories and workshops. In textile works, and a few other works, only a five-hour day is allowed.

The temptation to indulge in Sunday work is comparatively modern; the earlier generations of manufacturers, who might be sweating and overworking their employees horribly, would usually have lifted their hands in pious horror at the notion of breaking the fourth commandment. There was no legal prohibition except under an obsolete law of 1649.

Statutory holidays were first fixed for children and young persons in 1833, and were extended to women in 1844. They were in 1891, and are still, Christmas Day, Good Friday, the four Bank Holidays, and any specially appointed national holidays. Certain latitude of substitution is allowed to the employers.

With regard to holidays, as with regard to hours, there is no statutory protection for adult men.

(c) **SANITATION AND SAFETY.**—The most important developments in factory legislation during the period 1802 to 1891 were in respect of hours; the story of the other developments can be told more briefly.

The Act of 1802 made some slight provision as to cleanliness, but it did not go beyond an obligation to limewash twice a year. This was made applicable to all factories

¹ See Hutchins and Harrison, Appendix A.

by the Act of 1864. The same Act saw the faint beginnings of special regulations for the dangerous trades: employers were empowered in certain trades to draw up, and to enforce by fine, rules intended to ensure cleanliness and ventilation. In 1867 there was substituted for the requirement to lime-wash a requirement to keep the building clean; in 1878 limewashing was restored to a place in the Factory Act, and the general requirement as to cleanliness was kept as well. But cleanliness is such a matter of differing opinion that it was found difficult to enforce anything above a very low standard. The greatest success has been in those industries scheduled as dangerous and placed under special regulation, but that is almost entirely a story of achievement since 1891.

The year 1844 is important historically as seeing the beginnings of safety legislation: there were provisions as to the fencing of machinery, and also a prohibition of cleaning machinery in motion by women, young persons, or children. These provisions were modified and improved in subsequent Acts, but there was no very remarkable development down to 1891.

Regulation of sanitary conveniences first appeared in a Factory Act in 1864; there had been some regulation in some districts under Public Health Acts for nearly twenty years before that date.

Ventilation, like cleanliness, was mentioned in the Act of 1802, but for practical purposes the Acts of 1867 mark the beginnings of modern legislation. The inspector was empowered by them to require the use of a fan or other mechanical means to carry off dust or gases generated in the process of manufacture. The Cotton Cloth Factories Act of 1889 made elaborate regulations as to the extent of humidity permitted. Not much more was done prior to 1891.

The year 1867 also saw the beginnings of a kind of regulation to which recourse has been made frequently in later years. Children, young persons and women were forbidden to take their meals in any room in which grinding or cutting of glass were carried on. The prohibition was extended

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afterwards to other classes of work. The provision of a meal-room first occurs as a requirement in an Act of 1883 applying to white lead works. The same Act required the provision of lavatory accommodation for all workers, baths with hot and cold water for women, overall suits and respirators, and a supply of acidulated drink. It marks the beginning of that highly detailed regulation of which there have been many examples since.

It should be noted that there was in 1891 no provision with regard to either temperature or lighting.

V.

The Enforcement of Legislation.¹

The administration of the Act of 1802 was entrusted to the justices of the peace, who were to appoint two of their number (one of whom was to be a clergyman) to visit the factories. When the Factory Bill of 1819 was in preparation Robert Owen, who had himself drafted a Bill, recommended strongly the appointment of paid and qualified inspectors; but his advice was not taken, and inspection was left as before to the unreliable and amateurish efforts of the justices. By 1833 it was quite clear that supervision by the justices was ineffective; and the Factory Act of 1833 provided for the appointment by the Government of four inspectors. They were required to report to Parliament quarterly and to confer together twice a year. Assistants were provided, who did not receive till 1844 the right of independent entry to factories. Lack of uniformity of methods and of standards among the four inspectors and their assistants soon made clear the desirability of a more closely organized staff. This was effected by not replacing the original inspectors when they died or retired, until in 1878 there was only one left, Mr. (afterwards Sir) Alexander Redgrave, who was appointed Chief Factory In-

¹ For fuller accounts see Hutchins and Harrison, *op. cit.*, and the chapter on Great Britain in the Report on Factory Inspection published by the International Labour Office.

spector with the duty of organizing and supervising a staff. The country was divided into areas under superintending inspectors, who exercised a general supervision over district inspectors. This arrangement proved satisfactory and it is in operation to-day.

The original inspectors were given the powers of justices of the peace, and they were also given the power to make regulations which they might enforce. In 1844 the first-named powers were taken from them, and since that time they have had to prosecute offenders before the courts. The right to make regulations was also taken from them and transferred to the Secretary of State. They retained the very necessary right of entry, and the right to interrogate any worker without the presence of the employer or his agents.

Early requirements of the Factory Acts were the registration of factories (1802), the display of an abstract of the Acts (1819), and the keeping of records of various kinds, e.g. lists of the children employed. Requirements of this kind have very much increased.

Fines are the only penalties attaching to breaches of the Factory Acts, except that in flagrant cases of danger to the workers an order may be obtained for the closing of the factory or some part of it. At one time fines were ridiculously small, and it is still the dislike of publicity rather than the amount of the penalty which is the chief deterrent. The maximum fine which could be imposed in 1891 was, and still is, £100.

The staff of inspectors numbered fifty-six in 1891: there was a Chief Inspector, four Superintending Inspectors, thirty-nine Inspectors, one Cotton Cloth Factories Inspector, and eleven junior inspectors. The appointment of the Cotton Cloth Factories Inspector in 1891, following on the Act of 1889, marked the beginning of the specialization of staff which was to be carried a great deal further in the next thirty years.

In addition to the inspection of factories and workshops by the Home Office staff, there has also been inspection by the local sanitary authorities. The co-ordination of

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the duties of the two sets of authorities has always been unsatisfactory. Sometimes the Home Office has been responsible for the enforcement of sanitary conditions. Sometimes the local sanitary authorities have had responsibility for the enforcement of other than sanitary regulations. Usually there has been overlapping; and often there has been, in a famous phrase, "not so much overlapping as hiatus."

This history is tangled, but the outstanding facts are as follows. The Sanitary Act of 1866 was applied to factories and workshops, and the local sanitary authorities became responsible for their sanitary condition. In 1867 the administration of the Workshops Act was placed entirely in the hands of the local authorities. This proved a failure, and in 1871 the enforcement of the Workshops Act (but not of the Sanitary Act) was handed over to the Home Office. In 1878 the sanitary regulation of some workshops was entrusted by Act of Parliament to the factory inspectors. In 1891 the supervision of the sanitary condition of workshops was again entrusted to the local authorities, but the factory inspectors were left with power to act in default. The situation therefore stood (and stands) that the sanitary regulations as to workshops are normally enforced by the local authorities, whilst other regulation of workshops under the Factories and Workshops Act is the duty of the Home Office. The sanitary condition of factories is in the hands of the Home Office.

The local authorities were granted by the Factory Act of 1891 powers and duties of supervision with regard to risks of fire. The manner in which they have used their powers is discussed later on.

VI.

The Movement of Public Opinion, 1802 to 1891.

Whilst, in an attempt at clearness, the extension of regulations in different directions and the dates of distinctive advances have been noted, it must not be supposed that

there was anything clear or orderly about the actual development of factory legislation. It is indeed a most tangled history, full of anomalies and of inconsistencies, of rapid advances in some directions and of arrested development in other directions. The textile industries were regulated long before there was any attempt at the regulation of other industries in which equally bad conditions obtained. The law has been tardy and dubious in dealing with men's workshops and with home-work. There have been bad retrogressions at times. A ten-hour day was gained for textile workers as far back as 1847 and lost again in 1850, so that at the present day women and young persons are allowed to work longer hours in non-textile industries than was permissible between 1847 and 1850 in the textile industries. Between 1875 and 1878 many workshops were without any sanitary regulation whatever, though they had been under regulation previously; and this was not of policy but by mere oversight in the process of drafting new Acts and repealing old ones.

And in this cold account there has been no indication of the actual fury in which much of the legislation was pressed and passed. The romance of the Factory Acts must be read elsewhere:¹ the amazing life stories of Robert Owen, of Richard Oastler, of Lord Shaftesbury; the herculean labours and indomitable will of Leonard Horner, one of the original four inspectors; the monster meetings, the petitions and deputations; the opposition, modified in course of time, of good men like Macaulay and John Bright. We seem very far away to-day, and it was true even of 1891, from the frame of mind of the end of the eighteenth century and the early nineteenth century. We read with astonishment the complacent accounts of "busy scenes of cheerful industry," where children from five years old worked all day and attended evening school afterwards. We smile when we read that the Act of 1819, limiting the work of children to twelve hours a day, was denounced

¹ See especially Hutchins and Harrison, *History of Factory Legislation*; E. Hodder, *Life of Lord Shaftesbury*; J. L. Hammond, *Lord Shaftesbury*; G. O. Trevelyan, *Life of John Bright*; "Alfred," *History of the Factory Movement*.

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as encouraging vice. (Yet there were arguments not wholly dissimilar a few years ago, whenever the shortening of hours was discussed: the working classes would not know how to use leisure, it was said, and the effect of shorter hours would be an increase of drinking or of other depravities.) There is a slightly more modern touch about John Bright's declaration that he would have to close his works if the State interfered between him and his workpeople; we have still with us the manufacturer who is sure that he will be ruined, whenever new regulations are proposed. But by 1891 the idea of State regulation of industry was generally accepted. There remained a reluctance to interfere with the conditions of adult men, except for very flagrant mischiefs. And there was in full swing a movement, deriving from the Women's Rights Movement, to oppose any regulation of women's labour unless the regulations were applied equally to men.

Employers have been most sensitive, and public opinion has been least insistent, in the matter of hours. It has been far easier to obtain assent to measures for sanitation or safety. And usually advance has come by dealing with special and obvious evils, and then extending the regulations to cover more general conditions. Most measures have been compromises, often shaped by the exigences of parliamentary procedure. The Factory Acts are a mass of anomalies and of inequalities, of special regulations and of exceptions.

CHAPTER II.

FACTORY LEGISLATION 1891-1924: A GENERAL SURVEY.

THE Factory Act of 1891, which was introduced by the Government as an alternative to a stronger Bill brought forward by a private member,¹ was not a consolidating Act, and it left in operation most of the sections of the Acts of 1878 and of 1883. Its main object, as explained by a distinctly unsympathetic Home Secretary,² was to deal with sanitation and ventilation, especially the sanitation and ventilation of workshops. To effect this, the Government Bill proposed putting the responsibility for the supervision of workshops upon the local authorities, whilst strengthening the powers of the factory inspectors with regard to the sanitation of factories. The factory inspectors were also to have some jurisdiction over workshops as well as the local authorities, so that they might be able to act if the local authorities failed to exercise their powers. The Bill was not to apply to domestic workshops, the contention being that they were sufficiently protected by the Public Health Acts, and that if a man's house was good enough to live in, it was good enough to work in.³ To which one member objected: "I cannot for the life of me see why if a man chooses to employ in a workshop his sisters and his cousins and his aunts, he is to be allowed to poison them with bad air and foul drains."⁴

With regard to ventilation the Government proposed that the factory inspectors should have power, subject to arbi-

¹ Sir H. James, afterwards Lord James of Hereford.

² Rt. Hon. H. Matthews.

³ Speech of Rt. Hon. H. Matthews, Hansard, 26 February, 1891.

⁴ Speech of Mr. A. A. Baumann, Hansard, 26 February, 1891.

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tration on appeal, to impose special requirements where there were special dangers to health. Similar powers, subject to the same limitation, were to be given to them to deal with conditions dangerous to safety, e.g. unfenced vats in chemical works. The Home Secretary did not conceal his own dislike of the proposal.¹

The Berlin Conference had taken place in the previous year, and among its recommendations was the exclusion of women from employment for a month after childbirth. Effect was given to this recommendation. At the Berlin Conference the majority of the delegates, including the British delegates, had recommended the raising of the age at which employment might begin to twelve years. In spite of this recommendation, the British Government now proposed leaving the age at ten years as before. The Home Secretary contended that children working half-time were at least as healthy and as intelligent as those attending school full time. Moreover he proposed abolishing the certificate of fitness: it had originally been required at a time when it was difficult to ascertain a child's age, but the Education Acts had altered this. Parental interest or the employer's interest would prevent the employment of unfit children, and the factory inspector would still have the power to order the medical examination of any child who seemed to him unfit.

This very unsatisfactory Bill was considerably improved before it became law. The chief battle raged round the question of raising the age of employment; it ended in a compromise by which the age was raised to eleven. The certifying surgeon was retained. A Particulars clause gave to most textile workers the right to a written statement as to piece-work rates. The Home Secretary obtained power to require employers of out-workers to keep a list of them.

An attempt was made to extend the scope of the Bill to include laundries, and a demonstration of laundry workers

¹ "I am not prepared to say myself that I am altogether in sympathy with legislation of that sort, though it has become of late more and more agreeable to this House. . . . I embark upon this kind of legislation with some degree of hesitation." Hansard, 26 February, 1891.

was held in Hyde Park ; but a motion in the House was lost. It is curious to notice that the section relating to dangerous trades, under which such great developments were to take place, attracted very little attention or opposition.

There was a more sympathetic Home Secretary ¹ in office in 1895. By this time the importance of the clause enabling the Home Office to make special rules for dangerous trades was much better realized, and there were strong debates on the subject on both the second and the third readings. The Home Office had discovered that they could not apply effective special rules to a number of dangerous trades unless there were some amendment of the law: whilst manufacturers and other employers were alarmed at the possibilities which were opening up. The Home Office wanted power to limit the period of employment, or to prohibit employment altogether, for certain classes of workers in dangerous trades; such powers were especially needed in order to lessen the evils arising out of employment on lead processes. They also wanted, but did not obtain, power to prohibit the use of any material or process. Mr. Stuart Wortley voiced the feelings of a good many members when he pointed out that if the Bill passed it would withdraw questions of hours of labour from the control of the House, and submitted that "this was not the way in which legislation of this important character should be made operative upon Her Majesty's subjects."² The Home Office also wanted to bring buildings in course of construction, and ships loading or unloading in docks or at wharves, under some of the provisions of the Factory Acts. Objection was taken that ships were already inspected by the Board of Trade, but it was pointed out that these particular operations were not inspected. Mr. John Burns spoke strongly for the proposition, Mr. Joseph Chamberlain

¹ Rt. Hon. H. H. Asquith (now Lord Oxford and Asquith). A great deal is due to his courage and initiative, both in factory legislation and in its administration. He was the real author of dangerous trades legislation; and his appointment of women factory inspectors was in its day a startling innovation.

² Hansard, 22 April, 1895.

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against it. Another member said of this and of the proposals with regard to special rules that they were an endeavour "to endow the Home Office as a kind of arbitrary tribunal with the power of dictating to every manufacturer and ship-owner how he should carry on his business."¹ The opposition failed, however, to secure any substantial modifications.

Other important proposals became law. A reasonable temperature was made a requirement for the first time. The right to a written statement of "particulars" was extended to all textile workers, and the Home Secretary was given power to extend it by Special Order to any class of non-textile workers. Occupiers of factories and of workshops were required to make a return of their employees with particulars of age and sex. Local authorities were required to inform the factory inspectors what action they had taken as a result of complaints sent to them by the latter. Four industrial diseases² were made notifiable by employers or by doctors who became cognizant of cases. Workers were given the right to representation at arbitrations with regard to special rules. Responsibilities usually placed upon occupiers of factories were in the case of tenement factories placed upon the owners. The significance of most of these changes will be made more clear in later chapters.

The Government had proposed to abolish overtime employment of young persons. Strong opposition was expressed to this, especially in the interests of the glass trade and of the iron trade, both of which, it appeared, would be ruined if boys were not allowed to work at night. The opposition was successful. A proposal introduced during the course of the Bill through Parliament to prohibit overtime employment of women was opposed by the champions of women's rights and was defeated. The only change which was carried as to overtime was that the number of days in the year on which overtime might be worked on perishable goods (fruit, fish, and so on) was reduced from ninety-six to sixty.

¹ Speech by Mr. Seton-Karr, Hansard, 3 July, 1895.

² See p. 41.

By the Act of 1895 laundries were for the first time brought within the scope of the Factory Acts in respect to other matters than sanitation, though only in a very incomplete and unsatisfactory way. Their hours were to be limited to fourteen a day with a possibility of two hours overtime on three days in the week but not exceeding thirty days in all in the year. This very mild restriction was hotly debated, and much was made of the hardship which would be inflicted upon poor widows if they were not allowed to work any hours they chose.

This Act was a remarkable example of important legislation carried by a Government in a very weak position. The Liberal Government, together with its Nationalist allies, had only a majority of forty during the period of first and second reading and of committee. It had actually fallen and had been replaced by a Conservative Government, also in a weak position until dissolution should give it a majority, before the third reading came. The new Government placed facilities in the way of its passing. The explanation of the easy passage of the Act in such difficult Parliamentary circumstances is to be found in the great advance of public opinion which had taken place in the last few years, largely as a result of the inquiries of the various departmental committees into dangerous trades, and the publicity which had been given to them by the *Daily Chronicle* and other newspapers. One important matter could not, however, be dealt with, since it was too controversial for a weak Government to handle: the age at which children might start work was left as it was, and our commitment made at the Berlin Conference of 1890 still remained unhonoured.

Before passing on, we may notice with sympathy the naïve hope of one member, who supported the Bill, "that it might be looked upon as perfecting and completing for some time to come all that was required in the way of factory legislation."¹

In 1896 the Conservative Government introduced a Truck Bill. This was not a consolidating Bill, though the need

¹ Speech of Mr. G. Whiteley, Hansard, 22 April, 1895.

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for consolidation was admitted, but had specific reference to the burning questions of fines for breaches of discipline and of deductions from wages for (a) damage to materials supplied by the employer, (b) supply of materials or of tools by employer. A number of legal decisions had thrown the existing law into confusion, and employers and workers alike were anxious to know where they stood. The chief opposition came from those who were afraid that the attention of employers would be called by a new Act to powers which in many trades were unused and scarcely known to exist. The Lancashire weavers were especially strong in their opposition to the Bill. The Home Secretary¹ met the objection by taking power to exempt trades or portions of trades from the operation of the Act. The most important clause in this Truck Act was that providing that fines and deductions must be "fair and reasonable having regard to all the circumstances of the case." A register of fines was to be kept and to be open to the factory inspector. The Act applied to laundries.

In 1897 a Cotton Cloth Factories Act, dealing with temperature and humidity, was passed without opposition, its terms having been agreed between the representatives of all interests during the proceedings of a Departmental Committee appointed in the previous year.

In 1899 a private member's Bill to raise the school leaving age to twelve passed into law without much opposition.

In 1901 the Government introduced a Factory Bill to consolidate and to amend the existing law. A general provision as to ventilation was introduced: hitherto the law had only provided for the removal of impurities generated in the process of manufacture. A definition was given of an "underground" workplace.² Electrical works and railway sidings used in connection with a factory were to be brought within the scope of the Factory Acts. A clause in the Act of 1895 relating to docks had been badly drafted, and by legal decisions it had been rendered ineffective; a

¹ Sir M. White Ridley.

² The Bill defined a workplace as being "underground" when the floor of the room was three feet or more below the surface of the ground.

more explicit clause was now to replace it. It was proposed to inspect laundries conducted by religious and philanthropic institutions. There was to be a new procedure with regard to special rules (henceforward to be called "regulations") for dangerous trades: they were to be promulgated by the Home Secretary for a whole trade, without notice to or negotiation with each separate employer,¹ and, though a public inquiry must still be held if there were opposition, the last word was to rest with the Home Secretary and not with arbitrators or umpires. The power, asked for in 1895, to limit or prohibit under regulations the use of any material or process was again asked for and this time obtained. The responsibilities placed upon the owners of tenement factories were increased.

The age at which a child might be employed was raised to twelve, so that factory legislation ran parallel with educational legislation.² Power was given to certifying surgeons to attach qualifying conditions to their certificates of fitness for employment. Children were prohibited from cleaning beneath machinery, a frequent cause of accidents. The powers and duties of local authorities were increased. To them was given the main responsibility for the sanitary condition of domestic workshops. They were required in future to inform factory inspectors what action they had taken in respect of a complaint forwarded to them by the latter. And local authorities were in future to forward to other local authorities concerned any names and addresses of out-workers which they received from employers within their own area employing workers outside the area.

There were numerous other minor changes, as might be expected in a consolidating Bill; reference will be found to some of them elsewhere.

The Bill became law without very strenuous opposition, except on the subject of the inspection of laundries in religious and philanthropic institutions. Such strong objec-

¹ Special rules had to be withdrawn before regulations could be issued, and in some trades it was many years before this was done. E.g. the special rules for handling of hides and skins, issued in 1902, were only replaced by regulations in 1921.

² See p. 88.

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tion was taken to this by the Irish members, and by one or two English members, that the Government dropped the clause. The Bishop of Winchester¹ made it clear in the House of Lords that members of the Church of England would welcome inspection for their institutions.

Some small additions were made to the Bill during its passage through Parliament. The working hours of the textile industries were reduced by one hour a week and of the non-textile industries by two hours a week.

The Employment of Children Act in 1903 dealt for the most part with occupation outside of factories and workshops; but it contained two clauses which strengthened the hands of the factory inspectors. Sections 3 and 13 prohibited the employment of children in lifting heavy weights or in any dangerous or unhealthy occupation.

In 1906 there were two changes in factory legislation. The Notice of Accidents Act substituted more stringent provisions for those of the Act of 1901, and in particular it gave the Home Secretary power to require notice of dangerous occurrences in any trade. The Census of Production Act introduced some slight changes in the time of making returns of the number of persons employed.

In 1907 a fresh effort was made to deal with laundries. Hours of labour (inclusive of meal times) were reduced to sixty-eight per week, which might be distributed in various ways between 9 a.m. and 9 p.m., provided that the scheme of hours chosen was not changed more often than once a year. In addition an hour's overtime might be worked on sixty days in the year. All laundries were now brought under regulation, with some small exceptions and modifications. Laundries attached to other commercial enterprises or to public institutions, e.g. a hotel laundry or a public school laundry, were included.

Religious institutions, where the work was done by and for inmates only, were still exempt from inspection. Other charitable or philanthropic institutions might submit to the Home Secretary a scheme whose provisions must not be less favourable than those ordinarily allowed under the

¹ Dr. Randall Davidson, now (1925), Archbishop of Canterbury.

Act. As a concession to rescue homes and similar institutions it was agreed that in such cases the factory inspector should only have the right of private interrogation of workers if their authorities consented ; but the Home Secretary had power to suspend this provision in any case where he had reason to believe that a contravention of the Act was taking place.

There was no serious opposition in either House of Parliament, Roman Catholic feeling having died down since 1901 as a result of the experience of those institutions which had submitted to voluntary inspection.

A Bill was introduced in the same year of which the Home Secretary, Mr. Herbert Samuel, said that its title was very wide and its scope very narrow. The purpose of the Employment of Women Bill was to ratify the convention made at the Berne Conference in the previous year with regard to prohibition of the industrial employment of women at night. So far as factories and workshops were concerned this had already been effected in this country except in the case of certain flax scutch mills which were specially exempted in the Act of 1901.¹ The Bill passed into law without opposition. In the following year another of the Berne Conventions received somewhat belated ratification by the White Phosphorus Matches Prohibition Act.

In 1911 a new Cotton Cloth Factories Act was passed which, following the precedent of 1897, simply embodied the agreed recommendations of a Departmental Committee ; or rather, in this case, gave the Home Secretary power to apply as regulations such of them as he saw fit.

There was no further legislation before the outbreak of the Great War. The emergency measures taken during the War, and the effects both temporary and permanent of the War on public opinion, are the subject of another chapter. Here it will only be necessary to mention the permanent factory legislation passed during the period, the Police, Factories, etc. (Miscellaneous Provisions) Act, of 1916, and the Education Act of 1918 which had industrial clauses. The former was as its name indicates, an Act

¹ Factory and Workshops Act, 1901, s. 57.

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dealing with a considerable variety of matters, whose only connection was that they all came within the scope of Home Office administration. The broad effect of the factory clauses of this Act was that the Home Office obtained power to prescribe conditions of welfare, as distinct from general safety and sanitation, even in the absence of any special danger; and there began to be built up for different industries a series of orders similar to those which had come into force during the past twenty-five years in the "dangerous trades." These Welfare Orders are described in detail elsewhere. Partly because of the great change in opinion and in practice caused by the War, and partly because attention was directed to other issues, the far-reaching provisions of this Act received little or no opposition. The real debating was between Labour members and was on an issue of little importance. The Government proposed that accidents in general should no longer be reported to the certifying surgeon for investigation: this was in accordance with a recommendation of the Departmental Committee on Accidents, which had found that the certifying surgeons' reports threw little or no light as a rule on the causation of accidents. The change was opposed by some of the Labour members, fearful that a safeguard was being taken away; and it was opposed also in the interests of the medical profession, whose *amour propre* was hurt. The case for the change was, however, overwhelming and the clause passed. The only other clause in the Act which encountered serious opposition was that allowing a compulsory deduction from wages as a contribution to the cost of certain conveniences or amenities. The Labour members contended that the whole cost of these should fall upon the employer. It was finally agreed that where two-thirds of the workers desired some convenience or amenity a compulsory contribution might be levied on all the workers, provided that arrangements were made for associating the workers with the management of the particular scheme. The clause has remained in practice a dead letter.

The Education Act of 1918 was the high-water mark in

legislation of that wave of humane feeling and high aspiration for the future which was so noticeable a feature of the concluding years of the War. It belongs to the time when it really did seem incredible that men could be allowed to return from water-logged trenches to anything less than homes fit for heroes. Its educational schemes are outside the scope of this book, but with three of its clauses we are concerned. Section 8 put an end to any exemption of children from school attendance between the ages of five and fourteen; and it also gave power to local authorities to raise the school-leaving age to fifteen. Section 10 made provision for compulsory attendance at continuation schools to the age of sixteen, and ultimately to the age of eighteen. Section 14, which is complementary to Section 10, made it illegal to employ any child in a factory or workshop. Sections 10 and 14 came into force at once; the operation of Section 10, after one or two experiments, has been postponed until such time as we recover from our post-war gloom.

Since the War there has been a good deal of useful legislation, though none of first-rate importance. A Checkweighing in Various Industries Act was passed in 1919. The most remarkable thing about this Act was that it came so late in the day. The introducer of the Bill, Mr. G. H. Hirst, gave a short history of the agitation which had lasted over twenty-five years. There had been checkweighing in coal mines since 1860.

“ In 1893 the steel and iron trade first brought it to official notice. In 1894 a Committee of Inquiry was appointed by the Home Office, and Mr. Asquith, who was then Home Secretary, met a deputation from the different societies. Again in 1896, Sir Matthew White Ridley met a deputation, and in 1897 another deputation went to the Home Office from the Trades Union Congress, headed by the Secretary, who at that time was Mr. Hodge. In 1898 a deputation from the iron and steel trades met the Home Secretary. . . . On 4 May, 1907, a Report was made by a Departmental Committee on checkweighing in the iron and steel trades. . . . We find that the dock labourers introduced this question so far back as 1908, when a Departmental Committee was appointed by Mr. H. J. Gladstone. . . .

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A Bill was again produced in 1914 by the then Home Secretary (Mr. McKenna), but it got no further than second reading. Ever since then the workmen have been doing all in their power to try to get this Bill through, but they have not succeeded up to the present time."¹

The Bill was adopted by the Government and it passed without trouble. The Checkweighing in Various Industries Act is a notable example both of the tardiness with which abuses have been removed and also of the ultimate reward of persistence. In view of the long history of the subject and the obvious justice of the workers' claims, which indeed no one contested, it is not surprising that the seconder, Mr. T. W. Grundy, should say that

"this long delay must, as it has done, always leave with the workmen the idea that Parliamentary methods are slow and cumbersome, and that they have to resort to other methods which are not either in the interests of the employer, the workmen, or the country generally."²

There were two Acts of Parliament in 1920 passed to give effect to conventions of the Washington Conference. The Employment of Women, Young Persons and Children Act prohibited the employment of children under fourteen in any industrial undertaking; it also prohibited the employment of women and young persons at night.³

But in addition to the clauses needed to carry out the Washington conventions, the Act gave power to the Home Secretary to allow by Order women and young persons to work an eight-hour day commencing as early as 6 a.m. or ending as late as 10 p.m. The object of this was to allow the working of two shifts in factories in continuance of war-time practice. The advantages claimed were that a reduction of hours was made possible and that it obviated the dismissal of a large number of women.⁴ There was hot

¹ Hansard, 2 May, 1919.

² Hansard, 2 May, 1919.

³ With the exception that young persons over the age of sixteen might still work at nights on certain continuous processes.

⁴ With demobilization there was a great deal of unemployment amongst women, and the abnormal conditions in the building trade and other trades made impossible the rapid expansion of premises and of plant which might have absorbed them.

controversy on the subject. On the second reading the opinion of the House was obviously hostile to the proposal; it was felt to be a retrograde step to allow women and young persons to go to work so early or to be at work so late. The Government appointed a Departmental Committee to inquire into the matter, and its members reported unanimously in favour of the continuance of the two-shift system for the time being.¹ This carried the day. Certain restrictions and precautions were imposed. This part of the Act was to have force for five years only. The two-shift system was only to be allowed in any factory or group of factories if the employers and a majority of the employed asked for it. Young persons under sixteen were not to be employed.² Where the two-shift system was worked, the Home Secretary was to have power to attach any conditions which he thought necessary to safeguard the interests of those employed. The commonest conditions have been that no young person should work on afternoon shift in two consecutive weeks and that cloak-room and mess-room accommodation should be provided. But a variety of other conditions have been attached to different orders, e.g. as to weight-lifting, proper supervision, and facilities for transport.

The Women and Young Persons (Employment in Lead Processes) Act was also passed to give effect to one of the Washington conventions. As a matter of fact it made very little difference to British industry; most of the protection was given already by regulations for dangerous trades, and some of it was given by trade union regulations. The second reading of the Bill was the occasion of violent attacks on the principle of international labour legislation from Sir F. Banbury³ and Sir J. D. Rees. The speeches were of little importance and exercised no influence, but they deserve record as parliamentary curiosities.⁴

¹ Report on Employment of Women and Young Persons on the Two Shift System. Cd. 1037.

² Except those already in employment when the Act came into force.

³ Senior Member for the City of London, now Lord Banbury.

⁴ Sir F. Banbury said among other things: "Personally, I do not know what the international labour organization is. I have no faith in the

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The Celluloid and Cinematograph Film Act of 1922, which is administered by the local authorities, places some restrictions on premises used for the manufacture and storage of celluloid additional to those imposed under section 79 of the Factories and Workshops Act.

Two sections of the Workmen's Compensation Act of 1923 come within the category of factory legislation. One of them amends the Notices of Accident Act of 1906,¹ and makes three days' disablement from full earning capacity the basis of notification. The other requires the provision of a First-aid box or cupboard in every factory (but not workshop); and it extends the power of the Home Secretary to issue Welfare Orders² to building and engineering operations as well as to factories.

This brings the tale of factory legislation down to the end of 1924. A Factories Bill of bold and far-reaching character was introduced in that year but did not get further than a first reading.³

League of Nations; I believe it is a body which spends money and does nothing else. . . . I should be very much obliged if the Home Secretary would tell us whether we are to have many more of these Bills, and whether our commerce is to be directed by a hole-and-corner committee consisting of a few people, gathered from God knows where, and sitting in a foreign town? It is quite a new thing, and if this is to be part of the new world, I hope we shall remain in the old."

Sir J. D. Rees said in the course of his speech: "I do resent very much the kind of dictation which results from international labour organizations. We want to cut the canker of internationalism out of all this. Internationalism means the negation of patriotism and the abnegation of everything of which we should be proud. Instead of extending internationalism I long myself to see it abolished completely off the face of the earth." Hansard, 1 November, 1920.

¹ See p. III.

² Under the Police, Factories, etc. (Miscellaneous Provisions) Act of 1916.

³ The Factories Bill of 1924 was a consolidating measure, but it also proposed important changes. One of these was indicated by its title: the term "factories" would have been given to what we call at present factories, workshops, domestic workshops. Provisions of the Bill would have applied to all these, unless there were a distinct specification to the contrary, and in this way many mischievous anomalies would have disappeared. There were extensions of range, the most important being to engineering works, which would include navvying. There was a lighting clause. The cubic space prescribed per person would have been nearly doubled. Elaborate precautions were proposed to minimize accidents. The Bill incorporated the Police, Factories, etc. (Miscellaneous Provisions) Act of 1916, but would have gone considerably further in the direction of statutory welfare. Further references to the Bill will be found in other footnotes.

CHAPTER III.

THE REGULATION OF DANGEROUS TRADES.

THE most important new provision in the Act of 1891 was that giving power to the Home Secretary to regulate dangerous trades. It read as follows :

“ Where the Secretary of State certifies that in his opinion any machinery or process or particular description of manual labour used in a factory or workshop (other than domestic workshop) is dangerous or injurious to health or dangerous to life or limb, either generally or in the case of women, children or any other class of persons, or that the provision for the admission of fresh air is not sufficient, or that the quantity of dust generated or inhaled in any factory or workshop is dangerous or injurious to health, the Chief Factory Inspector may serve on the occupier of the factory or workshop a notice in writing, either proposing such special rules or requiring the adoption of such special measures as appear to the Chief Inspector to be reasonably practicable, and to meet the necessities of the case.”

Previous to 1891 special rules for dangerous trades were either embodied in an Act of Parliament, or else they were drawn up by the employer and submitted to the Home Office for approval. The latter course was allowed by the Act of 1864, but the employers' rules had not proved of much value, and the power was withdrawn in 1878. Under the Act of 1891 the Home Secretary could certify a trade as dangerous, and against this certification there was no appeal. He could then proceed to draw up special rules. These special rules had to be submitted to every employer concerned, and each employer was at liberty to accept them or to refuse acceptance. If he took the latter course, the matter went to public inquiry and to arbitration ; and if agreement were not reached otherwise, the final word

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lay with an umpire chosen by the arbitrators. The special rules had also to be before both Houses of Parliament for forty days.

In 1892 the Home Secretary certified as dangerous the manufacture of white lead, the manufacture of paints and colours and the extraction of arsenic, and the enamelling of iron plates. Departmental Committees were appointed to inquire into a number of industries known or surmised to be unhealthy or dangerous: chemical works, lucifer match works, flax mills and linen factories, and the chief industries concerned with lead. In the case of the chemical works it was found that accidents occurred through insufficient lighting, and the special rules drawn up were the first to make provision as to lighting. In the flax mills and linen factories dust, heat and moisture were found to be responsible for a great deal of phthisis, and some startling statements were made by medical men as to the average length of life of the workers. Special rules were brought into force in 1894.

In July, 1895, a Departmental Committee was appointed to inquire into the conditions of work in twenty-two industries. It was a small and very strong committee. The chairman was Mr. H. J. Tennant, M.P., who, as private secretary to Mr. Asquith, had gained a considerable experience of inquiries of this kind. The other members were Miss May Abraham,¹ one of the first two women factory inspectors, Commander Hamilton Smith, who was also a factory inspector, and Dr. Thomas Oliver.² The work of this Committee lasted four years, during which time three interim reports were issued. In one or two cases an industry was found on inquiry not to be unhealthy or unsafe. In some industries very bad conditions were found. Those who used carbon bi-sulphide in the india-rubber works were found to suffer in some cases from a form of mania as a result of their occupation. Work, dangerous in itself, was carried on in unfavourable conditions; ventilation was bad, and many workers kept food in the workroom and ate it there. Very similar conditions were found in dry-cleaning

¹ Afterwards Mrs. H. J. Tennant.

² Now Sir Thomas Oliver.

works ; girls were said to suffer from giddiness and nausea, and it was stated that those engaged in glove-cleaning had to come out " pretty often " for fresh air, as otherwise the spirit got into their heads and made them " act silly." To the dangers of inhalation was added in this industry the risk of fire. The same combination of perils was found among ship-painters, in considerable measure owing to an increasing use of quick-drying paints, and horrible stories were told of stupefaction in the first instance followed by burnings subsequently.

Another group of dangerous trades were those in which the workers were exposed to metallic dust. Members of the Committee saw women and boys in lithographic works who were literally covered with bronze dust. Some of the employers seemed entirely ignorant of the harmful effects likely to ensue. No absolute or specific disease was discovered, but workers complained of anæmia, constipation, skin eruptions, and other disturbances of health. Far more serious were the conditions in some of the industries in which white lead was used. Attention was also paid to the grinding trades ; the dangers in them were of two kinds, danger from the bursting of grindstones and danger from inhalation of the dust. In the manufacture of aerated waters there was a possibility of the bottles bursting. In some thread mills, and in other works, boys and girls were found engaged in licking labels ; some of them were licking as many as forty to fifty gross a day. It was difficult to demonstrate bad consequences to health, though they were likely enough ; but the practice was so flagrantly disgusting that most of the firms abandoned it voluntarily when their attention was called to it.

Electricity was just beginning to be used on a considerable scale both for lighting and for power, and there had been two or three fatal accidents each year for some years past. The members of the Departmental Committee had no technical knowledge of electricity, and for this part of their work Mr. C. V. Boys, F.R.S., was added to their number. He drew up special rules which the Committee recommended to the Home Office. It is interesting to note,

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since an important point of principle is involved, that the Committee repudiated strongly a suggestion "that where corporations or public bodies carry on a generating supply for the public good, such cases might not be considered to come within the scope of the mischief aimed at."¹ The Committee considered it "equally important to safeguard the lives of the workers, whether they be employed by individuals, urban corporations, or other public bodies."² The Committee also drew attention to the obvious need of a factory inspector with special knowledge of electricity. Five years later the first electrical inspector was appointed.

The Committee made inquiries into the many accidents which occurred on railway sidings within works, and it recommended special rules, most of which were ultimately adopted.³ One of the findings of the Committee was that a wider definition was needed of the term "factory," to include any premises, areas or occupations, whether in the open air or not, in which manual labour is employed for purposes of gain, and which are prescribed by the Secretary of State.⁴ No such general definition has ever been made, but at various times since 1891, as before it, such places as docks, wharves, quays, warehouses, buildings in course of erection, and railway sidings, have been specially enumerated to be regarded as factories.

The first report of the Committee was issued in 1899. Before that date special rules had already been drawn up and accepted for several of the trades upon which report had been made, e.g. the carbon bi-sulphide processes in the manufacture of india-rubber, the tinning of metals, the manufacture of aerated waters. The special rules were seldom as drastic as the recommendations of the Committee, but they entered into considerable detail and they made a very great change in the conditions under which a number of trades were carried on. As each set of special rules had to be notified to and negotiated with every factory or work-

¹ Second Report of the Committee on Dangerous Trades. C. 8522, 1897.

² *Ibid.*

³ In 1905.

⁴ First Interim Report of the Committee on Dangerous Trades. C. 8149, 1896.

shop occupier, proceedings were necessarily slow and laborious.

One of the difficulties of the early inquiries was the lack of reliable statistics. A great improvement was made by the Factory Act of 1895, under which notification of cases of lead, phosphorus, or arsenic poisoning, and of anthrax, became compulsory, and the Home Secretary was given power to extend the list by Order. The duty of notification was laid both upon medical practitioners and upon factory occupiers. The Home Secretary made an order extending the requirement to mercurial poisoning in 1899. No further additions were made to the list until 1915, when toxic jaundice was made notifiable. Two more diseases were added in 1920, chrome ulceration and epitheliomatous ulceration.¹

Between 1891 and 1899 a great deal of work had been done with regard to the dangerous trades. A much greater knowledge had been gained of the kinds of dangers to be combated, and of the methods which were likely to be effective. The industrial world was made familiar with the idea of detailed regulations for particular industries. Work of the same kind has gone on steadily ever since, and whilst new processes are always bringing into existence new dangers, and whilst the progress of knowledge makes possible continual advance in methods, it is scarcely likely that any evils will be found in the future so extensive and so terrible as those which were attacked between 1891 and 1900.

The risks to which industrial workers are exposed in those industries which stand out as specially dangerous, are of many kinds and do not admit of neat classification. Two or three groups can, however, be indicated. There are the poisonings by metallic compounds, e.g. lead poisoning. There are the dusty trades: it may be a metallic dust, or it may be a vegetable dust, e.g. flax; or it may be a non-metallic mineral, notably silica. There are various vapours, such as benzene or carbon bi-sulphide, which have a marked deleterious effect on health. And there are industries with

¹ And in 1925 there have been added poisoning by carbon bi-sulphide, aniline poisoning, chrome benzene poisoning.

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unusually heavy risk of accidents, arising in some cases from the use of particular kinds of machinery and in other cases from the use of highly inflammable substances. And there are other special risks, such as those attendant on the use of electricity. In the following chapters the regulation of the chief dangerous trades is traced in some detail.

In the course of developing the special rules for the various dangerous trades, there came to light one or two defects in the Act of 1891. At the earlier arbitrations the Home Office was represented and the employers were represented, but there was no provision for the representation of the workers. This was remedied by the Act of 1895. The same Act made it clear that it was possible by special rule to limit or to prohibit the employment of particular classes of persons; it was specially desired to exclude women from some of the processes where there was considerable danger of lead poisoning. Very serious difficulties arose from the fact that the Home Office was bound to negotiate each set of special rules with each firm affected by them. This meant an enormous amount of work in serving notices and in negotiation. Many complications arose from the fact that some firms might accept the Home Office proposals, or accept them with modifications, whilst other firms might refuse to accept them. In the latter case they had to go to arbitration, in the course of which they might be further or differently modified. The Home Office, naturally, would not wish to re-open the matter with those firms which had already accepted the original proposals. There might also be firms on which, either from their insignificance or because of special conditions, it did not seem worth while serving notices or going to the trouble of negotiation. The result of this was that there might be in existence simultaneously several different codes for different firms in the same industry. There were, for instance, as late as 1908 four different codes of special rules applying to the Potteries.¹

To remedy this the "dangerous trades" clause of the

¹ There were under Special Rules of 1894, 43 potteries; 1898, 23 potteries; 1901, 3 potteries; 1903, 481 potteries.—Report of Departmental Committee on Use of Lead in Earthenware and China, 1910.

Act of 1891 was replaced in the Act of 1901 by a clause which runs as follows :

“ Where the Secretary of State is satisfied that any manufacture, plant, process or description of manual labour used in factories or workshops is dangerous to life or limb, either generally or in the case of women, children, or any other class of persons, he may certify that manufacture, machinery, plant, process, or description of manual labour to be dangerous, and may make such regulations as appear to him to be reasonably practicable and to meet the necessity of the case.”

The chief difference, not very explicit in the actual wording, is that the Home Secretary can now make regulations for an industry without submitting proposals to every works in it. He gives notice of his intention in the *London Gazette* (or *Edinburgh Gazette*, and till recently the *Dublin Gazette*). In case of objection he must arrange for a public inquiry before a commissioner, whom he appoints. The regulations, as modified by the commissioner, are then laid before both Houses of Parliament for forty days and, unless annulled by resolution, they then become law. It is not necessary, therefore, any longer to serve notice on each firm, nor is it possible to have more than one code in force in an industry.

The detailed codes of regulations which have been developed for the dangerous trades are the greatest achievement in factory legislation of the last thirty years. Many of the industries have been revolutionized in character by them, and are now safe and decent to work in, where a couple of generations ago they were both nauseous and dangerous. Indeed, it is probably true to say that there is more danger to health and to life in some of the trades which are not technically “ dangerous ” than in those which are scheduled as such. The precautions imposed on the dangerous trades vary very much in character, but it will be seen on looking at the list of them that what they do, for the most part, is to impose strict observance of comparatively simple rules of hygiene. They aim at securing plenty of space, plenty of fresh air, cleanliness of clothing and of person, reasonable hours, periodic medical examination and so on. The framing of the regulations for the dangerous trades has helped

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to form ideals for factory life as a whole, and the welfare orders of a later period are little more than an extension to some other occupations of the leading requirements in the regulations for the dangerous trades.

ANALYSIS OF REGULATIONS FOR DANGEROUS TRADES.

I. *List of Regulations.*

1. Manufacture of Felt Hats with Inflammable Solvents.
2. File-cutting by Hand.
3. Manufacture of Electric Accumulators.
4. Docks and Wharves.
5. Self-acting Mules.
6. Sorting, Combing, etc., of Wool and Hair.
7. Spinning and Weaving Flax or Tow.
8. Use of Locomotives and Waggon on Lines and Sidings.
9. Manufacture of Paints and Colours.
10. Heading of Yarn dyed by Lead Compound.
11. Spinning of Hemp and Jute.
12. Use of Horsehair.
13. Casting of Brass.
14. Vitreous Enamelling of Metal and Glass.
15. Use of East Indian Wool
16. Generation, Transformation, Distribution and Use of Electrical Energy.
17. Tinning of Metal Hollow Ware.
18. Grinding of Metals and Racing of Grindstones.
19. Smelting of Materials containing Lead.
20. Bronzing with Dry Metallic Powders in Printing.
21. Manufacture and Decoration of Pottery.
22. Construction and Repair of Ships.
23. Crushing, Grinding and Sieving of Refractory Materials.
24. Manufacture of Certain Compounds of Lead.
25. Manufacture, Manipulation, and Storage of Celluloid.
26. Manufacture of Aerated Waters.
27. Handling of Hides and Skins.
28. Certain Processes in Manufacture of India-rubber.
29. Chemical Works.
30. Wood-working Machinery.

II. *Nature of Precaution Imposed.*

(Numbers refer to preceding list).

Protective clothing	2, 3, 6, 7, 9, 10, 12, 15, 17, 19, 20, 21, 24, 26, 28, 29.
Respirators	7, 11, 15, 18, 23, 24.
Exhaust or other special Ventilation	1, 3, 7, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 28, 29.
Facilities for Washing	2, 6, 9, 10, 12, 13, 14, 17, 19, 20, 21, 24, 27, 28.
Baths	19.
Cloak Rooms	3, 7, 9, 10, 17, 19, 20, 21, 24, 27, 28.
Meal Rooms	6, 9, 10, 12, 17, 19, 21, 24, 27, 28.
Periodic medical exam- inations	3, 9, 10, 14, 17, 19, 21, 24, 28.
Exclusion of Women	3, 9, 13, 19, 21, 28.
Exclusion of Young Persons	3, 4, 8, 9, 10, 12, 14, 17, 19, 21, 28.
First-aid or Ambulance	4, 6, 12, 22, 27, 29.
Special cleaning of floors, etc.	2, 6, 14, 17, 18, 21.
Hygrometrical control	7, 11, 21.
Additional air or floor space	2, 3, 14, 30.
Lighting	4, 8, 14, 22, 29, 30.
Disinfection of Ma- terial	6, 12.
Short Hours	19, 21, 28.
Short Spells	21, 28.
Supply of Milk, Cocoa, etc.	21.
Minimum temperature	11, 30.
Maximum temperature	21.
Works Inspector	21, 22, 25.
Miscellaneous	1, 4, 5, 6, 7, 8, 12, 16, 19, 21, 22, 25, 26, 29, 30.

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NOTIFICATION OF INDUSTRIAL POISONINGS AND INFECTIONS.

(First figure is of all cases : second figure is of fatal cases.)

	Lead.	Mer- cury.	Phos- phorus.	Arsenic.	An- thrax.	Toxic Jaun- dice.	Chromo Ulcera- tion.	Epithelio- matous Ulceration.
1899	1258 ³¹	10	8	—	—	—	—	—
1900	1058 ²⁸	9 ¹	3	22 ³	—	—	—	—
1901	863 ²⁴	18	4	12	—	—	—	—
1902	629 ¹⁴	8	1 ⁸	5	—	—	—	—
1903	614 ¹⁶	8	—	5	—	—	—	—
1904	597 ²⁸	3	1 ¹	5	—	—	—	—
1905	592 ²²	8	3 ¹	1	59 ¹⁸	—	—	—
1906	632 ²⁸	4	—	5	66 ²¹	—	—	—
1907	578 ²²	7	1 ¹	9 ²	58 ²¹	—	—	—
1908	646 ²²	10	1	23 ¹	47 ⁷	—	—	—
1909	553 ²⁰	9	3	4	56 ¹²	—	—	—
1910	505 ²⁸	10	—	7	51 ⁸	—	—	—
1911	669 ²⁷	12	—	10 ¹	64 ¹¹	—	—	—
1912	587 ⁴⁴	17	—	5	47 ⁴	—	—	—
1913	535 ²⁷	14	—	6	70 ⁷	—	—	—
1914	445 ²⁸	10	—	2 ¹	54 ⁷	—	—	—
1915	381 ²¹	6	3	3	50 ⁸	—	—	—
1916	348 ²¹	18	2	—	105 ¹⁶	206 ⁵⁷	—	—
1917	317 ²¹	17	3	30 ⁸	93 ¹³	190 ⁴⁴	—	—
1918	144 ¹¹	9	3	3 ¹	72 ⁸	34 ¹⁰	—	—
1919	207 ²²	7	1	4	57 ⁹	3 ²	—	—
1920	243 ²²	5	—	3	48 ¹¹	—	126	45 ¹
1921	230 ²²	—	—	1	25 ⁴	1 ¹	29	32 ²
1922	247 ²²	6 ¹	—	—	45 ²	3	42	32 ²
1923	337 ²²	4	—	—	46 ²	7 ²	58	58 ⁴
1924	486 ²¹	5	—	6 ¹	43 ⁴	3	45	123 ²⁴

CASES OF LEAD POISONING IN MANUFACTURE OF WHITE AND RED LEAD (see pp. 48-51).

(First figure is of all cases ; second figure is of fatal cases.)

1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.
422 ⁵	377 ⁸	203 ⁷	156 ¹	115 ²	127 ²	100 ¹	114
1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
78 ⁰	91 ²	42 ²	44 ¹	54 ⁸	26 ⁰	36 ²	35 ¹
1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
48 ⁰	33 ¹	28 ⁰	2 ⁰	25 ⁰	28 ⁰	17 ¹	22 ²
1923.	1924.						
37 ⁰	20 ¹						

CHAPTER IV.
THE REGULATION OF THE INDUSTRIES
USING LEAD.

LEAD poisoning is the most widely spread, and one of the most formidable, of the industrial diseases. There appears to have been some knowledge of lead colic as far back as the time of Pliny, but the beginnings of the serious study of plumbism were in the seventeenth and eighteenth centuries. During the whole of the nineteenth century the subject was much discussed, especially in France. As we have already seen, there were the beginnings of special regulation of lead industries in this country in 1864.

Lead and its compounds can be taken into the human body with food, or through the skin,¹ or by breathing dust or fume containing them. Whilst all three methods of absorption are dangerous, it has been established that the third is the most dangerous. Lead is a cumulative poison : it is not eliminated easily from the body, and therefore, whilst there may be no apparent immediate bad effects from exposure to it, it may yet in course of time produce ill-health and possibly death. Pallor, dyspepsia, and colic are among the earlier symptoms, and a blue line along the gums is a warning that the system is absorbing it. Later consequences may be partial or total paralysis (a common form is the affection known as drop-wrist), blindness, or disease of the kidneys. Individuals vary very much in susceptibility ; some are quite tolerant of it, so that they receive no injury in a lifetime spent in conditions which would be most harmful to others. Alcoholism, syphilis

¹ Recent medical opinion regards the danger from absorption through the skin as very slight. See Hope, Hanna, and Stalybrass, *Industrial Hygiene and Medicine*, p. 90.

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and anæmia predispose to it. Young persons and women¹ are markedly susceptible, and it is likely to cause miscarriages of pregnant women.

Lead is used in a surprising variety of processes. The steps taken to guard against its dangers in several of them have been described already. The three industries in which it has been most conspicuously a danger have been the manufacture of white lead (and in less degree of red lead and other compounds of lead), the manufacture of china and earthenware, and painting and plumbing. In regard to the two first, there is a long history of agitation and of regulation. With regard to painting and plumbing the story of attempted regulation is more recent. The history of the attempts to deal with the dangers of these industries will now be told in some detail.

More recently, the manufacture of electric accumulators and the industry of shipbreaking have given grave concern.

The Manufacture of White Lead and of other Lead Compounds.

The manufacture of white lead had long been recognized as a dangerous occupation. In 1882 the Guardians of the Poor of Gateshead protested against the heavy burden imposed upon the ratepayers by the number of disabled persons whom they had to maintain. The detailed regulations of the Act of 1883 in regard to this industry were the models and precursors of the detailed regulations which were made under the Acts of 1891 and 1901 for many other industries. When the Act of 1891 was passed, the manufacture of white lead was one of the first industries to be certified as dangerous. The special rules were strengthened: there was to be a compulsory weekly medical examination of every worker; hot baths were to be provided in future for men as well as for women, and the taking of baths was to be obligatory and not at the option of the worker.

¹ Doubt has been thrown recently upon the alleged special susceptibility of women. See Collis and Greenwood, *The Health of the Industrial Worker*, p. 33.

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There was at this time a considerable Press agitation about the dangers of white-lead manufacture, the *Daily Chronicle* being particularly vehement on the subject. The recent death from lead poisoning of a young woman of seventeen, who had obtained employment in a lead works on a misstatement of age, gave particular point to it. Mr. Henderson, the Superintending Inspector for Scotland and the North of England, in whose district were a number of white-lead works, wrote deprecatingly of the agitation: "It is an exaggerated and highly coloured statement of the case, and contains just a sufficiency of truth in it to save it from condemnation as a piece of fiction." He pointed to the very considerable improvement since 1883; and he pointed out also that much of the illness was due not so much to the poisonous nature of the material as to the habits and general mode of life of the workers. Many of these were casual labourers to whom employment at the lead works was, like employment at the docks, a last resort in bad times. Wages were low: men received four shillings a day, women half a crown a day or less. Some were of bad habits; many were ill-fed, ill-housed, and insufficiently clad. Naturally they fell easy victims. It would seem clear from this, and from a good many other accounts, that the trouble in the lead works was not only industrial poisoning but also semi-starvation. Lead and poverty were a deadly combination. At this period, prior to workmen's compensation for industrial disease, and prior also to health or unemployment insurance, the wretched worker who contracted lead poisoning was faced with a terrible dilemma. To go on with the work was to court death, but to give up the work was to face starvation for oneself and for one's dependents. Many of them concealed the onset of disease as long as they could, and, if they were suspended or dismissed from one lead works, would seek to be employed in another lead works under an assumed name. The doctors also, who were aware of the hardships of unemployment, hesitated to state that a worker was suffering from lead poisoning, if they could avoid doing so.

A Departmental Committee was appointed, with Mr.

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Henderson as chairman, to inquire into the manufacture of lead and lead compounds. Some very terrible evidence was given, which certainly showed that agitation had not been superfluous. Dr. Forbes, of the Shoreditch Infirmary, gave evidence of cases where white-lead workers had developed acute mania, and had shown "a great tendency to snap and to bite those close at hand, tearing their pillows and bedclothes."¹ Evidence was given that sulphate of lead was much less dangerous than the carbonate. One member of the Committee suggested that there should be a compulsory experimental trial of substitutes for white lead, but the Committee decided that "the matter is much better left to be settled by competition in the open market."² It appeared to be established that zinc compounds provided a good substitute for paints used in interior decorations, but the weight of opinion was that they were not so lasting for exterior work. The Committee thought that no adequate substitute had been found as yet for white lead.

"The Committee, after careful deliberation, have come to the conclusion that the Dutch process might, by suitable precautions, be rendered sufficiently free from danger to warrant their recommending its continuance, guarded by such regulation as the inquiry has suggested, rather than its replacement by other processes which, though less dangerous, produce an article for which there is no constant demand either at home or abroad."³

In coming to this conclusion the Committee was much influenced by fear of foreign competition. "They are aware that if the manufacture of white lead were absolutely prohibited in the United Kingdom scarcely a ton less would be used in these islands."⁴

The red-lead works, though less dangerous, should be put, in the Committee's judgment, under the same special rules as white-lead works. Lead smelting was not very dangerous, but only adult males should be employed. Blue-lead manufacture was not considered risky enough to warrant

¹ Report of Departmental Committee on the Various Lead Industries. C. 7239 of 1894.

² *Ibid.*

³ *Ibid.*

⁴ C. 7239.

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regulation, but special rules were needed for the manufacture of yellow lead (chromate of lead).

Special rules were drawn up in accordance with these recommendations. As to white-lead works, the amended special rules (issued in April, 1894) did not differ much in their main lines from the old rules, but they went into great detail as to the enforcement of scrupulous cleanliness. The compulsory notification of every case of lead poisoning was, however, a new feature of importance; and it was made a penal offence to seek employment in a false name or under any false pretence. The special rules for lead smelting contained a provision that no person should remain at work in a flue for more than two hours at a time.

In 1899, owing to the large number of cases of lead poisoning which were still occurring, new special rules were prepared. They were accepted by the manufacturers, after conference, without recourse to arbitration. The chief changes made were the exclusion of women from the most dangerous processes, and the imposition of a number of structural conditions, chiefly in regard to the ventilation of stoves. The industry was carried on under these special rules until they were converted, with no great change, into regulations in 1921. The new code applied to a few works not previously included, but there were no drastic modifications or additions. A glance at the statistics on p. 46 will show that an enormous change for the better has been wrought in lead works in the last thirty years. It remains, however, an industry to be watched carefully.

The Potteries.

The condition of the potteries had been the subject of agitation and of violent controversy since 1842 at least. Under the Act of 1864 employers were encouraged to frame and to enforce special rules, but these rules did not amount to much. Under the Act of 1878 the factory inspector had power to order the use of a fan to remove dust; women, young persons, and children were excluded from workrooms at mealtimes. The employers' special rules fell into disuse

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between 1878 and 1891. It was originally intended by the Government that the Act of 1891 should not apply to the potteries, but as the result of strong protest they were included. In 1892 the subject was a good deal before the public. Dr. J. T. Arlidge, certifying surgeon for Stoke-on-Trent, had just published an exhaustive work on "*The Hygiene, Diseases and Mortality of Occupations*," in which he made out a heavy case against the potteries. Mr. W. D. Cramp, Superintending Inspector of Factories, sent in a special report in which he referred to this book, and pointed out that the dangers to health arose from the inhalation of flint dust, from lead poisoning in certain processes, and from the heat and humidity of potters' shops. With regard to lead poisoning he wrote: "I very much fear that there is not much improvement in this matter of late years." He raised the question of the feasibility of using leadless glazes or fritted lead.¹ Quite a number of manufacturers had experimented with both, and had found the results satisfactory, but there was an immense amount of conservatism among potters. One of the principal manufacturers objected to both leadless glaze and fritted lead: to the latter on the score of cost. "Competition with German ware was very keen, another 5 per cent extra cost would close the works."² As there was little likelihood of any use on a large scale of the suggested substitutes for raw lead, Mr. Cramp proposed that there should be special rules, whilst at the same time the Home Office should endeavour by circularizing the employers to stimulate them to experiment.

There was a great opposition from the manufacturers to the proposed special rules, and the Home Office showed in face of it a weakness which they regretted later.³ Concessions were made freely: it was agreed that overalls need

¹ Fritted lead is lead heated with silica; the particles are then larger in size and less soluble than in the original form.

² C. 7240 of 1893.

³ "As you are aware, we were much disappointed on finding that when the rules came to be enforced, we had not been sufficiently careful to specify exactly what we required; this was especially the case with regard to washing conveniences and ventilation." Mr. Walmsley, H.M.I., in Annual Report for 1898. Cd. 27 of 1900.

only be supplied to women, not to men also as originally proposed ; and mechanical exhaust was not insisted upon, except for a comparatively few processes. The special rules were also weakened by a plentiful sprinkling of them with "where practicable." The employers admitted, however, a considerable amount of lead poisoning and they promised to try to reduce it.

In 1898 a group of persons connected with the Hanley Labour Church commenced a fresh agitation, quickly taken up by the London Press. The Home Office commissioned Professor Thorpe and Dr. Oliver to make an inquiry into the use of lead in pottery. Meanwhile, without waiting for the result of a somewhat lengthy investigation, the Home Office proposed new special rules. Children were to be excluded from the dangerous processes ; all women and young persons were to be examined medically once a month ; accommodation was to be provided for taking meals ; and exhaust fans were to be installed.

There was a tremendous uproar. *The Times* sent down a special correspondent who wrote that the evils were much exaggerated ; that figures quoted were unreliable, since doctors had "lead on the brain" ; that a socialistic agitation was being "exploited in the usual manner by a section of the London Press." He had stories to tell of sentimental women who came down from London hunting for emaciated babies for display purposes. But he had to admit that a very serious evil existed and that the proposed special rules were for the most part reasonable.¹

As the employers refused to accept the special rules, a public inquiry was held at Stoke in October, 1898, and the umpire, Mr. John S. Dugdale, Q.C., allowed some concessions. Wash-hand basins were allowed instead of lavatory basins ; alternatives to exhaust fans were permitted, and there could be an appeal to the Chief Inspector of Factories as to the necessity for a meal-room. There were one or two other minor variations from the proposals of the Home Office. Subject to these concessions, the new special rules came into force.

¹ *The Times*, 27 September, 8 and 18 October, 1898.

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Professor Thorpe and Dr. Oliver reported in February, 1899.¹ They had made inquiries in the potteries to find what steps had been taken since 1893 to deal with an admitted mischief. "All the evidence we were able to collect forced us to the conclusion that very little of an effective character had been even attempted."² About 4,700 persons were said to be working "in the lead," and 1,085 cases of plumbism had been reported in three years. Professor Thorpe and Dr. Oliver were of opinion, as the result of inquiries made both in this country and on the Continent, that a large amount of earthenware could be satisfactorily glazed without any use of lead; and that where lead must be used, it could be in a form not easily soluble and therefore not so likely to be absorbed. They recommended the prohibition of the use of raw lead, the exclusion of women and young persons from works where any lead glaze was used, and the medical examinations of adult males as well as of other workers. They also suggested that a good many of the potteries needed condemning altogether on account of their age and dilapidations.

A copy of their report was sent to every manufacturer together with an intimation from the Home Secretary that he proposed to take action upon it. A committee of manufacturers expressed willingness to frit all lead, but strongly controverted the proposition that most earthenware could be made satisfactorily without using lead at all. They were prepared for the medical examination of all workers. After a considerable amount of negotiation, the Home Secretary intimated his intention of proposing new special rules forbidding the use of lead glazes of more than two per-cent solubility. To this the employers took strong objection. The new rules came before Lord James of Hereford as umpire in December, 1901. He gave his decision on one or two questions of minor importance and then adjourned the hearing for two years in order that the manufacturers might experiment with low solubility glazes, and he also recommended them to work out a voluntary

¹ Report on the Employment of Lead in Pottery. C. 9207 of 1899.

² Report on the Employment of Lead in Pottery. C. 9207 of 1899, p. 6.

scheme for compensation for sufferers from lead poisoning. A scheme was started, but in June, 1903, only ninety Staffordshire firms out of a total of 364 had joined in it.¹ In November of that year Lord James gave his award. Rules were to be relaxed where lead glazes of less than five per cent solubility were used; in other cases there were to be new and more stringent regulations, and workers certified as suffering from lead poisoning were to be entitled to compensation. This last provision was a remarkable piece of non-parliamentary legislation, and it did a good deal to prepare the way for the later scheduling of industrial diseases under the Workmen's Compensation Act.

The use of leadless glazes, or of glazes of low solubility, did not make much headway, the employers preferring to submit to the more stringent regulations. The whole question was reopened in 1908, largely owing to the untiring energy and persistence of the Women's Trade Union League. A Departmental Committee was appointed in 1910. It was pointed out that the number of cases of lead poisoning had remained almost stationary from 1901 to 1908. Evidence was again produced to show that most kinds of china and earthenware could be made satisfactorily without any use of lead.² The Committee discussed the advisability of giving to the Home Secretary power to draw up a schedule of articles in the manufacture of which the use of lead was forbidden. The manufacturers were strongly opposed to this, and also to any regulation restricting them to the use of glazes of low solubility; and they produced a good deal of evidence of unsuccessful experiment. The Committee decided that the suggested schedule was impracticable, the one dissentient being Miss Gertrude Tuckwell, who signed a minority report. Nor did the Committee recommend that manufacturers should be confined to the use of glazes of low solubility; it proposed as an alternative new and very stringent regulations. Women and young persons, as

¹ Speech of Sir Charles Dilke on Home Office vote, *The Times*, 26 June, 1903.

² "I venture to say that nine-tenths of the articles which are in the houses for ordinary use could be made with leadless glaze." Evidence of Dr. Thorpe. Cd. 5385. Q. 112242.

well as children, were to be excluded from the most dangerous processes; the workers were to be provided with a store-room for their food; there must be at least one lavatory basin to every five persons; and it was recommended that in each works there should be one person appointed whose duty it was to see that the regulations were properly kept. The regulations, with very slight modifications, were agreed to by the manufacturers in November, 1912.

Lead poisoning is only one of the dangers attaching to the manufacture of pottery, and a good deal of the time of the Committee of 1910 was given to a consideration of other evils requiring remedying. Of these the chief was potter's rot or potter's asthma, due to the inhalation of small particles of flint. There were also questions of excessive temperature and of excessive humidity in certain processes, and of the carrying of harmful weights by women and young persons. Reference to the steps taken with regard to these conditions will be found elsewhere.

There has been no further change in the regulations since 1913. As eleven years have passed the question may well be asked whether the present regulations have been effective in stopping or reducing greatly the amount of lead poisoning. A glance at the figures is not too reassuring. Whilst the total number of cases reported has diminished considerably, the number of fatal cases was as great in the years 1919-21 as in the years 1912-14. Something may be allowed for a stricter attribution to plumbism of deaths which were formerly attributed merely to Bright's disease, and it is suggested also that a certain number of cases may be those of older workers whose systems had been clogged with lead before the new regulations came into force, and whose health gives way with the oncoming of age. But when all allowance has been made, it seems clear that lead poisoning in the potteries is still a very serious evil; and the time would appear to be ripe for a new inquiry. In particular, the question may well be asked whether Miss Gertrude Tuckwell was not right when, in 1910, she stood out for powers for the Home Office to

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schedule articles in the manufacture of which lead was not to be used.

CASES OF LEAD POISONING IN THE MANUFACTURE OF CHINA AND EARTHENWARE.

(Large figures are of all reported cases, small figures of fatal cases.)

1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
200 ⁸	106 ⁵	87 ⁴	97 ³	106 ⁴	84 ³	107 ⁴	103 ⁶	117 ¹²
1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	
58 ⁵	77 ¹¹	92 ⁶	80 ¹⁴	62 ¹¹	27 ⁶	26 ⁵	23 ⁷	
1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	
15 ⁴	11 ¹	21 ⁸	24 ¹³	34 ¹¹	42 ¹⁷	44 ¹¹	47 ¹⁸	

The Painting Trades.

In 1911 two Departmental Committees were appointed with the same chairman, Sir Ernest Hatch, and with the same non-trade members, to report on the dangers of lead poisoning in coach painting and in the painting of buildings. Their proceedings were interrupted by the War, and they did not report until 1920 and 1915 respectively.

Statistics were produced by the Home Office to show the heavy incidence of plumbism among coach-painters.

LEAD POISONING IN THE COACH-PAINTING INDUSTRY, 1900-13.⁶

(Second numbers are those of fatal cases.)

1900	. . . . .	70 ⁵	1907*	. . . . .	70 ³
1901	. . . . .	65 ⁴	1908	. . . . .	70 ³
1902	. . . . .	63 ¹	1909	. . . . .	95 ⁶
1903	. . . . .	74 ⁵	1910	. . . . .	70 ⁴
1904	. . . . .	49 ⁴	1911	. . . . .	104 ⁵
1905	. . . . .	56 ³	1912	. . . . .	84 ⁷
1906	. . . . .	85 ⁷	1913	. . . . .	71 ²

*From this year onwards the figures for perambulator painters are included.

Many of the employers expressed great surprise when they learned the extent of the mischief. Dry sandpapering was said to be the most dangerous process. There was a good deal of evidence from representatives of large firms that the use of leadless paints was satisfactory and not more expensive; and a number of employers, as well as the representatives of the operatives, were prepared for the prohibition of white lead. There was opposition, of course, and the proceedings were enlivened by the evidence of one die-hard manufacturer who denied everything and objected to everything. The general tone was reasonable, and the final recommendation of the Committee was that after three years from January, 1920, a regulation should be made prohibiting the use in all coach-building works of any painting, filling, stopping or similar material containing more than five per cent of its dry weight of a soluble lead compound. Exemptions were suggested for special kinds of painting, such as heraldic work and fine lining.¹

The Painting of Buildings.

The Departmental Committee was very much hampered by the lack of reliable figures; lead poisoning among house-painters is only reported voluntarily, and in the case of Scotland and of Ireland there were no figures previous to 1910. In England and Wales, during the years 1900-9, 1,973 cases were reported, and of these 387 were fatal. The non-fatal cases reported were probably a mere fraction of the whole. There was no regulation of the trade, and it did not fall within the scope of the Factory Acts, though its dangers were obviously at least as great as those of many regulated industries. The deaths from lead poisoning among house-painters and plumbers were actually more numerous than those among all factory workers taken together.

¹ There has been delay, and draft regulations are only now (December, 1925) being issued.

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DEATHS FROM LEAD POISONING AMONG HOUSE PAINTERS AND PLUMBERS COMPARED WITH THOSE IN OCCUPATIONS UNDER THE FACTORY ACTS.

	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13
House Painters	31	30	26	32	30	19	30	32	29	34	31	35	37	31
House Plumbers	11	11	6	7	9	9	6	7	15	13	6	13	10	6
All Occupations under the Fac- tory Acts . .	38	34	14	19	26	23	33	26	32	30	38	37	44	27

The President of the National Association of Master House Painters and Decorators, who gave evidence, was unwilling to admit that there was any serious danger or that anything could be done. Figures were also produced to show that the occupation of house-painter was a healthy one. Several employers were emphatic that if they had to choose between submitting to elaborate regulations or giving up the use of white lead they would prefer the latter. The difficulties there would be in enforcing regulations were obviously great. The Committee accordingly recommended that a law should be introduced prohibiting the use of any paint containing more than five per cent of its dry weight of a soluble lead compound. The one dissentient, an employer, recommended regulations for five years and research in the meanwhile.¹

Lead Poisoning in Other Industries.

It is not proposed to tell in detail the story of the regulation of the large number of other industries in which workers are exposed to the risk of lead poisoning: file-cutting, the manufacture of india-rubber, the heading of yarn, and a few other industries. Very similar precautions to those imposed on the white lead works and on the potteries have been imposed in most cases, especially regulations for cleanliness, for periodical examinations, and for the exclusion of women and young persons from the most dangerous processes.

¹ The matter has been taken up since by the International Labour Organization. See p. 144.

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One of the worst of the industries was the file-cutting (then done almost entirely by hand) in Sheffield. Attention had been drawn to its dangers as long ago as 1865 by Dr. J. C. Hall, senior physician to the Sheffield Public Hospital. The files were cut by chisel strokes on a lead bed; the greater part of the work was done by "little masters" in badly kept workshops. The habits of the file-cutters intensified the evil; they would lick their hands in order to grasp the chisel better, their food was often kept in the dusty workroom and eaten with unwashed hands, their clothes became full of the dust which was absorbed into the system. In these circumstances it was not surprising that there was a large amount of lead poisoning, which showed itself in anæmia and in colic, in paralysed wrists, and sometimes in blindness or in death. The Medical Officer of Health for Sheffield stated in 1903 that ninety-one deaths from plumbism had occurred in Sheffield in the past twelve years, and that fifty-six of these were deaths of file-cutters.¹ Hand file-cutting was placed under regulation in 1903 after strenuous opposition by practically all the trade. The chief difference made was in the matter of overcrowding in the workshops: a minimum distance of three feet was imposed between the stocks at which the workers sat, and this necessitated alteration for at least three-quarters of the existing stocks.²

Recent Developments.

In the last year or two the lead poisoning figures have been leaping up in two industries, ship-breaking and the manufacture of electrical accumulators. In the former industry the use of the oxy-acetylene blowpipe is mainly responsible, and as most of the work is done in the open air the device of exhaust ventilation is hard to apply; nor has any satisfactory respirator been found. The manufacture of electrical accumulators has expanded enormously with the expansion of the motor-car industry and with the

¹ Report on File-cutting by Hand. Cd. 1658 of 1903.

² Cd. 1658.

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demand for wireless sets. Fortunately in both these industries, whilst there have been many cases of lead poisoning, the majority so far have been slight, though if the mischief were allowed to go on unchecked¹ there would undoubtedly be many deaths later on, when men's systems had been impregnated.

NUMBER OF CASES IN 1924.

Shipbreaking 131.¹

Manufacture of Electrical Accumulators 101.⁰

General Effect of Regulations upon Lead Poisoning.

The success which has attended the endeavours to deal with the evil of lead poisoning is attested by the case figures. In 1899, 1,258 cases of lead poisoning were reported to the Home Office; in 1922 there were 247. The number of fatal cases has not diminished to anything like the same extent: there were 31 fatalities reported in 1899 and 26 fatalities reported in 1922. By 1924 the number had again climbed to 32. It would seem that while the risks of the less dangerous processes have been immensely reduced, there remains a hard core of specially dangerous work, which is not to any great extent affected by regulation. It looks as if the way of substitution of other materials for lead ought to be explored afresh.

¹ New Regulations for the Manufacture of Electrical Accumulators came into force in March, 1925.

CHAPTER V.
THE REGULATION OF OTHER TRADES
DANGEROUS TO HEALTH.

Phosphorus Poisoning.

PHOSPHORUS poisoning has had a special notoriety among industrial risks, because of the very horrible nature of the complaint—necrosis of the jawbone or “phossy jaw”—to which it gives rise.

There had been a Government report on its dangers as far back as 1845: there was a second report in 1862. Nothing was done, however, until the Act of 1891 was passed, when lucifer-match making was promptly certified as a dangerous trade. Special rules were drawn up, but in the absence of any strong public opinion they could not be of great stringency: mechanical ventilation and the provision of facilities for washing were the chief precautions imposed. In view of the known fact that a bad condition of the teeth made the onset of phossy jaw more likely, manufacturers were ordered to supply their workers with free dental treatment if they asked for it. But a suggestion that there should be compulsory medical examination was not accepted.

In 1898 a coroner's inquest brought to light the fact that one of the largest firms of manufacturers of matches had been guilty of systematic concealment of cases of phosphorus poisoning, and that it was not the only firm behaving so. There was considerable discussion in Parliament and some imputation that the factory inspectors had been neglectful of their duties. As a consequence of these revelations a Departmental Committee was set up

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to inquire into the use of phosphorus in the manufacture of matches.

By this time experiments were being made in this and in other countries in the manufacture of matches without the use of white phosphorus. It was well established that red phosphorus did not produce necrosis. The question was raised whether the use of white phosphorus should be prohibited or whether it would be sufficient to have more stringent regulations. It was widely believed, both at home and abroad, that if workers were selected who had good health and good teeth, and if proper precautions were taken, phosphorus necrosis could be reduced to negligible proportions. New regulations were accordingly drawn up in 1900, chief of the innovations being a compulsory dental examination every quarter.

In 1906 the question of prohibiting the use of white phosphorus was discussed at the International Labour Conference at Berne. The British Government refused assent, partly on the ground that other manufacturing countries were refusing assent, and partly because it was believed that the regulations of the year 1900 had "had the effect of almost suppressing the disease in England."¹ Colour was lent to this view by the fact that no case of phosphorus poisoning was notified in 1906. But this optimism received a shock in the following year, when a fatal case occurred at a match factory in Gloucester. The Home Office issued a fresh report² on the subject which was of a complacency scarcely justified in the circumstances. Workers were found with their hands smeared with phosphorus paste in quantities likely to be a source of danger. Some slight strengthening of the regulations was proposed: use of gloves and a prohibition of the use of tobacco. An "effective remedy" was confidently looked for in the use of automatic machinery and of exhaust ventilation, and the report deprecated the prohibition of the use of white phosphorus as unnecessary and likely to cause loss of trade and unemployment.

¹ Memorandum on the International Conference on Labour Regulations, Cd. 3271 of 1906.

² Cd. 3373 of 1907.

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This report was presented in February, 1907. But next year the British Government repented of its attitude at the Berne Conference and the White Phosphorus Matches Prohibition Act was passed.

In view of similar controversies as to the use of lead in pottery and in painting, a special interest attaches to the story of official clinging to the method of regulation in spite of repeated disillusionment as to its efficacy. It should be noted also how smoothly prohibition worked when it was actually tried.

Arsenic. Mercury.

Both these dangerous substances are used in a considerable variety of processes, which do not however employ a great number of persons. Arsenical poisoning occurs sometimes in the manufacture of sheep-dip, in some forms of Turkey-red dyeing, and in bronzing. Mercurial poisoning occurs among scientific instrument makers, silverers, and furriers. The use of arsenic and mercury is regulated for the most part by s. 74 (provision of mechanical ventilation), s. 75 (provision of washing facilities, exclusion from workroom at mealtimes) and s. 77 (non-employment of young persons and children). These are sections which bring down from earlier Acts such special legislation for dangerous trades as existed prior to 1895.

Anthrax.

Anthrax is one of the most deadly of the industrial diseases. It is primarily a disease of cattle, widespread and long known. It is caused by a bacillus or spore of a bacillus ; and it is most commonly transmitted to man by the handling of hides, wool, or hair of animals which have died of the disease. Infection may take place by inhalation of dust, or through some abrasion of the skin, or less commonly by eating contaminated food. The disease has two chief forms in man, cutaneous and internal. In the former case there is a malignant pustule, which ought to be a sufficient warning in any area or occupation where the risk

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is known ; in the latter case the disease resembles inflammation of the lungs or, less commonly, inflammation of the intestines. Both forms are very dangerous, and the sufferer may die in from three to five days. The second form is difficult to diagnose and is almost invariably fatal. Malignant pustules are best treated by complete excision ; the internal form of anthrax may be cured by inoculation with Sclavo's serum, if it is taken in hand early enough.

The classes of workers mainly affected are agricultural workers, butchers and knackers, and those who handle hides, hair or wool. The first three classes of workers do not come under the protection of the Factory Acts, and we are not concerned in this book with the measures taken with regard to them. The Factory Department of the Home Office is mainly brought into contact with anthrax as an industrial disease in the wool-combing and wool-sorting industries of Bradford and the other West Riding of Yorkshire towns, and in the handling of hides at docks and at tanneries.

Wool-sorters' disease was known in England as far back as 1847 ; and in 1879 Dr. J. H. Bell of Bradford proved its identity with anthrax. In 1880, following on a recommendation of a coroner's jury, a committee representing employers and workpeople and the Factory Department of the Home Office drew up a code of voluntary rules. These were revised in 1884. In 1895 the Home Secretary appointed a Departmental Committee on Conditions of work in Wool-sorting and other kindred trades. An interim report was issued in 1896 and special rules were made for wool-sorting. Wool or hair of suspect origin was to be opened by skilled men only, and it was either to be steeped in water or else opened over a screen with a strong exhaust to remove dust. Various provisions for the cleanliness and welfare of the workers were attached : there was to be a supply of protective clothing, accommodation for washing and for meals ; and men with cut or sore hands were to be suspended from work. It was not felt at the time that any special rules were needed for wool-combing. But cases of anthrax began to be observed among wool-

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combers, and in 1899 the Bradford Chamber of Commerce and the Bradford District Trades and Labour Council jointly applied to the Home Office to have wool-combing certified a dangerous trade and to have special rules established. A code was issued in 1901, similar in nature to that for wool-sorting. In 1903, again on the initiative of all parties concerned in the industry, the Home Office revised the codes, and new regulations came into force in 1905. In the same year there was established in Bradford an Anthrax Investigation Board, a voluntary body which has done extremely valuable work.

The hides, wool and hair which are most dangerous are those which come from Central Asia, where anthrax is very common as a cattle plague, and where few precautions are observed as to the disposal of the carcasses of diseased animals. Infection rarely comes from Australian or New Zealand fleeces. It was supposed for many years that East Indian wools were innocuous; but a number of suspicious cases were observed, and in 1906 the Home Office sent a circular letter¹ to all users of East Indian wools proposing the extension to them of the regulations already in force in regard to Persian wools and Van mohair. A conference was held at the Home Office. The manufacturers were ready to accept regulations on the ground that the processes were dusty, but they denied that cases of anthrax occurred. The Home Office was not in a position to prove absolutely that they did, and the regulations were drawn up therefore as for a dusty occupation. Later research by the Anthrax Investigation Board placed beyond dispute the infectious nature of some of the East Indian wools.

The handling of foreign hides and skins was certified as dangerous in 1898. Special rules were proposed in December of that year; they met with a great deal of opposition. The Home Office proposed the wearing of "high-necked, long-sleeved overgarments, fitting closely at the wrists." It was objected that these were cumbrous and that the labourers, many of whom were casual labourers,

¹ See Report of Chief Inspector of Factories, 1906, p. 330.

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would not wear them. Objection was taken also to the inclusion of wet salted hides as dangerous material. On both points the Home Office gave way. The special rules, as established, were few and simple. There was to be accommodation for the storage of the workmen's food and of the clothing which they were not actually wearing; there was to be provision of water,¹ soap and nail brushes. Dressings for cuts and other slight wounds were to be kept in readiness: and a notice as to the risk of anthrax was to be displayed. These special rules came into force in 1902.

No substantial diminution in the number of cases of anthrax followed. In 1913 another Departmental Committee on Anthrax was appointed. It reported in August, 1918.² Its recommendations, which were agreed to by all the members, were of a drastic nature: the Committee came to the conclusion that the dangers of anthrax could not be dealt with adequately³ in factories or by regulations under the Factory Act, but that all materials scheduled as dangerous should be disinfected either at the port from which they were shipped or at the port of entry. They proposed the erection of disinfection stations at Karachi, Bombay, Basra and Cairo, and in this country at Liverpool, the cost of disinfection to be met by a charge levied on all materials of suspect origin.

A Prevention of Anthrax Bill was accordingly introduced in 1919, and it passed into law without opposition. It gave power to exclude entirely by Order in Council⁴ material suspected of infection, or alternatively to allow its entry at specified ports only and on condition of disinfection at those ports. A disinfection station has been equipped at Liverpool.

It may be that ultimately this action, and perhaps international action, will put an end entirely to the danger of anthrax infection, but there are many difficulties to be

¹ "Water," not hot water, be it noted.

² Cd. 9171.

³ Complete disinfection is a very difficult matter because of the tenacity of life of the anthrax spore. Cases have occurred where operatives have contracted the disease after using hair which had been boiled for some hours in water to which carbolic acid had been added. See Report of Chief Inspector of Factories, 1902.

⁴ An Order in Council was issued in 1921.

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overcome. In the meantime the various regulations under section 79 of the Factory Act remain in force. Even if the danger of anthrax should disappear, wool-sorting and the handling of hides would remain dusty occupations, and some welfare provisions would be very desirable.

When we compare the history of the attempts to deal with anthrax, especially in the woollen industry, with the history of the attempts to deal with industrial disease in other industries, we cannot fail to be impressed by the initiative shown by the industry itself. All sections concerned have demonstrated a real desire to co-operate for the elimination of the evil and a real willingness to submit to regulations for that end. It is not common in the history of industrial legislation to find a Chamber of Commerce soliciting the Home Office to certify the staple trade of its district as dangerous and asking for its regulation. It is much to the credit of Bradford that its Chamber of Commerce and its Trade Council were so alive to the dangers of the woollen industry. Something may perhaps be due to the nature of the disease: the rapid striking down of a strong man is more impressive than the gradual undermining of health which is the characteristic evil of some other dangerous trades. Something, too, must be attributed to the fact that the woollen industry is well organized, and that from an early date the operatives had means of conference with the employers and with the Home Office.

The Grinding Trades.

The unhealthiness of the Grinding Trades has long been realized, and the shortness of life of many of the Sheffield grinders was notorious. The particular danger is inhalation of silica dust, which causes a fibrosis of the lungs, often preparing the way for tubercular phthisis. It was stated in 1908 that the mortality from phthisis in the grinding trades was about six times above the average for all trades.¹ In the case of the Sheffield cutlery trade, conditions were made much worse by the fact that a great deal of the trade

¹ Report on Draft Regulations for the Grinding of Metals and Racing of Grindstones, Cd. 4913 of 1909.

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was in the hands of small men, the famous "little masters," who worked themselves with one or two assistants in workshops which were (and still are) often cramped, dark and insanitary. When Dr. Harold Scurfield, the vigorous Medical Officer of Health for Sheffield, who had done so much to awaken the citizens of Sheffield to the dangers of the grinding trades, visited Solingen in 1908, he found that the conditions in its corresponding industry were a great deal better than those in our country. Provision of lavatory basins, and of a supply of hot and cold water, was compulsory; it was compulsory also to supply storage for clothing. The death rate among German cutlers was said to be only one-third of that among British cutlers.¹

In October, 1908, the Home Secretary certified the grinding of metals and racing² of grindstones to be a dangerous trade. After conference with the Master Cutlers and others in Sheffield draft regulations were issued, and when objection was taken to them, a public inquiry was held. In Sheffield, where the danger was acknowledged and the need for regulation was admitted, a few small modifications were asked for, and agreement was easily reached. At Birmingham, where conditions were by no means so bad, the opposition was greater. The regulations were, however, imposed. The requirement of exhaust ventilation was the most important of them; there were also provisions intended to ensure the cleanliness of the workroom.

These regulations applied to the light grinding trades only, and even in them they did not apply to wet grinding which was supposed to be innocuous. A fresh inquiry of wider scope was begun during the War, and a very able and detailed report³ was presented in 1923. It was now proved that wet grinding was not harmless, as had been supposed. The existence of invisible dust in dangerous quantity was established by the use of Owens' Dust Counter. The extremely fine subdivision of the dust made its inhala-

¹ Hansard, 5 May, 1908.

² Racing or rasing a grindstone is making the surface rough so as to bite the metal.

³ Report on the Grinding of Metals and Cleaning of Castings. E. L. Macklin and E. L. Middleton. Home Office, 1923.

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tion the more dangerous. A medical examination showed that pulmonary fibrosis was present in the great majority of wet hand-grinders of any length of time in the trade. It was also found that the regulations established in 1909 for dry grinding were very indifferently observed. Exhaust ventilation apparatus was seldom working properly, and many of the grinders did not take the slightest interest in it. The dirtiness and unsuitability of many of the work-rooms was again remarked. In one case the height of the room was only eight feet.

New regulations are suggested for the cutlery and edge-tool trades. The requirement of exhaust appliances would be extended to wet as well as to dry grinding. There would be regulations as to height of room and size of window, and as to the provision of suitable lavatory and cloak-room accommodation. Similar regulations are suggested for the heavy grinding trades. These regulations have not yet been issued in draft form; they would entail considerable expense, and a good deal of opposition may be expected.

One great hope for the future lies in the growing use of carborundum and similar artificial stones in place of natural stone. But, owing to patents, the artificial stones are at present dearer, at least in initial cost, and there are also some technical difficulties to be overcome before they can supersede gritstone or sandstone for all processes. It may be possible in the future to prohibit the use of the natural stone; grinding with carborundum and similar synthetic stones is not attended with any danger from silicious dust.

But nothing could make a great many of the existing Sheffield grinding hulls fit places to work in. They need pulling down and replacing by up-to-date premises; and if in the process it was necessary to re-organize the industry, it would probably be in many ways beneficial.

The Manipulation of Vegetable Fibres.

Dust, damp and heat are the chief perils to health in the industries concerned with the spinning and weaving of vegetable fibres.

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(a) COTTON CLOTH FACTORIES.—The injection of steam seems to have become common in this country about 1872. Objection was soon taken to it by the operatives, and in 1882 the Trades Union Congress commenced an agitation on the subject. Dr. Bridges and Mr. E. B. Osborn made an inquiry for the Home Office, but they appear to have thought that no drastic action was needed. In 1887 Dr. Stephenson, Medical Officer of Health for Blackburn, issued a report which caused a good deal of alarm. The Health Committee of the municipality of Blackburn conducted an inquiry, and, following on this, a Cotton Cloth Factories Bill was introduced in Parliament as a private member's Bill. It became law in 1889. It regulated temperature and humidity and it ordered the reading of wet and dry bulb thermometers three times a day. In 1897 a Departmental Committee, which inquired into the working of the Cotton Cloth Factories Act, found general agreement that its effect had been beneficial.¹ The Committee did not recommend any alteration of the permitted limits of humidification, but they thought it important that only pure water should be used for injection. They also thought that ventilation should be improved, and that in all new weaving sheds, provision of cloak-rooms should be compulsory. Effect was given to these recommendations by an amending Act of 1897.

In 1906 there was a fresh agitation of operatives for the abolition of all steaming, and a Departmental Committee was appointed which reported in 1907² and in 1911.³ A number of comparatively small changes were recommended, tightening up the regulations, and effect was given to them by the Cotton Cloth Factories Act of 1911 and the Orders issued under it. It is worth noting that both employers and operatives presented minority reports, and that controversy is still acute as to the need for, or limits of, humidification.

It has been convenient to give in this place the history

¹ Report on Working of Cotton Cloth Factories Act. C. 8348 of 1897.

² First Report of Departmental Committee on Humidity and Ventilation in Cotton Weaving Sheds. Cd. 4484 of 1909.

³ Second Report, etc. Cd. 5566 of 1911.

of the regulation of the cotton cloth factories ; it will be noticed, however, that they have been regulated by special Acts of Parliament and not as dangerous trades under section 79 of the Factory Act.

(b) SPINNING AND WEAVING OF FLAX AND TOW.—In 1894 Mr. E. B. Osborn made an exhaustive inquiry into the conditions of work in flax mills and linen factories,¹ the majority of which were in the North of Ireland. He found overwhelming evidence of an unduly high incidence of phthisis, though the statistics as to mortality were unsatisfactory.² Dust, damp, heat and imperfect ventilation were the chief evils of the industry with which the Factory Acts could deal, but Mr. Osborn emphasized in his report the bad effects of low wages, the diet “ chiefly of bread and tea,” and the small amount of flannel in the clothing of the operatives.

The flimsy blouses of the women working in the weaving rooms were often soaked with moisture, the infusion of steam being done very much by rule of thumb. Mr. Osborn suggested that improved ventilation and regulation of humidification might do for the linen factories of Ulster what the Cotton Cloth Acts had done for the cotton industry of Lancashire.

In the “ roughing ” and sorting rooms there was a different difficulty and danger. Here the operatives worked in a continual cloud of dust, consisting of small particles of fibre, which found their way into the lungs. An operative suffering from a cough was locally described as “ poucey.”³ Exhaust ventilation was obviously needed.

Special rules were made in accordance with the recommendations ; they were amended slightly in 1896 and again in 1906. There was a fresh inquiry in 1912 by a Departmental Committee which reported in 1914.⁴ It would appear from the evidence that the Belfast employers had really been at pains to deal with the evils complained of

¹ Cd. 7287 of 1894.

² In the case of widows, of whom there were many, the occupation of the late husband was returned.

³ *Poucey*, connected with French *poussières*.

⁴ Cd. 7433.

previously.¹ It was also clear that there was not among the Ulster operatives as much aliveness to the dangers of excessive humidity as was to be found among the Lancashire cotton workers.

The Departmental Committee recommended a very detailed code as to temperature, humidity and ventilation. They also recommended the compulsory provision of cloak-rooms. The War and the disturbed condition of Ireland after the War prevented any action being taken, and the North of Ireland has now passed out of the surveillance of the Home Office at Whitehall.

(c) SPINNING AND WEAVING OF HEMP AND JUTE.²—The hemp and jute industries are very similar in nature to the flax and tow industries. Draft regulations were issued in 1906, and, after a conference at Dundee, were accepted by employers and operatives.

Industries involving Risk of Skin Disease.

In a very large number of occupations workers are found to suffer from affections of the skin. Sugar, borax, cinchona bark, soap, flour, bitter oranges, shellac, rosin, lye, rouge, lubricating oils, are a few only of the substances known to have irritant effects, which may be merely tiresome but which can be more serious. The affection of the skin may take the form of rashes or sores or warts, which, if neglected, may have more serious consequences. The term "eczema" is often applied to these affections, but neither "eczema" nor the more general term "dermatitis" is sufficiently elastic to cover them all.³ Several of them have been scheduled as industrial diseases for which compensation can be obtained under the Workmen's Compensation Act of 1906, e.g. chrome ulceration; epitheliomatous

¹ "There is not the faintest doubt that the conditions have been wonderfully improved. I think the generosity of the manufacturers here in dealing with dust has been remarkable. I know of nothing to compare with it in the whole of my experience of factory inspection." Evidence of W. Williams. Cd. 7446 of 1914, p. 80.

² See Report of Chief Inspector of Factories, 1906, p. 176.

³ R. Prosser White, *Occupational Affections of the Skin*, p. 3. Dr. Prosser White suggests the term "dermatopathy."

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ulceration due to pitch, tar, bitumen, mineral oil or paraffin ; scrotal epithelioma (chimney-sweep's cancer) ; and eczematous ulcerations, produced by dust or liquid. Only two of these affections, chrome ulceration and epitheliomatous ulceration, have been made compulsorily notifiable as yet. The industries in which they occur have been certified as dangerous industries, and the steps taken with regard to them are described below.

Frequent washing or bathing, and care as to clothing, are the chief precautions which can be taken against dermatitis (to use the common, if scientifically incorrect, term) in most of its forms. These are secured in one or two industries, e.g. tanning by bi-chromate, by Welfare Orders. But dermatitis has not yet been tackled with any thoroughness by the Home Office, and it is probably with regard to it that there is most likelihood of advance in the near future in the matter of industrial disease. A good deal of medical and chemical research is needed to discover which substances, volatile oil or other ingredient, cause mischief, and how it can be counteracted. The application of lanoline and castor oil ointment after washing is said to reduce the risk of dermatitis from lubricating oils and cooling fluids used in engineers' shops.¹ Research will doubtless indicate many such precautionary steps, and it may also suggest alternative methods of manufacture.

Chrome ulceration and epitheliomatous ulceration occur in the manufacture of chemicals and in the dyeing industries, both of which are covered by the Chemicals Regulations. Cancer, developing out of epitheliomatous ulceration, has recently been found to occur among cotton spinners, and compensation has been given under the Workmen's Compensation Act.

In 1910 the Home Secretary certified the manufacture of patent fuel (briquettes made of coal-dust and pitch) to be a "dangerous trade"; partly because fragments of pitch were likely to fly up and injure the eyes, but more because workers of long standing were liable to develop warts, which sometimes became malignant. Draft regulations

¹ Collis and Greenwood, *The Health of the Industrial Worker*, p. 396.

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were framed, prescribing the taking of baths every second day by those actually handling pitch, the supply of overalls, provision of a store-room for clothing, the use of goggles and periodical medical examination. There was strong opposition to these regulations from both employers and workers, and after inquiry it was decided to hold them over for a year or two during which there might be voluntary experiment. In 1913 a second inquiry was held. Great improvements had been made by the introduction of exhaust ventilation and by more frequent sweepings of the sheds. The men were more alive to the importance of getting early medical treatment for pitch warts. There was strong opposition, however, to the compulsory baths: one witness declared that the taking of baths had aged men ten years! It was still impossible, in face of the opposition of the workers, to impose the regulations, but trade union leaders are doing their best to persuade the men to adopt voluntarily the recommendations. It is a good example of the difficulties which are met in practice when it is attempted to counteract the special dangers of an industry.

CHAPTER VI.

REGULATIONS FOR SAFETY.

DANGERS to health occupied the minds of the factory inspectorate in years 1891 to 1900, and dangers to safety received much less attention. Not very much was done by way of special rule before 1900, except in the case of chemical works as already noted.¹ In 1902 regulations were made for the felt-hat industry, where the use of an inflammable solvent brought special risk of fire. The regulations for the docks were issued in 1904 after prolonged negotiations; the regulations for the use of locomotives in factory sidings were issued in 1906. In 1905 action had been taken with regard to self-acting mules. In 1907 electricity regulations, which had been recommended as far back as 1897, were put into force. The Departmental Committee on Accidents recommended in 1910 that the Home Secretary's powers with regard to dangerous trades should be used for accident risks as they had been used for health risks. But the only code of regulations promulgated between that year and the outbreak of the War was the ship-repairing code of 1913. Since the Armistice there have been regulations issued for the very dangerous woodworking industry and for the manufacture of, or with, celluloid. The docks regulations have recently been overhauled; and there are negotiations for a code of regulations for work on buildings in course of erection.

Electricity.

As far back as 1897, as we have seen, the Committee on Dangerous Trades recommended special rules for works

¹ See p. 38.

generating or using electricity, and they recommended also the appointment of an inspector with the requisite technical knowledge. Five years later Mr. G. S. Ram was appointed electrical inspector, an office which he has held ever since. Draft regulations were issued in 1904 but they did not come into force till 1908. For the most part they are of a highly technical nature. There is one, however, which is of general interest, because it suggests a method of protection which might perhaps be usefully extended to other dangerous processes. "No person, except an authorized person or a competent person acting under his immediate supervision, shall undertake any work where technical knowledge or experience is required in order adequately to avoid danger." Moreover there is a clause forbidding anyone to undertake repairs or alterations unaccompanied.

There can be no doubt that the electricity regulations have been very effective: in spite of the enormous increase in the use of electricity since 1907 the number of accidents, both fatal and non-fatal, has remained about the same.¹ There were 70,000 works using electricity, apart from generating stations and sub-stations, in 1921 as against 42,000 works in 1913.² The rate at which the casualties were increasing up to 1908 or thereabouts is an indication of what might have happened but for the regulations.

It is not, unfortunately, the case that the electricity regulations have been successful in preventing all unnecessary accidents or loss of life. Constant vigilance has been required to secure their enforcement; and the electrical inspectorate, though increased to five in 1921, has found it impossible to cover all the ground. Cases are reported

¹ ACCIDENTS FROM USE OF ELECTRICITY IN FACTORIES OR GENERATING STATIONS.

1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
9 ^a	36 ^a	68 ^a	107 ^a	157 ^a	138 ^a	186 ^a	260 ^{1b}	325 ¹¹
1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
321 ¹²	335 ¹²	333 ^b	362 ^b	357 ¹²	515 ¹²	415 ¹²	No figures available.	
1917.	1918.	1919.	1920.	1921. ^c	1922.	1923.	1924.	
No figures available.		390 ²²	394 ²²	322 ¹²	309 ¹⁷	361 ²¹	433 ²⁷	

^a Figures for Ireland excluded in this and subsequent years.

² See Tillyard, *op. cit.*, p. 169 and the Report of the Chief Inspector of Factories, 1921, p. 50.

of contractors putting in cheap material in defiance of the regulations in order to cut prices. It is an interesting comment on the plea made that bodies working for the public good should be exempt from regulation¹ that the Electrical Inspector finds that the sub-stations of public authorities are often unduly cramped, so that safety is sacrificed to cheapness.² It is also obvious that lives are often risked, and sometimes lost, by the putting of men without knowledge of electricity to work in places where they are doubtless safe ninety-nine times out of a hundred, but where in case of any abnormal occurrence they would not know what to do.

Of the accidents which occurred in 1922 the Senior Electrical Inspector wrote that

"seven, one fatal, were due to mistakes on the part of persons in charge in omitting to open isolating switches before working on switchboards, or in opening the wrong isolators. All these might have been avoided, had a test been made to prove whether the conductors had been made dead before the work was commenced, or if a second authorized person had checked the isolating operations. Three, two fatal, were due to skilled persons deliberately and quite unnecessarily working close to unscreened live conductors. In these cases, although the persons meeting with the accidents were themselves at fault, the real blame rested with the responsible management in permitting work to be done under similar dangerous conditions as a normal practice. Six accidents, one fatal, occurred to unskilled persons when working in dangerous situations without proper supervision. Two others were due to touching high tension conductors protected only by insulated tape. It is common practice in some stations to regard conductors so protected as being safe to touch, whereas many previous accidents have proved that even when the tape is of 'high tension' quality and wrapped in a number of layers, it cannot be depended upon for safety."³

It is clear that lives are lost which need not be lost. In particular, one is struck by the callousness shown in allowing unskilled persons to work in dangerous situations without proper supervision.⁴ A considerable reduction in

¹ See p. 40.

² Chief Inspector of Factories Report, 1922, p. 86.

³ Report of Chief Inspector of Factories, 1922, p. 82.

⁴ In the opinion of the writer this is one of the cases where some test of competence ought to be imposed. See pp. 115 and 211.

the number of accidents could be made and ought to be made.

Loading and Unloading at Docks, Wharves and Quays.

It was not until 1901 that it was clearly established that the "dangerous trade" section of the Factory Act could be applied to work in the docks. Two factory inspectors had made a report in the previous year, and after prolonged negotiations, regulations were issued in 1904. They included the fencing of dangerous places, sanding of slippery stages, testing of gear, and a number of technical precautions. In spite of the regulations the number of accidents has continued high, though diminishing. In 1922 there were 5,049 accidents, of which 74 were fatal. It is significant that only 38 of these accidents (7 of them fatal) were due to breaches of regulations. Fresh regulations were drafted in 1923, and after a series of conferences, were issued in 1924. Better first-aid provision was one of the changes desired. The regulations as to testing gear were tightened. At the conferences preliminary to the issue of the new regulations stress was laid on the desirability of a Safety First campaign in the docks.

There has been difficulty, with regard to this class of work, in delimiting the functions of the Home Office and of the Board of Trade. Questions of the structure of ships come within the sphere of the Board of Trade.

The Use of Locomotives and Wagons.

The Departmental Committee on Dangerous Trades had called attention in 1896 to the accidents occurring on railway sidings within private premises. The Act of 1901 gave the Home Office power to make regulations for such sidings, but it was not till 1906 that they were actually issued. They included lighting after dark and the exclusion of young persons from certain kinds of work; and there were other technical provisions. As in the case of docks, questions of demarcation have arisen with the Board of Trade.

The Construction and Repair of Ships.

An investigation of the high accident rate of the very dangerous shipbuilding and ship-repairing industries was made by factory inspectors in 1901 and again in 1907. Reports of the latter inquiry were circulated among employers so that recommendations might be voluntarily adopted and tested. In 1914 regulations were issued. Adequate lighting, proper fencing of gangways, and the use of sufficient and good materials were among the chief requirements. The number of accidents continued to be very heavy, and in 1923 a Departmental Committee sat and reported under the chairmanship of Mr. G. Locker Lampson, M.P. Great stress was laid upon the proper instruction of novices and on the need for Safety First Propaganda, including a supply of posters. There were a number of technical recommendations relating to the construction of staging, the use of acetylene, the repair of oil tanks, and the danger of gassing during riveting. It was found necessary to apportion carefully responsibility between dock owners, ship owners, and contractors: for want of a clear understanding on the subject there had sometimes been laxity in carrying out regulations. It was also pointed out that at present the Factory Act did not apply to work on ships in harbour or public wet dock, and it was recommended that the law should be amended. New regulations were drafted and recommended without dissentient. They are at present under consideration.

**FATAL ACCIDENTS IN SHIPBUILDING AND SHIP
REPAIRING 1923-4**

1923 60 1924 103

Construction and Repair of Buildings.

A Departmental Committee was appointed in July, 1906, to report on the dangers attendant on building operations. With the exception of the Chairman, Mr. W. D. Cramp,¹ who was a factory inspector, all its members were actually

¹ Subsequently knighted.

connected with the building trade. There was general agreement that it was a dangerous trade. There were said to be over 2,000 accidents, of which more than 100 were fatal, in an ordinary year. The building industry, it should be noted, is the largest industry in the country except agriculture. There were said to be 60,000 master builders and 1,130,425 men (census of 1901). Only about 750,000 men, however, would be protected by regulations.¹

It was felt that at best the building trade must from its nature be a dangerous one; nor was it easy to frame regulations to cover the great variety of materials used and methods employed in different kinds of building and in different parts of the country. Regulations were framed, however, to secure the use of suitable scaffolding of sound and adequate material, and to prohibit various dangerous practices. Scaffolding must be examined once a month and an entry to that effect be made in a register.

The Committee turned down a suggestion that foremen in the building trade should hold a certificate from some public authority which might be cancelled in case of neglect to take proper precautions for the safety of the workers. One member of the Committee, an employer of great experience, dissented from this view.² It seems to the present writer that he was right; and further that some guarantee of competence should be required not only from foremen but from building contractors. It seems pretty clear from records of accidents that small builders not infrequently

¹ The Act of 1901 brought within the scope of dangerous trades regulations for all buildings exceeding thirty feet in height which were being constructed or repaired by means of scaffolding, or with use of machinery; and also all buildings exceeding thirty feet in height in which more than twenty persons (not being domestic servants) were employed.

² Mr. G. Macfarlane, President of the National Federation of Building Trade Employers, wrote in a Minority Report which he presented: "The men who have the erection of scaffolds are generally labourers who after having gained some practical experience take up the work of scaffolding on account of the extra remuneration which it usually carries. They necessarily vary greatly in skill and reliability, and often enough ignorance causes them to incur unnecessary risks both to themselves and to their fellow workmen. . . . I do not agree with the opinion expressed that certification of foremen is impracticable. On the contrary I see no more difficulty in granting certificates in their case than in the case of marine engineers." Cd. 3848 of 1907.

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undertake work which is really beyond their ability, and that they endanger in this manner the life and limbs of their employees.

The proposed regulations have not as yet been put into force.

CHAPTER VII.

GENERAL ADVANCE DURING THE PERIOD. I.

It is proposed to consider in this chapter and in the two following chapters a number of conditions of well-being in factories and in workshops, and to see what advance has been made by legislation with regard to them. Special provisions in codes for particular industries will be noted, but it is of more importance here to examine general provisions, setting up standards for the whole range of industry within the scope of the Factory Acts.

Hours of Work.

The three and a half decades which we are considering were a remarkably barren period so far as statutory regulation of hours of work is concerned. In 1889 an Eight Hours agitation was in full swing, and Mr. Sidney Webb could assert that "a reasonable Eight Hours Act will probably be one of the earliest fruits of the next General Election;"¹ in 1924 a Government of which Mr. Sidney Webb was a member was engaged in trying to pass an Eight Hours Bill with doubtful prospect of success. The normal hours of labour allowed to women and to young persons were practically the same in 1924 as in 1892; and in the latter year as in the former, there was no general restriction upon the hours of work of adult males.² The failure to obtain reduction of hours by legislation stands in striking contrast to the success achieved in other direc-

¹ *Contemporary Review*, December, 1889.

² In factories; the hours of coal miners have been regulated since 1908, and the Board of Trade has had some power to restrict the hours of railway-men since 1893.

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tions, notably in sanitation and in ventilation. In scarcely any other respect are the Factory Acts so far behind current practice.

One reason for the failure of the Eight Hours Bill movement would seem to be that the Trade Unionists were for many years divided on the subject; they feared that shorter hours would mean lower wages, and a section of them feared foreign competition.¹ A second reason has been that public opinion, especially middle-class opinion, has been more readily stirred by stories of maimings or poisonings than by the thought of long hours. Fatigue and lack of opportunity for recreation, for education, and for citizenship, do not impress themselves strongly upon dull imaginations. And employers generally have been much more hostile to any limitation of the hours of work than to the imposition of other conditions. They dread the loss of elasticity, which they think is needed to enable them to cope with sudden rushes of work.

The revolution in opinion produced by the War is described in another chapter. It was followed by a period of reaction from which we are only just emerging. The principle of the Eight Hour Day is embodied in the Covenant of the League of Nations; it is to be hoped that it will find early admittance to the statute book. And there are now the beginnings of a Six Hours Movement,² which may possibly have an effect upon the legislation of a few decades hence. But this belongs to the story of the future and not of the past. The story of the last three decades is of failure to achieve what seemed likely to be achieved.

Having recorded the broad failure, we can pass to consider the minor achievements of the period.

There is one, and only one, limitation of the hours of adult males in our factory legislation. The Potteries regulations prescribe a forty-eight hour week for certain

¹ See, for instance, the discussion at the Trades Union Congress of 1900. W. J. Davis' *History of the Trades Union Congress*, vol. ii, p. 198.

² A resolution was passed at the Trades Union Congress of 1923 declaring that the time had come to demand a six hours working day. On the employers' side, see Lord Leverhulme's *The Six Hour Day and other Industrial Questions*.

classes of workers and a fifty-four hour week for others. Overtime is strictly limited.

There have been two clauses in Acts of Parliament since 1891 which have affected the hours of adult women. In 1895 there was a reduction from 96 to 60 of the number of days on which they might work overtime in trades concerned with perishable articles. And in 1895 also—a really important step—it was made illegal for women to be employed both inside a factory and outside a factory on the same day, except during such hours as would have been permissible if all the work had been done in the factory. This put an end to a good deal of “dual employment of women in a combined retail shop and workshop,”¹ which meant that after a day’s work in the workshop there might be a long evening’s work in the shop. It made illegal also the taking home of work from the factory after a day’s work there; but this was found in practice very difficult to detect and to check. Dame Adelaide Anderson cites the case of a girl of fifteen, who in 1911 was working in a feather manufacturer’s workshop from 8.30 a.m. till 7 p.m. and who then took work home and sat up till 11 p.m. with it.² The Trade Boards have done a great deal to remove the incentive to this kind of evasion of the law by the workers themselves, an evasion fostered by starvation wages.

The same special limitations of hours of certain classes of pottery workers apply to women as to men.

The only other item to add to this very meagre list is that since 1907 women are no longer allowed to work at night on flax-scutching, the one occupation exempted previously from the general prohibition of night work of women.

In the case of young persons the outstanding piece of legislation of our period which has affected so far their hours has been the absolute prohibition of overtime in 1895; previous to that date young persons might work in certain industries two hours’ overtime on forty-eight days in the year.

There stands on the statute book the Education Act of 1918, but the application of some of its most important

¹ See Anderson, *op. cit.*, pp. 29 and 30.

² *Idem.* p. 31.

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clauses is deferred indefinitely. When section 10 comes into force it will create a new half-time system under which young persons between the ages of fourteen and eighteen will attend school for 280 or 320 hours in the year.¹

In the case of children also, the period under consideration was one in which little was done to shorten the hours worked, though a great deal was done to alter the age at which children might begin to work those hours, and to delay the time when in the eyes of the law they ceased to be children and became "young persons." The Factory Act of 1901 gave to them, as to other protected persons, an extra hour of liberty on Saturdays. The Employment of Children Act of 1903 provided that children working as half-timers in factories should not be employed outside of them as well. With these exceptions the law as to hours of children stood in 1918 where it did in 1891, and indeed in 1878. The Education Act of 1918 (reinforced by the Women, Young Persons and Children Act of 1920) ended altogether the employment of children in factories and workshops.

The astonishing and disgraceful fact which emerges from an examination of our factory legislation in regard to hours is that so far as *length* is concerned there has been practically no improvement since 1850, though there has been great extension in the *range* of establishment to which these hours apply. We have not advanced, except in detail, past the Ten and a Half Hours compromise of that year. Fortunately the method of collective bargaining has been more successful, especially since 1918, and the number of factories and workshops in which a fifty-four hour week is exceeded is very small, whilst the eight hour day is usual, and in some trades even shorter hours are worked.² But it is quite time that the new standards received the sanction of law.

There has been little advance in the matter of holidays. Sunday work was forbidden to "protected persons" in

¹ Section 10 was actually operative for a time in 1920 and 1921 and continuation schools were started in London, West Ham and Birmingham; but on grounds of economy they were closed down.

² See also p. 203 as to the effect of the Trade Boards Act.

1891. By the Act of 1895 Christmas Day, Good Friday, and the four Bank Holidays were fixed as holidays for "protected persons," with option to the employer to substitute for them other days. There has been no attempt in this country, as there has been elsewhere,¹ to prescribe a compulsory summer holiday with pay, though in quite a number of industries there are voluntary agreements to that effect.

The Employment of Children.

The earlier Factory Acts were also Education Acts: they prescribed a minimum of schooling. When, from 1870 onwards, there were Education Acts, they in turn operated virtually as Factory Acts: employment in a factory was obviously precluded during the hours of attendance at school.² The two sets of Acts did not always coincide in their requirements. Moreover the Education Acts gave considerable latitude to local authorities: they *must* require school attendance up to a certain age, they *might* require it for several years longer. The position between 1890 and 1924 is shown in the following table:

	Factory Act.		Education Act.	
	Minimum Age for Starting Work.	Minimum Age for Full-time Work.	Statutory Minimum Age for Starting Work.	Age up to which Full Attendance could be required by By-Law.
1890	10	13 or 14	10	13
1891	11	13 or 14	—	—
1893	—	—	11	—
1899	—	—	12	14
1901	12	13 or 14	—	—
1918	—	—	14	—
1920	14	14	—	—

¹ Annual leave is compulsory in Austria. In the Styrian building trade where employment is irregular there is a system of stamped cards, and any man with 52 stamps in eighteen months has a week's leave with full pay from the Leave and Welfare Board formed by employers. See the *International Labour Review* for February, 1924.

² But the adoption of the Education Act by local authorities was optional until 1880.

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It will be seen, therefore, that from 1891 to 1893 a child might be exempt from school attendance but be unable to work in a factory; the mischief of this interval was the reason for the introduction of the Education Bill of 1893. Between 1899 and 1901 the position was reversed: the Education Act kept children at school who, but for it, might have been employed in factories. And right through the period, from 1890 onwards, local authorities could, and did in many cases, keep children at school by by-law, who could otherwise have been legally employed.

Two courses were open to the local authorities: they might either give full time education up to a certain age and then set the child entirely free, or they might give full time education up to a certain age (usually a lower age) and then impose part time education. The former course was adopted by a large number of local authorities. It was estimated that there were in England and Wales in 1912 about 60,000 children under the age of fourteen, who were working full time in factories. Some of these children could not have been retained in the schools; a parent had the right to take a child from school on his or her thirteenth birthday if the child had put in 300 attendances in the preceding five years. But many more of these children were working full time in factories because the local authority did not choose to exercise its full powers.

The alternative course was to adopt the half-time system. This dated back to the beginnings of factory legislation. In its day it had been a great advance and a great protection of the interests of the children. But now that compulsory elementary education was well established, the half-time system was no longer a blessing but a curse. It did not give the children education which they would not otherwise have had; it took from them education which other children enjoyed where the half-time system did not prevail. The strongholds of the half-time system were Lancashire and Yorkshire, whose industrial life had been so largely built in the early nineteenth century upon the exploitation of child labour. It was stated that in 1906-7 there were

34,306 children employed part time in factories, of whom 20,302 were in Lancashire and 10,517 in Yorkshire.¹

The sentiment in favour of the half-time system was tremendously strong, and it was shared by the majority of workers with their employers. Lancashire and Yorkshire put up a dogged opposition during most of the period under consideration to any change. It was argued that the children could acquire a dexterity which would be quite unattainable if they started at a later age. They were said—and it is very likely to be true—to prefer mill life to school life. And the argument was always brought forward that the earnings of the half-timer made all the difference between penury and comfort in the home.

Against the half-time system it was argued that the children going to work at such a tender age were hardened and coarsened, that their health was inferior to that of children at school, that the accident rate was double that of adults, that factory work made the children physically incapable of profiting by school and that the hours worked in mill and at school were together considerably greater than those worked by a child either full time in the mill or full time at school.²

Arguments of this kind could be bandied by both sides *ad infinitum*. Doctors could be produced to give evidence that the health of the half-timer was excellent, whilst other doctors could be found to declare that it was abominable.³ Managers of mills gave evidence of the injury to business when the school age was raised; other employers were found who had done away with half-time in their works and declared that they were the better for it. Some towns—Huddersfield, for example—reduced half-time to negli-

¹ Report of Inter-Departmental Committee on Partial Exemption, Cd. 4791, 1909.

² The arguments for and against half-time are summarized in the Report of the Inter-Departmental Committee on Partial Exemption, Cd. 4791, 1909.

³ Medical examination of school children only began in 1907. When the Factory Act of 1891 was before the House of Commons the prowess of the Blackburn Rovers was advanced as evidence that the half-time system was healthy. It was pointed out in reply that half the team was imported and that only one had been a half-timer. Such are the trivialities which are brought forward in the absence of reliable social statistics.

gible proportions and found that their staple industry was not ruined. Other places near Huddersfield were convinced that their prosperity was bound up with the continuance of the half-time system. Many of the Trade Union leaders were more enlightened than their followers, but "it was as much as an official's life was worth to talk about raising the age of the half-timer." Year after year, on many platforms, and in many conferences, officials of the textile unions had to oppose resolutions of which they heartily approved.

In 1909 the half-time system was condemned by an Inter-Departmental Committee which sat under the chairmanship of Mr. C. Trevelyan. A Bill to raise the age of full-time attendances at school to thirteen was introduced in Parliament in 1911, but the subject was controversial and the Government was weak and harassed, and the Bill was crowded out.

Opinion in Lancashire and Yorkshire was changing slowly. In July, 1914, Mr. Tom Shaw, in a great speech to the Textile Factory Workers Association, described the shame he felt when at the International Congress of Textile Workers he and his British colleagues found themselves alone in representing organizations which wished children to go to work at the early age customary in this country. A resolution in favour of abolishing half-time was carried after Mr. Shaw's speech by 102 votes to 20. It was a notable victory. But well into the War period there were strong dissentient voices. In 1917 and in 1918 Mr. Fisher, who was preparing his Education Bill, spent a good deal of time addressing meetings and interviewing delegations in the North of England. After the Bill was introduced in Parliament a ballot of textile workers was held, and it was found that about two-thirds of them were still hostile to the abolition of half-time, though the opposition was much weaker than formerly. And there are still a good many, employers and operatives, in Lancashire and Yorkshire, who regret the time when little fingers learnt dexterity and took home a few shillings at the end of the week.

The Protection of Men.

One of the directions in which great and significant advance has been made in the period 1891-1924 is in the legislative protection of men. The old principle of non-interference with regard to the working conditions of adult men has no longer sway.¹ Even their hours are regulated in certain instances, and a general regulation (to carry out the Washington Convention) is opposed not on principle but as a matter of expediency. In many of the dangerous trades the conditions of work of adult men are very carefully regulated,² and several of them are trades in which women have never worked.

But because the abandonment of the old principle has been gradual and without explicit acknowledgment, the vestiges of it are to be found in almost every part of factory legislation. Except in certain dangerous trades, men may still work an unlimited number of hours, and they are not secured Sunday or any other holiday. In some matters of comfort and decency they lack the protection given to women.³ And the same is true of danger.⁴ Men's workshops (i.e. workshops where no women or young persons are employed) are exempt from many regulations which one would think necessary to any standard of well-being: the workshop need not be warm, wet floors need not be drained, the Particulars Section cannot be enforced, abstracts of the Factory Act need not be displayed, and there are other anomalies.

¹ In 1890 Lord Salisbury wrote to Bismarck in reply to the invitation to the Berlin Conference: "If the words 'agreement in regard to a limit for the working day' imply a policy of direct legislative restrictions upon the liberty of adult male workmen to work as long as they please, it is right to say that the principles of legislation accepted in this country would preclude Her Majesty's Government from making such a proposal to Parliament." Cd. 5914 of 1890.

² In the majority of cases the reference is to "any person" or to "persons." Special restrictions on women's work are mostly in the industries employing lead.

³ E.g. with regard to a sanitary convenience, "if for the use of females shall have a proper door and fastenings" (Factory and Workshop Orders). But men also like privacy and security against horseplay.

⁴ E.g. no woman may work between the fixed and traversing part of any self-acting machine while the machine is in motion. Factory Act, s. 12. But a man is allowed to incur the danger.

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It is time that there was full and unreserved recognition of the fact that men need to be protected as well as women.¹ The Factory Acts and the regulations under them ought to be scrutinized to see where men lack protection given to women, and unless there is some very good reason, the protection should be extended to them also. Has not a man eyes? Has not a man a nose? Has not a man feet? If the workshop is badly ventilated, will not his health be impaired? Is it good for him to be unnecessarily wet or cold? Does he not need rest and holidays? Differences in legislation for men and for women should only be allowed where difference of sex makes their needs and capacities different.

Particulars.

Mr. Birtwistle, the first Inspector of Textile Particulars, bore witness in 1896 to the immense popularity of the clause in the Act of 1891 which made it compulsory to give particulars of earnings to all piece workers in textile factories.² It is not difficult to realize that it put an end to a great deal of suspicion, misunderstanding and actual injustice: the employee might find it embarrassing, if not dangerous, to ask for an explanation; might easily suspect payments of being for less than the work done or at less than the agreed rate, when actually it was not so; and would doubtless in a considerable number of cases be defrauded. So obviously beneficial was the Particulars clause that the Act of 1895 gave the Home Secretary power to extend it by Order "to any class of non-textile factories or to any class of workshops"; and the Act of 1901 extended it to out-workers. Twenty Orders have been made.³

By various Acts of Parliament, the earliest of which dates back to 1872, the coal miners had won the right to

¹ It needs to be added that the community has a right to ensure, as far as possible, that men are not injured, even if they are blind to their own risk. It is unfortunately true that men sometimes object to necessary regulations, and that regulations may be imposed on women and not on men because women are more ready to comply.

² Anderson, *op. cit.*, p. 86.

³ The Factories Bill of 1924 proposed to make it compulsory to supply particulars wherever piece-wages were paid.

have an official of their own present at the weighing of the coal. Other workers, who were paid by weight, desired the same safeguard, and resolutions to that effect were passed by the Trades Union Congress for many years. The Checkweighing in Various Industries Act of 1919 applied immediately to four industries,¹ and the Home Secretary was given power by Order to extend the list. He has not yet made use of this power.

Truck.*

Few Acts of Parliament have given more trouble in interpretation than the Truck Acts. Two different kinds of wage questions are dealt with by them. In the first place there is the practice of some employers of compelling their employees to accept goods instead of money in payment of wages. This is a very old abuse: an Act of Parliament of 1464 recites that in the woollen cloth industry "the labourers have been driven to take a great part of their wages in pins, girdles and other unprofitable wares."² This is a comparatively simple matter and the intention of the law has long been clear: workmen are entitled to their wages in coin and they are at liberty to spend their wages as they think fit. The chief difficulty about the Truck Acts was that there were no inspectors to enforce them until 1887, when their administration was handed over to the factory inspectors, so far as factories were concerned. The practice of paying in goods rather than in coin then disappeared rapidly except in one or two backward areas.⁴

The real difficulty has been with regard to a second class of questions. In some industries employers supply materials,

¹ The production or manufacture of iron or steel, the loading or unloading of goods, the getting of chalk or limestone from quarries, the manufacture of cement and lime. Tillyard, *op. cit.*, p. 82.

² The Truck Acts are not strictly speaking Factory Acts, but as they apply to factory workers and are administered in regard to them by the Home Office, it seems natural to include them here.

³ Quoted in the Report of the Departmental Committee on the Truck Acts. Cd. 4442 of 1908.

⁴ E.g. West of Ireland, sock-making; Cornwall, guernsey-making; Somerset, glove-making. *Ibid.*, Cd. 4442.

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or tools, or power, or light and fuel, and make a charge for them, which they collect by deduction from the wage paid. Some employers make a deduction for spoilt material or injured machinery. In all these cases the deductions may easily be excessive, unless there is some check on them. Workers are also fined for breaches of discipline, e.g. for coming late, for using bad language, for making a noise. Disciplinary fines have often been ridiculously high and made on slender pretexts. Girls have been fined for dancing in the dinner hour: for wearing hair curlers: for sneezing: even at a West End dressmaker's establishment for "coming down in couples."¹ A girl earning 5s. a week was fined 5d. for being five minutes late.²

Since 1896 some protection has been afforded to the workers by the clause in the Act of that year, an Act otherwise objectionable as giving sanction to deductions which were previously of dubious legality, providing that a deduction "must be fair and reasonable having regard to all the circumstances of the case," and in regard to the damage done by the worker must "not exceed the actual or estimated damage." But magistrates have taken very different views as to what is fair and reasonable, and the factory inspectors have been much hampered by the faulty wording of the Act. Abuses have been most common, as might be expected, in the unorganized trades, but it came out most clearly in the evidence before the Departmental Committee that the officials of the great trade unions were in many cases unaware of the provisions of the Act and were complaining of abuses which might have been rectified by reference to a factory inspector.³

The Departmental Committee of 1906 sat for two years and took an enormous amount of evidence, finding "a certain exuberance of willingness upon the part of various sections of the industrial community for the hearing and expression of their views." They made a number of recommendations, of which the most important were as

¹ Cd. 4442.

² Cd. 4442. See also Chapter III of Dame Adelaide Anderson's *Women in the Factory*.

³ See p. 177.

follows: that the Truck Act should extend to out-workers and also to workers in docks and warehouses; that fines should be abolished in the case of young persons under the age of sixteen; that fines should not exceed five per cent of the weekly wage; and that deductions for materials entering into the product should be made illegal, as also deductions for heat, light, use of tools, and other necessities provided by the employer.¹ A minority report was signed by Mrs. H. J. Tennant and Mr. Stephen Walsh, M.P., who wished to see disciplinary fines abolished altogether.

No action has been taken to give legal effect to the recommendations of the Committee. Trade Boards have, however, had a very considerable effect upon the worst paid and worst organized trades, both by stimulating organization and expression on the part of the workers and also more directly by imposing minimum rates of wages which must be paid clear of all deductions. And quite apart from the action of Trade Boards, the tendency is for disciplinary fines to disappear.

Homework.

The marked interest in sweating in the 'nineties caused the question of the regulation of homework to bulk largely in public attention. The difficulties were keenly felt. It is clearly impossible to make such drastic regulations for work carried on at home as are made where an industry is carried on in a building which is used for that purpose alone; it is impossible, for instance, to say that workers must be out of the workrooms except during permitted hours, since the workroom is a living-room also. At the same time standards must be imposed in the interests of the workers and of the consumers alike; and if these standards are very much below those applying to factories and workshops, there will be complaints of unfair competition and it will be objected to the more drastic legislation, that

¹ They also recommended Government regulation and inspection where the employees "lived in," but this would apply mainly to shops and very little to factories or workshops. Cd. 4442.

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it is driving more and more of the industry into the homes. It may be doubted, however, whether any tightening up of regulations for factories and workshops has ever actually led to an increase of homework. The factory has to carry heavier capital charges, and the conditions imposed by law add to these; but it has great advantages in better discipline, in more reliable and exact delivery, in greater possibilities of standardization, in the very superiority of its hygiene and conditions as the result of legislation, and it gains also by the stimulus which comes from work done in the company of others.¹

The inspection of homeworkers must in practice be left very largely to the local authorities, and the various Factory Acts from 1891 onwards have attempted to raise the level of local administration. Part of the difficulty was to discover the homeworkers, since it is scarcely feasible to make them give notice of commencement of industry as the occupier of a factory or workshop has to do. The Act of 1891 placed upon employers the duty of keeping a list of out-workers. In 1895 it was made obligatory on them to send a copy of this list to the factory inspector, who communicated with the Medical Officers of Health in the local areas in which the out-workers resided; the regulation was made applicable to occupiers of shops and of warehouses as well as to occupiers of factories and of workshops. In 1901, in order to stimulate the many inactive local authorities, it was made incumbent on the Medical Officer of Health to send annually to the Home Office a report upon his administration of the Factory Act.

Apart from improvements in the administration, the only changes of importance since 1891 have been in regard to work carried on in homes where there is infectious disease. In 1895 only scarlet fever and small-pox were specified as constituting bars to the carrying on of homework, but in 1901 the prohibition was extended in the case of all diseases notifiable under the Infectious Diseases Act of 1899.

¹ On the economics of homework and factory work, see A. Aftalion, *Le Développement de la Fabrique et le Travail à Domicile dans les industries de l'Habillement*.

SOME PRESS OPINIONS

The Times : ' This study has involved the consideration of a great mass of details, many of them rather trivial, but has been carried through with a clear and well-defined purpose. As a result the volume is of distinct value.'

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Miss SUSAN LAWRENCE, M.P., in *The Daily Herald* : ' This is an exceedingly good book, careful, thorough, and documental. There are other books giving the history of the earlier stages of the individual boards ; there is no other book which can be compared with this as a description of the system as a whole or which brings this history up to the immediate present . . . The case put up a little time back that trade boards cause unemployment is thoroughly and carefully discussed, and, if this is not too much to hope, finally disposed of.'

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An Enquiry into its Operation

BY

DOROTHY SELLS, Ph.D.

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A Select Committee took evidence as to homework in 1907, but its proceedings were singularly barren. The position in regard to homework still continues to be unsatisfactory both as to law and as to administration. There are no limits to the hours which women may work and the limits for young persons are wider than in factories or workshops.¹ Children were in the same position as young persons until the Education Act of 1918 made their employment illegal.² There are many other exemptions³ of homeworkers from regulations applying to workers in factories and workshops; and some of these, for instance the absence of a strictly defined meal hour, make effective inspection very difficult.

Fortunately other legislation and the operation of social forces have made a very great difference in recent years in the numbers and conditions of homeworkers. The Trade Boards Acts, which apply to most of the trades in which there is much homework, have made it difficult or impossible for unscrupulous employers to pay very low wages, and homework has become less attractive to employers as against work in the factory. Sickness benefit, unemployment benefit, and other provision against the risks which deprive men of their livelihood have been much extended and there are not so many women driven to earn what they can in the intervals of housework. There has been a marked

¹ See s. 111 of the Factory and Workshop Act. The hours within which young persons may work are 6 a.m. till 9 p.m. (Saturdays 6 a.m. till 4 p.m.), with four and a half hours for meals (Saturday two and a half hours). See especially s.s. (4) :—

"The following provisions shall not apply to a domestic factory or a domestic workshop, namely :—

(a) the provisions as to meal hours being simultaneous and as to prohibition of employment during meal times.

(b) the provisions as to affixing notices and abstracts and as to specifying certain matters in notices so affixed.

(c) the provisions as to holidays.

(d) the provisions as to notice of accidents.

(e) the provisions as to means of ventilation, the drainage of floors, and thermometers.

(f) the provisions as to the keeping of a general register."

² The Employment of Children Act, 1903, had previously made it possible for local authorities to regulate their hours by by-law.

³ It should be noted, however, that since 1901 wherever a dangerous trade is carried on at home (it is not often done) all the provisions come into force which apply to a non-domestic factory or workshop.

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diminution in the number of homeworkers in recent years.¹ They still figure largely in the clothing trade, especially in London and Leeds, and there is a little homework also in a large variety of trades, some of which would be better carried on in buildings used for that purpose only, e.g. potting meats, packing drugs. Licensing of premises for homework has often been suggested and would seem to be practicable in some trades. The tailors' trade unions have been urging for some time past the prohibition by law of tailoring on domestic premises.

¹ In West Ham there were in 1903, 1,600 out-workers; in 1913, 2,442 out-workers; in 1923, 931 out-workers; the increase between 1903 and 1913 being probably due to better notification.

The figures for Leeds are as follows:—

Year	1912.	1913.	1914.	1915.	1916.	1917.
No. of Out-workers . .	1,363	1,491	1,720	1,783	1,503	1,230
	1918.	1919.	1920.	1921.	1922.	1923.
	774	1,335	1,308	935	1,000	1,114

CHAPTER VIII

GENERAL ADVANCE DURING THE PERIOD. II.

Temperature.

To be warm and not too warm is so clearly an elementary human need that it is surprising that there was no provision requiring it until the Factory Act of 1895 was passed. Since that time factory occupiers have been under obligation to maintain a "reasonable temperature in all workrooms." "Reasonable" is one of those words of wide interpretation which allows scope for dispute.¹ There have been various discussions in courts of law: a temperature ranging from 54° to 61° has been held "reasonable" in a dressmaker's establishment; a temperature ranging from 50° to 55° in a similar establishment has been held not "reasonable."² In 1902 the Departmental Committee on Ventilation gave an opinion that the temperature for sedentary work or work involving little muscular exertion should not be less than about 60°.³ The Health of Munition Workers Committee did not arrive at anything much more definite, though it established the connection between an unduly high or unduly low temperature and a high accident rate.⁴ A higher temperature is tolerable where the air is moving than where it is stagnant.⁵

The regulations for some of the dangerous trades are more precise. In some processes of the flax and tow industry a minimum temperature of 50° was prescribed in the regulations drawn up in 1906; in other processes of the same

¹ The Factories Bill of 1924 proposed giving to the Home Secretary power to prescribe by Special Order a standard of reasonable temperature in any class of factories.

² Halsbury's *Laws of England*.

³ Cd. 1302 of 1902.

⁴ Final Report, p. 67. Cd. 9065 of 1918.

⁵ See Note A.

industry the minimum temperature allowed is 55°. The wool-sorting regulations (of 1905) prescribe a minimum temperature of 50°. The temperature of the stoves in the potteries at the time of drawing must not exceed 125°.

The enforcement of the provision for a "reasonable" temperature has been a difficult matter requiring constant vigilance on the part of the factory inspectors. The problem has often been how to keep a room warm without interfering with the purity of the air. A good many workers undoubtedly like an atmosphere which is warm and close. Certainly many employers have been prepared to sacrifice the purity of the air to lessen their heating bills. After the Act of 1895 some of them met the new requirement as to a reasonable temperature by stuffing up windows, and in some cases chimneys, and by burning gas in ordinary batswing burners or in unhooded stoves. The atmosphere was of course stifling, but as there was no law at the time as to general ventilation and the impurities could not be said to be "generated in the course of manufacture," the factory inspectors were powerless. To meet the situation a general ventilation clause was put in the Act of 1901.

NOTE A.—It may be interesting to compare the practice of good employers in America. In the works of the Brown & Sharpe Manufacturing Company of Providence, Rhode Island, the following placard is displayed.

TEMPERATURES.

In order to secure the most comfortable conditions for all, the following standard temperatures will be maintained as nearly as possible:

Offices and Drafting rooms	67° to 69°
Shop Floors and Rooms where workmen are mostly seated at work	67° to 69°
Shop Floors and Rooms where workmen are moderately active and free to move about	65° to 67°
Foundry, Smithshop and Carpenter shops	55° to 65°
Storage Rooms where workmen are not regularly employed	40° to 50°

On account of the daily range of temperature, the rooms may be 2° to 5° cooler than the above standards during the early morning hours.¹

¹ Quoted in *New Ideals in Business*, by Ida M. Tarbell.

But it should be remembered that Americans are accustomed to higher temperatures in their buildings than we are.

Ventilation.

The desirability of a supply of pure and fresh air was not generally realized until quite late in the last century, and ventilation was often defective in private houses as well as in offices and factories. The first department of the subject to which attention was turned in factories was the removal of actually and obviously poisonous fumes and dusts. The steps taken to accomplish this have already been described. That the ventilation of a workplace needed attention, even where nothing specifically injurious was produced in the course of manufacture, did not occur to our legislators until, as we have already seen, the subject was forced upon their attention by the way in which legislation as to temperature was working out in practice. The Factory Act of 1901 prescribed that "in every room in any factory or workshop sufficient means of ventilation shall be provided and sufficient ventilation shall be maintained."

It has needed steady pressure over a number of years to get this clause observed. There was behind it very little force of public opinion. It is only recently that the nation has begun to appreciate the value of fresh air.

A Departmental Committee on Ventilation, appointed in 1900, reported in 1902 and again in 1907.¹ It pointed out the amount of cubic air space per person was no safe guide to the purity or the impurity of the air; some of the worst cases of impurity of air were found in large rooms with few workers. It recommended that there should be laid down as an objective standard of "sufficient ventilation" the presence of not more than 12 volumes of carbon dioxide per 10,000 volumes of air.²

There has been much experiment and research on questions of ventilation during the last twenty years, not only

¹ Cd. 1302 of 1902 and Cd. 3552 of 1907.

² The Factories Bill of 1924 did not suggest this, but proposed that the Home Secretary should have power to prescribe standards of adequate ventilation.

in connection with factories but as a matter of general hygiene. One discovery of importance has been that it is not sufficient for the air to be pure; it must be moving, and it must be stimulating to the skin. The invention of the kata thermometer has given an easy method of testing this. It was laid down in the Final Report of the Health of Munition Workers that air should be (a) cool rather than hot; (b) dry rather than damp; (c) diverse in its temperature in different parts and at different times rather than uniform and monotonous; (d) moving rather than still.

Lighting.

If questions of temperature have received inadequate attention, questions of lighting have been until quite recently shamefully neglected. The Chief Inspector of Factories, in his report for 1921, quotes the comments of inspectors on the small interest shown by many employers in this subject. It is indicative of the position that there is still no general provision in the Factory Acts. Anyone who has visited a considerable number of industrial establishments will have come across flagrant cases of work in badly lighted rooms. Though there has been a great improvement in the last twenty years or so, yet the strangest unsuitable practices still linger. A whole range of lighting conditions exists from flickering gas jets in draughty rooms to the most carefully designed mercury vapour lighting in some big works. Dame Adelaide Anderson quotes a letter received in 1909, imploring a factory inspector to "give a call unawares and see the black holes of workrooms we have to try and work in with scarcely any light."¹ But whether she called unawares or awares, a factory inspector could do nothing more than advise better lighting, she could not enforce it. I have myself a vivid recollection of visiting in 1924 a workshop in Sheffield, where a dozen men and women were cutting files by the waning daylight of a January afternoon. Dirty windows, dirty ceilings, dirty walls, diminish in many cases such light as would

¹ *Women in the Factory*, p. 137.

otherwise be available. The overcrowding of factories and workshops in congested areas of our large towns and cities is another cause of bad lighting, and in the case of the older buildings the windows are often too small. Against such cases may be contrasted some of the magnificently lighted newer factories, especially those erected at some distance out of town, where a maximum use can be made of daylight.

The prejudicial effect of bad lighting upon health cannot be doubted, though it is by no means easy to demonstrate by statistics. The Final Report of the Health of Munition Workers Committee included imperfect lighting among the principal causes of sickness. All recent medical research indicates the importance to human beings of sunlight; factories ought to be built so that daylight may be used as much as possible. The Departmental Committee on Lighting could find no positive evidence that artificial light is injurious to health, but there was a general opinion that it involves strain. There was little positive evidence also as to the effects of insufficient or unsuitable lighting on eyesight, but that there are bad effects is an assumption which no reasonable person will contest. There is stronger evidence as to the connection between insufficient lighting and the occurrence of accidents. More falls occur in winter than in summer. Evidence was given before the Departmental Committee on Accidents in 1910 that men injured themselves by stumbling in ill-lit passages and yards. Bad lighting may also be conducive to indecent or immoral behaviour. Miss Squire called the attention of the Departmental Committee on Lighting to the case of workshops in Leeds which had common sanitary conveniences in an unlighted yard. Good lighting in a factory is an aid to good discipline. From its effects on health and on discipline, as well as from its obvious direct bearing on quantity and quality of work, good lighting is desirable in the interests of the factory occupier as well as of his workpeople.

Whilst there is no general provision as to lighting in the existing Factory Acts, there are two sections in the Act of 1901 under which regulations may be made in certain cases. Section 101(4) gives power to local authorities to

impose adequate lighting as a condition on underground bakeries. And under section 79 the Home Secretary may make for "dangerous trades" "such regulations as appear to him to be reasonably practicable and to meet the necessity of the case." Adequate lighting has been made a requirement in six codes,¹ the earliest of which dates back to 1906. Between 1906 and 1909 the subject of lighting appears to have occupied a prominent place in the thoughts of the Home Office. In the latter year the Chief Inspector of Factories discussed in his Annual Report the possibility of imposing definite standards of lighting. In 1910 its importance was emphasized by the Departmental Committee on Accidents. In 1911 there was a special report on lighting by Mr. D. R. Wilson. In 1913 a Departmental Committee on Lighting was appointed. It issued a first report in 1915 and it was then obliged in the pressure of war time to suspend operations. It resumed its sittings in 1920, and it issued a second report in the following year and a third report in 1922. Information had also been gathered by the Health of Munition Workers Committee during the War, and that body had issued a pamphlet on the subject in 1917. The inquiries of the Departmental Committee and of the Health of Munition Workers Committee, together with research and experiment conducted by private agencies,² have put us in a position in which the way is clear for legislation.

The Departmental Committee on Lighting, after taking evidence and coming to general conclusions from which we have quoted above, pointed out that the illumination of any surface could be easily measured now by portable photometer, the unit of illumination being in this country the foot-candle.

"We consider, therefore, that the only rational criterion of the adequacy of the lighting is the actual illumination at the place, for instance, where work is being carried out, or in the case of gangways and passages, at the floors over which people are liable to pass."

¹ See p. 45.

² Notably the Society of Illuminating Engineers. See articles in *The Illuminating Engineer*, e.g. Vol. III, p. 665.

They recommended that there should be a statutory provision requiring adequate and suitable lighting in general terms in every part of a factory or workshop; and that the Home Secretary should have power to make Orders defining the standard of illumination for various parts of factories or processes carried on in them. Moreover they recommended certain definite standards. Over the "working areas" of workrooms the illumination measured on a horizontal plane at floor level should be not less than 0.25 foot-candle, without prejudice to the illumination required for the work itself. In other parts of factories and workshops (e.g. passages and staircases) it should be not less than 0.1 foot-candle; in yards and approaches not less than 0.05 foot-candle. It was proposed that in foundries, because of the high accident rate in them, the minimum illumination should be 0.4 foot-candle. If the number of works of various kinds visited by members of the Committee could be taken as a fair sample of all works, it would appear that about one-quarter of the factories and about one-half of the foundries of this country fall below the standards recommended.

It will be noticed that the standard recommended for workrooms is a standard of general illumination only. The illumination required for the actual process is more difficult to determine, and the Departmental Committee decided finally that it was not practicable in the present state of knowledge to impose legal minima. They drew up, however, schedules of processes, classed as "fine work" or "very fine work," and they recommended a minimum of 3 foot-candle for the first and 5 foot-candle for the second. It is likely that these recommendations of the Departmental Committee may be adopted in a number of trades by voluntary agreement.¹ But the Departmental Committee emphasized the need for further research, and doubtless in the course of a few years we shall reach the stage when definite legal standards can be laid down as to the illumination of process as well as with regard to the general illumination of workrooms.

¹ See p. 180.

Lighting needs to be not only adequate but also suitable, that is to say, there should not be glare or flicker. Lights should be properly shaded and the light should be constant. Also sharp differences of lighting on contiguous surfaces should be avoided; bright light and deep shadow are vexatious and may be dangerous. On these three points the Departmental Committee recommended legislation.

Foreign countries supply a good deal of precedent for legislation as to lighting. Most of them require it to be adequate. In Holland definite standards of illumination are imposed. In Belgium there is a provision against glare.

The situation in this country is that whilst little has been done except in a few special industries, there has been a good deal of discussion and inquiry, and the time has obviously come for a general legislative provision.¹

Seats.

It seems to have been a canon of employers until quite recently, and probably the idea is still far from being dead, that to get good work out of an employee you must see to it that he or she is not comfortable. The kind of seat provided in the majority of offices is an eloquent witness to this. The idea of supplying seats to the majority of workers never entered the head of most employers; and the workers themselves took for granted what was customary, and seldom complained. Here and there we find a trade union official putting in a plea for the provision of seats.² It was not until the War compelled a systematic inquiry into questions of fatigue and efficiency that there was any general recognition of the harm done, to women in particular, by standing for long hours. The Shops Act of 1912 had already prescribed seats for women employees. The Police, Factories, etc. (Miscellaneous Provisions) Act of 1916 gave the Home Secretary power to order provision of seats for

¹ The Factories Bill of 1924 would have prescribed "sufficient and suitable" lighting, and would have allowed the Home Secretary to prescribe standards in different classes of works. There was also a window-cleaning clause.

² E.g. Miss Galway, to the Departmental Committee on Flax Spinning and Linen Factories. Cd. 7433 of 1914.

women workers in any trade or factory.¹ The case for seats is stated very succinctly by Messrs. Collis and Greenwood in their *The Health of the Industrial Worker*.

"Seats may not at first sight appear to be intimately connected with health; but they are of considerable importance, first to eliminate unnecessary fatigue, secondly to correct faulty posture at work, thirdly to minimize aching feet and any tendency to varicose veins and flat feet."²

A pamphlet on *Seats for Workers in Factories and Workshops* was issued by the Home Office in 1920. Seats are needed both for work and at rest; they should have backs; and it is an advantage if they can be pushed out of the way when they are not needed. The next ten years should see the disappearance of a great deal of unnecessary and harmful fatigue.

Weight Lifting,

As far back as 1897 Dame Adelaide Anderson reported on complaints from women and girls that they were compelled to lift and to carry heavy weights.³ After the Factory Act of 1901 children and young persons could receive some protection by the attachment to their certificate of fitness of a condition as to weight lifting. Conditions of this kind were also inserted in several Special Orders and in Regulations for Dangerous Trades.⁴ There was a clause in the Employment of Children Act of 1903 that "a child under the age of fourteen years must not be employed to lift, carry or move anything so heavy as to be likely to cause him injury."⁵ Various bad cases were discovered from time to time in spite of these measures. Sir Charles Dilke called attention on one occasion to the case of a girl of fourteen who had been carrying a weight of 107 lbs., and he pointed out that in regulating the weight to be lifted by bluejackets in working quick-firing guns

¹ The Factories Bill of 1924 proposed to make such provision compulsory wherever women do work standing.

² P. 347.

³ Anderson, *op. cit.*, p. 132.

⁴ E.g. manufacture of china and earthenware.

⁵ S 3 (4).

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the limit was put at 100 lbs.¹ On another occasion he called attention to the case of a boy weighing 77 lbs. who had been carrying a weight of 69 lbs.; when this boy was weighed two years later it was found that he had gained only 2 lbs.² The Departmental Committee on Accidents of 1910 recognized the damage done by the lifting of heavy weights, though they thought that the injury was more often a sapping of health than in the nature of an accident. During the War women who took over men's work handled some very heavy weights; and in 1916 the Home Secretary made a General Order under the Police, Factories, etc., Act of that year extending to women the protection already accorded to children.³

¹ Hansard, 30 May, 1902.

² Hansard, 1 August, 1906.

³ The Factories Bill of 1924 would have given the Home Secretary power to prescribe maximum weights which may be lifted by women or young persons in various kinds of work. It is characteristic of our factory legislation that it did not propose to protect the male worker. Yet there must be a maximum weight which the normal adult male can carry without injury, and there is no reason to doubt that men are asked at times to carry weights in excess of this. It is notorious that many men suffer from ruptures and strains, and it is clear from the practice of the best employers that the suffering is unnecessary. Where the lifting of heavy weights is necessary, it could be allowed subject to conditions to minimize the risk. Thus, at Bournville when it was found that certain male workers who had to lift weights became liable to hernia, arrangements were made for their careful selection and for their training in the gymnasium with a view to weight-lifting by proper methods. See *Experiments in Industrial Organization*, by Edward Cadbury.

CHAPTER IX.

GENERAL ADVANCE DURING THE PERIOD. III.

I. Health.

It is very difficult to trace with any sureness the effect of changes in factory conditions and of changes in factory legislation upon the health of the workers, except in those occupations where processes give rise to known specific diseases. Even there it is impossible to disentangle entirely what is due to changes inside the factory and what is due to changes outside the factory. The decrease in lead poisoning is certainly due in part to a general advance in the standard of life, making the workers more resistant. But equally certainly it is mainly due to the regulation of the industries using lead. It is less possible to say with assurance that the general health of workers in those occupations which are not classed as dangerous has improved because of factory legislation, though there is good reason to believe it. There are other important factors; but it is held by competent authorities that occupation probably affects health more than either locality or density of population.¹

Occupational mortality figures need to be interpreted with great caution. The difficulties are well pointed out in the introduction to the Supplement to the *75th Annual Report of the Registrar General*.² Occupational mortality only means the number of persons dying *in* occupations, not the number dying *because* of the occupation. Thus, general labourers have a high mortality rate, not because the work is unhealthy, but because many men of inferior

¹ See Newsholme's *Vital Statistics*, Chapter XXVII.

² Part IV. Mortality of Men in Certain Occupations in 1910, 1911 and 1912.

physique and unhealthy habits become general labourers. On the other hand, the onset of industrial disease may warn a man to change his occupation, and his shortened life may not be recorded in the statistics of that occupation. There are other reserves to be made in any use of the figures.

The salient conclusion to be drawn from the statistics of occupational mortality is, according to the Registrar General,¹ the high mortality from phthisis and other diseases of the respiratory system of those engaged in dust-laden occupations. Where occupational death rates are high, it will be found in most cases that either dust or alcohol is responsible.² It is worth noting that some of the evil-smelling industries, such as the manufacture of glue, or of chemical manure, appear to be very healthy.³ The 1910-2 figures show a marked reduction of occupational mortality in every group of occupations as compared with the figures for 1900-2. Almost all industries would appear to be healthier than they used to be.

II. Safety.

Whilst it must of necessity be difficult to measure with any approach to accuracy the effect of changes in industrial conditions upon the health of the workers, because their health is so much affected by conditions outside their working place, it ought to be comparatively easy to measure the greater or less safety of workers in different occupations and in different years. It is true that other conditions than occupation will have some effect, notably their habits in respect of alcohol. But the chief factors are obviously work factors. If an unusually large number of accidents occur in a particular industry, the reasons for it must be sought mainly in the conditions of that industry.

When, however, we come to look at the statistics of accidents in factories and workshops, we find them to be very unsatisfactory. All fatal and certain non-fatal accidents

¹ Part VI. Mortality of Men in Certain Occupations in 1910, 1911 and 1912.

² See an article by Dr. J. B. S. Haldane in *The Nation* of 20 December, 1924.

³ *Ibid.*

have been compulsorily notifiable since 1878; there have been since that date two¹ extensions of the Factory Acts bringing in fresh classes of premises, and four² changes in the definition of notifiable accidents. This alone would make interpretation of the figures difficult. But far more serious is that there is reason to believe that many minor accidents have been unreported, especially before 1906. There was general agreement in 1911 that the total figure of accidents must not be regarded as reliable.³ The fatal accidents figures, on the other hand, may be regarded as accurate: in statistics, as elsewhere, "stone dead hath no fellow."

Unfortunately we have not reliable or even approximately reliable figures as to the number of employed persons coming within the scope of the Factory Acts, so that we are unable to express the casualties as so many per thousand of employed, and thus to compare them. Under the Factory Act the Home Office has power to demand a triennial return of the number of persons employed, but actually from shortage of staff the information has only been collected at long intervals. The last return was in 1907.⁴ Moreover it is acknowledged that these returns are defective.

If we look at the fatal accident figures in averages for periods of five years, we get the following table:

1889-93	1894-8	1899-1903	1904-8	1909-13	1914-8	1919-23
439	577	1022	1084	1155	1472	1146

If we leave aside the war years as abnormal, two main features emerge. First of all that there was an enormous increase in fatal accidents reported to the Factory Department somewhere round the year 1900. It is clear from such figures as are available that it was not merely that a larger number of persons came within the scope of the Factory Acts and that therefore the number of deaths reported was greater, but that *industry did actually become more*

¹ In 1895 to docks, railway sidings, buildings in course of construction; in 1907 to all laundries.

² In 1891, 1895, 1906 and 1923.

³ Report of Departmental Committee on Accidents, 1911. Cd. 5535.

⁴ A new return is now being made (1925).

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dangerous during those years. The following figures are illustrative :

Year.	Number of Persons employed within scope of Factory Act.	Killed.
1889	3,270,835 ¹	443
1901	4,201,114 ²	782 + 253 ³

Allowing a very wide margin for inaccuracies or discrepancies, the conclusion is irresistible that the risk of loss of life was greater in 1901 than ten years earlier. Other figures could be quoted in support.⁴

The second feature which emerges from the five-year averages is that there has been no marked change in the last twenty years. If we may assume that the number of persons employed, who come within the scope of the Factory Acts, has increased roughly in proportion to the increase in population of Great Britain, that is by one-sixth between 1901 and 1921, we might perhaps infer a very small improvement in the matter of fatal accidents. The figures as to non-fatal accidents, for what they are worth, seem to be more encouraging ; but it is really little better than guessing to attempt to make any general inference from the chaotic and unreliable material which is all that is available.

At all events the figures are sufficiently lurid ; 1,404 persons were killed and 137,369 received non-fatal injuries in 1920, our last year of good trade ; whilst in 1923, a year of trade depression, 867 persons were killed and another 124,684 were injured.

Increased use of machinery was doubtless the factor chiefly responsible for the very big jump in the accident rate between 1890 and 1900. There came after some interval of time an undoubted improvement in the fencing

¹ See Cd. 328 of 1890.

² See Cd. 5535 of 1911, p. 11.

³ The 782 were killed in factories and workshops, and 253 in other premises brought under the Factory Acts in 1895. See *Annual Report of Chief Inspector of Factories, 1907*, p. xxxii.

⁴ See Appendix A. at close of chapter.

and guarding of it, and also a great increase in skill in the use of it. The transition from handwork to machine work, or from the use of one type of machinery to another type of machinery, often means increased accidents, at least for the time being, just as new processes often involve new industrial diseases which are subsequently noticed and remedied. It was said in 1911 that new machines and new types of machinery were being introduced so rapidly that the inspectors could not keep pace with them.¹

Both the fatigue of long hours and the speeding-up² of modern industry have been alleged as causes of accidents. With regard to the former, it would seem to be true of women, but not true to anything like the same extent of men. On the whole its importance as a cause of accidents appears to have been over-rated, and in any case hours did not get any longer in the last thirty years. It is probable that there is more reason to connect a high accident rate with the high speed of modern industry. Dame Adelaide Anderson, formerly Principal Lady Inspector of Factories, has commented on the comparatively small number of accidents occurring in philanthropic institutions where the work is often more leisurely though the guarding may be less efficient.³ Dr. Vernon, making inquiries for the Health of Munition Workers Committee, came to the conclusion that speed of production was a factor of very great importance. The relation between speed and accident rate deserves a great deal more attention and scientific investigation than it has yet received. Crowding of machinery adds very much to risk. The relation between good lighting and safety has already been discussed.⁴

The Departmental Committee on Accidents recommended among other things more specialization on the part of the factory inspectorate and frequent conferences with the employers and workpeople concerned. A good deal has

¹ *Report of Departmental Committee on Accidents*, p. 117, Cd. 5535.

² In the term speeding-up are included the running of the machinery at a greater speed, or the hustling of men by foremen or managers, or induce ments to quicker work by systems of payment by result.

³ *Women in the Factory*, p. 185.

⁴ See p. 103.

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been done in both directions. There has been intensive study by particular inspectors of particular industries, and at least one inspector, Mr. L. C. McNair, has shown a remarkable gift for suggesting, and in some cases designing, safeguards. But a limit is set to specialization by the fact that the whole staff of the inspectorate only numbers 205, that there is much routine work and much demand for vigilance. Along the line of conference with employers and workpeople a good deal has been accomplished. The regulations for the very dangerous wood-working trade were the outcome of conference with sub-committees of various joint industrial councils concerned and also with the makers of machinery. Consultation with makers of machinery has proved to be one of the most fruitful lines of action. It is obviously better that guards should be designed simultaneously with the machines, and should be, if possible, an integral part of them, but this has not been so hitherto in the majority of cases. The counter-sinking of set screws in all revolving parts is an example of what might be done.¹ There has been, as a matter of fact, a great improvement in the design of machine tools during the last fifteen or twenty years. But much remains to be done. And it is important to realize that of all accidents reported about one-third only are directly due to machinery.

Ignorance, carelessness, foolhardiness, and lack of proper supervision are among the commonest causes of accidents. Unskilled labourers are more liable to accidents than skilled labourers, and the accident rate among adolescents is higher than the accident rate among adults. The proper instruction of novices is a matter of the greatest importance, though it is not easy to see how it can be made a legal requirement. Sometimes the incompetence of a responsible person may endanger the lives and limbs of those working under him. It is well worth while considering whether certificates

¹ The Factories Bill of 1924 would have made it an offence to sell or to let on hire machinery constructed after its passing which did not fulfil this condition; and the Home Secretary would have had power to extend the list of conditions required. The twenty-five clauses of this Bill which deal with safety should be studied; they would form together a very elaborate code.

of proficiency, such as are required in the mining industry from any holder of even a post of minor responsibility, might not be required in some of the industries coming under the Factory Acts.¹

The next best thing to preventing accidents is to have the means at hand for treating them properly and promptly. It is only in the last few years that the importance of first-aid equipment has been realized, and especially its value in preventing all sorts of small wounds from becoming septic, a frequent cause of unnecessary suffering and loss of time. First-aid has been for years past a requirement in the regulations for half a dozen "dangerous trades," but the danger guarded against was in most cases specific poisoning or infection—e.g. by chromates or by anthrax spores; apart from that, first-aid equipment, though not compulsory, has been generally supplied in docks and shipyards, at least in the largest centres. Under the Police, Factories, etc. (Miscellaneous Provisions) Act of 1916 welfare orders were issued making first-aid provision compulsory in a number of trades, including amongst others all work at blast furnaces and in foundries, in iron and copper mills, and in other metal works. Where there are more than 500 persons employed an ambulance room must be provided. The Workmen's Compensation Act of 1923 makes the provision of a first-aid box compulsory in every factory, and it must be in the charge of a responsible person.

It is interesting to note that the Departmental Committee on Accidents was apparently prepared in 1910 to relegate a large number of accidents to the category of "unpreventable." To-day we are beginning to prevent the "unpreventable." The work of the Industrial Fatigue Research Board and of the National Institute of Industrial Psychology suggests that we may be able to eliminate a number of accidents due either to some mal-adjustment of the worker to his tools or materials, or else due to worry or irritation or some other unfavourable state of mind.² In particular

¹ See pp. 78, 81 and 211.

² See *The Incidence of Industrial Accidents upon Individuals*. Industrial Fatigue Research Board Report No. 4, 1919. See also Collis and Greenwood, *The Health of the Industrial Worker*, p. 199 et circa.

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scientific vocational guidance is likely to prevent in the future the placing of large numbers of boys and girls in occupations for which by physical or mental make-up they are not well suited. Safety First propoganda, aiming largely at arresting and keeping the attention of those exposed to industrial dangers, is described and discussed in a note at the end of this chapter.¹

The general impression derived from a study, both of such statistics as are available and also of the measures taken for the prevention of accidents, is that nothing like the progress has been made in this direction which has been made in the prevention of disease. There has been, it is true, a good deal of ingenuity and vigilance in the attempts to lessen the number of machinery accidents, but the use of more, heavier, and speedier machinery has outstripped the efforts to guard against the dangers. And by far the greater number of accidents are not directly due to the use of machinery, and comparatively little has been done to lessen them. The most that can be said at present is that attention is again being focussed on the very high accident rate, and that measures are being taken, both by State regulation and as the result of private initiative and propoganda, which may bring about an appreciable diminution in the number of accidents in the next decade or two. Money spent on research work would be well repaid: it is possible that psychologists and engineers, working in collaboration, might do for industrial safety as much as chemists and doctors, working in collaboration, did for industrial health in the years between 1895 and 1905. And we need better statistics. The collection of accurate and comparable returns of accidents is dull and troublesome work, involving a good deal of expense for clerical assistance, but it is an indispensable basis for knowledge, and better statistics would mean ultimately less injury to life and limb.

RISK OF FIRE.

Definition provision against the risk of fire was first made by the Act of 1891, by which all new factories and

¹ Appendix B.

workshops were to be certificated by the local authority as provided with reasonable means of escape. The same Act directs local authorities to examine older factories and workshops from time to time and to prescribe alterations if necessary. The Act of 1891 applied only to factories and workshops employing more than forty persons; but section 15 of the Act of 1901 gave further permissive powers to local authorities to make general by-laws for factories and workshops irrespective of size. The factory inspectors have concurrent jurisdiction with the local authorities.¹

There can be no doubt that many of the smaller local authorities, and some of the larger local authorities, do their work very badly. Only a small proportion of them exercise their powers with regard to factories and workshops employing not more than forty persons. Even in large cities factories of recent erection are sometimes found with doors opening inwards and with other dangerous conditions.² When a works has proper emergency exits they are not infrequently blocked up by material or lumber, or it may happen that only a few of the workers know where the exits are.³ It was also pointed out to the Royal Commission on Fire Brigades and Fire Prevention that the use of a factory is often changed but that the old certificate

¹ In the case of the smaller factories and workshops the factory inspectors have recourse in bad cases to s. 18 of the Act of 1901, which enables them to go to a court of summary jurisdiction and ask for prohibition of the use of a building until a danger to life or to limb has been removed.

² See *Report of Chief Inspector of Factories for 1921*, p. 21. Cd. 1705.

³ "Many instances of obstruction of stairways, landings and passages in factories and workshops have been discovered during the year. A prosecution for such obstruction was taken against a large firm of rag-sorters in the Newcastle district and the full penalty obtained. A case was noted in London of a building with two staircases, one used by the factory workers and the other by the office. The factory staircase roof exit was kept locked by the manager, as he was in the habit of playing tennis with other occupiers of the building on the flat roof, regardless of the fact that the alternative exit in case of fire was not thus available. The tennis court was made accessible to all after threat of prosecution. . . . Complaints are made of the lack of support by some of the smaller urban authorities in Yorkshire. In the case of the Huddersfield district, a case of a woollen mill, employing over forty workers, with four storeys above the ground floor and only one staircase, has so far resulted in no improvement, though two references have been made to the local authority, and the Inspector is proceeding to take action in default." *Report of Chief Inspector of Factories, 1914*, p. 16.

remains in force. Certificates should come up for revision when there is a change of use, and the onus of seeing that this is done should rest upon the occupier.

That two industries are regulated as dangerous trades, because of special risks of fire, has already been mentioned.

There is nothing in the statistics to indicate that the risk of fire is much greater or much less than it used to be. Fires are not very frequent, but the possibilities when a fire does occur are so terrible that every precaution ought to be taken. The Royal Commission in 1921 had a number of recommendations to make, of which the most important was that the Home Secretary should have power to draw up regulations of general application.

III. Other Conditions of Well-Being.

It may be useful at the end of this review to mention one or two conditions of well-being with regard to which there has not been as yet any attempt to legislate.

Comparatively little attention has been paid to the effect of noise upon health and efficiency. Some experiments have been made in the laboratory showing that re-action times are increased by it,¹ and there are a few observations as to its effect on output under ordinary industrial conditions. It seems to be generally agreed by scientific observers that to work in noise compels the expenditure of a great deal of nervous energy. Dr. Agnew wrote in the Interim Report of the Health of Munition Workers Committee:

“The effect of noise upon the individual and its contribution to feelings of over-tiredness and exhaustion must be considerable. In many of the factories, though the work was not heavy, the noise was such that the result of lengthened periods in these factories was almost as severe as exposure to high temperature coupled with hard work.”²

But be it noted also, “It has been maintained, however, that a certain amount of noise, especially at different pitches, is beneficial to the factory worker.”³

¹ Moosé, *Fatigue*, pp. 203-4.

² Cd. 8511.

³ Article in *Journal of Industrial Psychology*, January, 1922.

In one or two occupations, notably boiler-making, deafness is recognized as a specific industrial disease. "Few boiler-makers reach middle-age without suffering some considerable loss of hearing."¹

Complaints are very occasionally made to the factory inspectors of the excessive noisiness of a workplace, but they cannot take any action beyond bringing the matter to the notice of the factory occupier. There is not at present sufficient interest in the subject, nor has the necessary research been done, to make legislation a possibility of the near future. But to the present writer it has long seemed that the noise of industrial communities is an evil far greater than is usually recognized. Just as we are now at last realizing the seriousness of the smoke nuisance, it may well be that in a decade or two we shall realize the damage done by noise.

Considerably more attention has been given to the subject of monotony. The commissioners who inquired into conditions in the textile industries in 1873 commented on the increase of mere repetition work "unrelieved by any interest."² Of recent years it has been one of the common reproaches made against modern industry by its critics, though the critics have seldom been able to suggest any remedy. It is now being made the subject of research by some of our industrial psychologists; we are likely to learn from them in course of time what constitutes monotony (by no means a simple question to answer) and what is its effect on persons of different temperaments. It is premature to say whether it is likely that it will prove to be a matter which can be dealt with by legislation. It is worth noting, however, that some large firms offer inducements to their employees to pass from one kind of work to another.

A third condition of well-being or of ill-being may be mentioned in this somewhat speculative section of a chapter. It matters enormously to human beings whether they work in pleasant surroundings or in ugly surroundings. Notori-

¹ Hope, Hanna & Stalybridge, *Industrial Hygiene*, p. 429.

² Quoted by Hutchins and Harrison, p. 175.

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ously many factories are ugly, and in many cases needlessly ugly. Clearly there is a new conscience on the matter of late years and many improvements are being made, especially where there is ample evidence of forethought and of taste. Of course, the difficulties are greater in some industries than in others, but in most industries something could be done. It is possible that there may be scope here later on for legislation.

APPENDIX A.

STATISTICS AS TO ACCIDENTS.

NOTIFICATIONS OF ACCIDENTS TO HOME OFFICE.

(*First figures are of all accidents; second figures of fatal accidents.*)

1889 . . .	7,967 ⁸⁴³	*1907 . . .	124,325 ¹¹⁷⁹
1890 . . .	8,211 ⁸⁸⁴	1908 . . .	122,154 ¹⁰⁴²
1891 . . .	8,527 ⁸⁹⁵	1909 . . .	117,500 ⁸⁴⁸
1892 . . .	8,643 ⁸²⁸	1910 . . .	129,550 ¹⁰⁸⁰
1893 . . .	8,186 ⁸²²	1911 . . .	148,945 ¹¹⁸²
1894 . . .	9,749 ⁸⁴²	1912 . . .	156,232 ¹²⁸⁰
1895 . . .	10,466 ⁸⁵⁵	1913 . . .	178,161 ¹³⁰⁹
1896 . . .	33,557 ⁸⁹⁸	1914 . . .	159,413 ¹²⁸⁷
1897 . . .	40,474 ⁸⁵⁸	1915 . . .	Not published ¹⁴⁰⁴
1898 . . .	57,562 ⁷⁸⁷	1916 . . .	" " ¹⁵⁰⁷
1899 . . .	70,760 ⁸⁷¹	1917 . . .	" " ¹⁵²⁸
1900 . . .	79,020 ¹⁰⁴⁵	1918 . . .	162,154 ¹⁵⁷⁹
1901 . . .	83,760 ¹⁰³⁵	1919 . . .	124,638 ¹³²⁵
1902 . . .	90,335 ¹¹¹⁸	1920 . . .	138,773 ¹⁴⁰⁴
1903 . . .	92,600 ¹⁰⁴⁷	1921 . . .	92,565 ⁸⁸¹
1904 . . .	92,969 ¹⁰¹⁸	†1922 . . .	97,986 ⁸⁴⁸
1905 . . .	100,609 ¹⁰⁹³	1923 . . .	125,551 ⁸⁸⁷
1906 . . .	111,904 ¹¹¹⁸	‡1924 . . .	169,723 ⁸⁸⁸

* Laundries included for first time.

† Ireland no longer included.

‡ New standard of reportability.

A number of figures are given in an appendix to the Report of the Chief Inspector of Factories for 1907 (Cd. 4166 of 1908). The number of accidents reported in factories and workshops rose from 8,211 in 1890, to 25,970 in 1900, and to 40,310 in 1907.

The following accident rates per 10,000 persons employed in factories are given :

	Fatal Accidents.						Non-Fatal Accidents.					
	Adults.		Young Persons.		Children.		Adults.		Young Persons.		Children.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1898	2.1	0.1	2.0	0.2	2.0	—	161	22	219	44	87	31
1901	2.6	0.1	2.4	0.2	1.5	—	227	38	284	58	92	31
1904	2.6	0.0	1.8	0.3	0.6	—	257	34	308	61	101	30

The number of accidents caused by power-driven machinery was stated to be :

(Large figure is of all accidents ; small figure of fatal accidents only).

1897.	1898.	1899.	1900.	1901.
14,188 ²⁸⁷	16,776 ²⁸⁹	19,622 ²⁹¹	23,408 ²⁷²	24,440 ²⁸¹
1902.	1903.	1904.	1905.	1906.
25,174 ⁴¹⁷	25,400 ²⁷⁹	25,141 ²⁴⁷	26,953 ²⁶⁰	30,119 ³⁶⁶
				35,148 ⁴²⁰

Cranes, circular saws and hoists are indicated as being among the kinds of machinery in the use of which there was the greatest increase in the number of accidents.

Figures are also quoted showing that the number of accidents, both fatal and non-fatal, occurring in the manufacture of cotton between 1895 and 1907 increased far more rapidly than the amount of raw material consumed, and that the number of accidents, both fatal and non-fatal, occurring in the ship-building industry increased more rapidly than the tonnage of ships built.

Since 1906 there have been published annually figures showing the number of accidents in respect of which proceedings have been taken under the Workmen's Compensa-

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tion Act of that year and under the Employers' Liability Act. There is also a return of the number of persons employed, under six occupational headings. Unfortunately the figures are not strictly comparable with those published by the Factory Department, since they include clerical staffs and others not included in the latter; moreover the grouping of occupations is different. Still these figures give us a useful new index of the increase or decrease of the accident rate.

STATISTICS OF COMPENSATION AND PROCEEDINGS UNDER THE WORKMEN'S COMPENSATION ACT AND EMPLOYERS' LIABILITY ACT.

	Factories.			Docks.		
	Number Employed.	Fatal Cases.	Disablements.	Number Employed.	Fatal Cases.	Disablements.
1908	5,497,988	951	136,357	Not stated	156	10,591
1909	4,585,855	744	123,134	130,886	169	11,621
1910	4,943,532	883	152,483	128,878	174	13,346
1911	5,214,940	999	175,496	138,359	196	15,249
1912	5,250,431	1,037	188,480	158,598	225	16,973
1913	5,342,625	1,091	208,949	140,820	207	17,147
1914	4,995,668	1,061	190,103	124,708	196	14,602
1915	}		No Figures Available.			
1916						
1917						
1918						
1919	6,127,706	1,165	183,358	161,371	135	10,196
1920	5,996,246	1,276	194,232	169,572	154	11,913
1921	5,218,311	844	135,584	127,844	82	8,668
1922	5,119,388	708	138,478	122,030	92	9,843
1923	5,103,240	647	169,192	143,942	117	12,059

Whilst it is necessary to be careful not to attach too much importance to any one of these sets of figures, yet it is significant that they mostly point in the same direction. The increase in the number of accidents, both fatal and non-fatal, is greater than can be accounted for plausibly either by the expansion of industry or by better reporting.

APPENDIX B.

THE "SAFETY FIRST" MOVEMENT.

Some of the best British firms have attempted for many years past to reduce to the lowest possible limits the number of accidents by vigilance, by inquiry into causes, and by propaganda calculated to make and keep the workers alert to the dangers of their occupations. It was in America, however, that a name was given to such attempts and that propaganda on a big scale was started. It might well be in America that such action was taken, for the casualties were enormous. The National Safety Council, with its slogan of Safety First, was able to point to some amazing reductions in the number of accidents.¹

The British Industrial "Safety First" Association was founded in 1918 and it held its first Conference in London in 1920. The justification for Safety First work is the fact, to which the factory inspectors have called attention repeatedly, that the greater number of accidents are not due to the absence of mechanical guards, are not indeed directly due to the use of machinery. Ladders are placed carelessly and men slip from them, or men stumble over material which has been left lying about, or tools are dropped from a height. Or weights are lifted awkwardly and strains occur, or hot liquid is splashed, or small wounds fail to receive attention and become septic. Indeed the paradox might almost be maintained that the dangerous processes are the least dangerous; men know the risks and take precautions, whilst they often do not realize, or else despise, the smaller risks.

It has been proved by abundant experience that one of the surest ways to reduce the number of accidents is to have someone in a works whose special business it shall be to try to achieve that result. It is better, where it is possible, that he should be set aside exclusively for the task, but that, of course, can only be in big businesses, and much

¹ Thus in 1916 in the foundry of the Commonwealth Steel Company of St. Louis, out of 2,500 employees there were 769 injured; in 1918 the number injured was reduced to 124.

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can be effected by giving a man a part-time responsibility. The next most important thing is to secure an accurate record of accidents and adequate discussion as to their cause and what steps can be taken to prevent a repetition ; works councils and shop committees often play an important part in this. A great deal depends upon the proper instruction of new-comers, especially boys and girls, as to risks and precautions. And popular propoganda is needed to impress upon the mind of every worker the need for vigilance and care.

The British Industrial "Safety First" Association is a voluntary society which conducts propoganda, and which offers also to its members certain services. It issues pamphlets on such subjects as *The Organization of a "Safety First" Campaign* or *Good Lighting as an Aid to Safety*. It offers a monthly supply of posters, mainly pictorial, calculated to bring home to the dullest imagination common industrial dangers and the precautions desirable. The methods of advertisement which din into us the merits of some patent food can be applied usefully to impress upon a factory operative that she must keep her hair inside her cap unless she wants to pay a visit to the ambulance room. The British Industrial "Safety First" Association has also an expert safety engineer, who is willing to visit works and to advise on safety methods. It acts as a central bureau for ideas as to accidents prevention.

Some remarkable results are claimed already for Safety First methods. Of one big paper mill near London it is reported that in 1920 their employees lost 4,235 days through accidents, but in 1921 this figure was reduced to 1,225½ days (or over 71 per cent) though there was only a comparatively small decrease in the total number of persons employed and the total number of hours worked.¹ The weakness, however, of the voluntary Safety First movement is shown by the smallness of the Association's membership. In 1923 only 130 firms belonged to it. It is true that they were nearly all very big firms ; it is probably true also that many firms adopt "safety first" methods

¹ Quoted in *Report of Chief Inspector of Factories, 1921*. Cd. 175 of 1922.

without belonging to the Association, and that the propaganda tells far beyond the membership. But it is clear that only a small part of industry is touched ; and the firms unreached include those firms which most need to adopt the method. Whilst the British Industrial Safety First Association is likely to increase in strength, and certainly ought to do so, it would be wrong to attach too high hopes to merely voluntary effort or to give up considering the possibilities of extending statutory regulation.¹ It does not seem impossible that some adoption of " safety first " methods might be made compulsory,² e.g. display of approved posters.

¹ Sir Gerald Bellhouse's statement (at a Safety First Conference in 1923) that he did not consider it was possible to do much more by statutory regulations, seems to me unduly pessimistic.

² Something of the kind would seem to be in contemplation in Section 34 of the Factories Bill of 1923.

" Where it appears to the Secretary of State that, in view of the number and nature of accidents occurring in any factory or class of factories, special provision ought to be made at that factory or at factories of that class to secure the safety of persons employed therein, he may by order require the occupier to make such reasonable provision by arrangements for special supervision in regard to safety, investigation of the circumstances and causes of accidents, and otherwise as may be specified in the order."

CHAPTER X.

THE WAR PERIOD AND ITS EFFECT UPON FACTORY LEGISLATION.

It would be difficult to find any aspect of the life of our nation which was not affected by the War; most certainly factory legislation and its administration were influenced profoundly by it. In one sense the War was in regard to them an episode with temporary effects, some of them good and some of them bad. In another sense the War was an event of tremendous importance, hastening much needed changes, educating rapidly, and marking definitely the beginning of a new era with a more positive and more scientific outlook.

I.

Almost immediately on the commencement of the War applications for extensions of overtime began to come in from employers in those industries which were rendered suddenly busy. Temporary Orders were made under section 150 of the Factory Act which provides that

"in case of any public emergency the Secretary of State may, by order, to the extent and during the period named by him, exempt from this Act any factory or workshop belonging to the Crown or any factory or workshop in respect of work which is being done on behalf of the Crown under a contract specified in the Order."

In the following year the powers of exemption were extended by the Defence of the Realm Regulations, clause 6a, to

"any factory or workshop in which the Secretary of State is satisfied that by reason of the loss of men through enlistment or transference to Government, or of other circumstances arising out of the present war, exemption is necessary to secure the carrying on of work required in the national interest."

By the end of 1915 this very wide category included, or could be held to include, practically every factory and workshop in the country.

The policy of the Home Office was to make, wherever possible, a General Order for an industry, but they thought it necessary in a number of instances to make special Orders for individual works. Regulations were relaxed as to the employment of protected persons. The amount of overtime permitted to women was increased to two hours a day for five days in the week. Young persons, to whom overtime is normally forbidden, were allowed to work this overtime also. Usually, but not always, Saturday afternoons and Sundays were kept free. In the case of ordnance factories and munition works, things were much worse; women and young persons were allowed to work on Saturdays and on Sundays and at night. By Christmas, 1914, protected persons were working in some cases close on 80 hours per week. But $67\frac{1}{2}$ hours per week was more common. As for the men, who were without any legal protection at all, 70 to 90 hours a week were common, over 90 hours were not infrequent, and there were even cases in excess of 100 hours.¹

A certain number of children were exempted from school attendance by local education authorities. For the most part this occurred in country districts and they went to agricultural work, but a small number² went to work in factories. Furthermore there were a considerable number of children illegally absent from school; in the first two years of the War it was notoriously hard to secure school attendance, and to prosecute for non-attendance often

¹ See *Final Report of the Health of Munition Workers Committee*, pp. 29 and 30. Cd. 9065 of 1918.

² Between 1 September, 1914, and 31 January, 1915, there were 135 exempted children entered factories or workshops. See Cd. 7881 of 1915.

meant a snub from the magistrate or the imposition of a merely nominal fine.¹

In the opinion of the Home Office, employers kept for the most part within the limits, very generous limits truly, allowed them. Irregularities were chiefly of a formal kind, such as neglect to apply for renewal of a time-expired Order.² There were, however, some nasty cases of breach of the law and of acquiescence by magistrates in it. A summons, in respect of two girls who were worked for thirty hours and twenty-five and a half hours respectively without any break, was twice dismissed by a magistrate on the ground of "national urgency."³

Both the panic and the furious unresting work lasted a comparatively short time. Even before the end of 1914 it was realized by many that to work long hours for seven days a week was to defeat the end in view. The question of fatigue began to occupy the attention of all concerned in production. In 1915 employers were asking for much less latitude. The inquiries of the Health of Munition Workers Committee established beyond all cavil the folly of long hours from the standpoint of output. In September, 1916, the Home Office issued a new General Order. The hours of women were reduced to 60 a week, and the hours of boys to 65 (if on day work) or 63 (if on night work). Night work was prohibited to girls under 16, and very sparingly permitted to boys under 16. In the course of the next eighteen months the relaxations were still further curtailed.

By 1917 manufacturers all over the country were making experiments in reduction of hours, and they were discovering the truth of what Robert Owen had affirmed and practised ninety years before, that short hours are good business as well as good humanity. The new knowledge received a great deal of publicity. There was a marked change in public opinion, and it was no longer difficult to obtain

¹ E.g. at Sittingbourne, where the attendance officer prosecuted eleven parents for failing to send their children to school, the justices dismissed the cases without hearing evidence. Cd. 7881.

² *Chief Inspector of Factories Report*, 1915, p. 9. Cd. 8276.

³ See Cole's *Labour in War Time*, p. 273.

convictions in cases of illegal employment. When the War ceased in November, 1918, there was a prompt reduction of hours in almost every industry, bringing them well under the Factory Act limit and far below the pre-war level.

There can be little doubt on the whole that the health of the industrial workers during the War was good, in spite of the immense strain to which many of them were subjected. Some of the adolescents suffered badly in the first year, before regulation and supervision had become efficient. Women, who poured into men's work, showed an amazing capacity for doing sustained heavy work without apparent bad consequences. Among the men the chief sufferers from excessive strain were foremen and managers, who often found it extremely difficult to obtain any respite from their duties.

The good health of the workers can probably be ascribed in no small measure to the excitement of the time; men and women were sustained by the feeling that they were "doing their bit" for their country. There was also the important fact that wages were good, and the even more important fact that employment was steady. And much was due to the increased attention given to welfare conditions as the war progressed. A large number of works became "controlled establishments" under the Munitions Act of 1915. In January, 1916, the Ministry of Munitions established a Welfare Section, which encouraged managers of "controlled" works to appoint welfare supervisors to start canteens, and in other ways to add to the well-being of the employees. As most "controlled" establishments were making extremely good profits, and as expenditure on welfare schemes ranked as working expenses to be deducted from the sum on which excess profits duty had to be paid, there was little difficulty in persuading employers. In the case of factories employing women and girls at night, and in the case of factories where trinitrotoluene was made or used, it was compulsory to have a welfare supervisor. By the end of the War there were some 800 welfare supervisors employed in munition factories, and a very large number in other factories.

II.

Whilst health in general was good there were, however, increases of some of the specific industrial diseases, and new industrial diseases emerged. There was a recrudescence of phosphorus poisoning. There was an increase in arsenical poisoning, and an even greater increase in mercurial poisoning. There were more cases of anthrax, due probably to the use of inferior wools. Against these increases must be set a heavy drop in lead poisoning, possibly due to a more sparing use of lead in those industries in which it is most dangerous.

Already in the autumn of 1914 cases were occurring of jaundice among the operatives employed in "doping" the wings of aeroplanes with tetrachlorethane. Special precautions were arranged: all work of this kind was carried on in a separate room, exhaust ventilation was installed, and workers were excluded from the room at meal times. Meanwhile experiments were made to find a less noxious substance, and ultimately acetone substitutes were discovered and employed. The use of tetrachlorethane ceased in September, 1916; there had been seventy cases of toxic jaundice, of which 12 were fatal.¹ Toxic jaundice also occurred from the manufacture and use of trinitrotoluene for explosives. The first fatality took place in February, 1915,² and in the next two years a large number of cases occurred, of which many were fatal. In November 1915, toxic jaundice was added to the list of notifiable diseases. Precautions were taken,³ similar in nature to those taken in the use of tetrachlorethane but even more drastic. No persons under the age of sixteen were allowed to be employed. No person of any age was allowed to be employed for more than a fortnight at a time on work involving the use of T.N.T., except by special permission of the medical officer. There were weekly medical examinations, and at the

¹ *Chief Inspector of Factories Report, 1917.* Cd. 9108.

² Cd. 9108.

³ Rules were issued by the Ministry of Munitions under Regulation 35 AA of the Defence of the Realm Act. See Cd. 8494 of 1917. Regulation 35 AA issued in 1917 gave power to draw up rules for any factory manufacturing explosives or materials required for explosives.

National Filling Factories there were resident medical officers. Canteens and cloak-rooms had to be provided, and milk had to be supplied to the workers. The number of cases dropped very much in the last two years of the War; there were a few cases during the breaking up of war material after the Armistice. Toxic jaundice was entirely a war disease.

The evidence as to the effect of the War on safety is too defective to allow of any very positive conclusions. The usual statistics of all accidents were not published. Some statistics for the Midland Division, quoted in the annual report for 1918,¹ point to a decrease. Against that there are the very definite figures as to fatal accidents, the number of deaths in 1917 being the highest on record.²

III.

The most far-reaching action taken during the War was the setting up of a Health of Munition Workers Committee. This body was appointed in September, 1915, by the Minister of Munitions with the concurrence of the Home Secretary. It sat for two and a half years under the chairmanship of Sir George Newman, and it produced twenty-one memoranda and an interim report and a final report. Over 210,000 copies of these memoranda and reports were sold or distributed, and they were the basis of innumerable articles and discussions. The effect on public opinion was tremendous.

Whilst the Committee was appointed specifically to deal with questions affecting the health and efficiency of munition workers, most of its investigations and recommendations were as a matter of fact applicable to all kinds of industry at all times. It made the first comprehensive scientific inquiry into the most favourable conditions for efficient work. The pioneer reforms of employers had usually been inspired, as the Final Report points out,³ by social and moral motives rather than by scientific or economic evidence.

¹ Cd. 340, p. iv.

² See p. 120.

³ *Final Report of the Health of Munition Workers Committee*, p. 8. Cd. 9065 of 1918.

There had been little attempt to find out by observation and experiment what was the best temperature, the best lighting, the best arrangement of spells and shifts. The Home Office had promoted a good many scientific inquiries, but they were usually into the conditions of specifically "dangerous trades." The Health of Munition Workers Committee set itself to find out what were the most favourable conditions for health and efficiency. Naturally many of its findings are of the provisional nature necessary in all exploration of an almost new field, but they are of great value; and of even greater value is the whole conception of the approach to the problem.

Some of the more important findings of the Committee can be summarized shortly. They established that hours could in a large number of cases be reduced substantially without reducing output: that work before breakfast is a mistake; that the five-hour spell allowed under the Factory Act is too long for many women and young persons; that short pauses within the spell prevent fatigue and usually increase output. They reported Sunday work to be unpopular, uneconomical, and not productive of increased output; and that night work is open to serious objection, even for men. They emphasized the importance of facilities for obtaining good meals. They would like to see a great extension both of the preliminary medical examination of workers and of subsequent periodic medical examinations. Accidents, in their opinion, might be much reduced in number by intelligent co-operation of foremen and workers; and in any case their bad effects might be minimized by proper first-aid provision. Workrooms should be clean and dry; and the air should be cool, dry, and moving. Facilities for washing are in many cases not good enough. Protective clothing is desirable for all workers; and cloak-rooms are necessary for health, especially of women and girls. Seats should be provided, where possible, in the workroom. There was a guarded commendation of welfare supervision.

Some steps in the direction of these ideals were taken in a large number of works, either under pressure from the Government or by voluntary initiative. But their complete

adoption, like the adoption of the recommendations of other great reports, will doubtless be piecemeal and be spread over a number of years. The work inaugurated by the Health of Munition Workers Committee did not end with the dissolution of the Committees; it was carried on by the Medical Research Council and by the Industrial Fatigue Research Board, as well as by voluntary bodies. And in a large number of factories there is now systematic observation and experiment which was lacking before.

The Defence of the Realm Acts and the Munitions of War Acts were, through the operation of some of their sections, factory legislation. Both of them came to an end with the War. The only permanent piece of factory legislation passed during the War period was the Police, Factories etc. (Miscellaneous Provisions) Act of 1916. This gave to the Home Secretary power in certain cases¹ to prescribe conditions of welfare, as distinct from general safety and sanitation, even in the absence of any special danger; and there began to be built up for different industries a series of orders similar to those which had come into force during the past twenty-five years in the "dangerous trades."

The following matters were specified in the Act:

- Arrangements for preparing and heating and taking meals.
- The supply of drinking water.
- The supply of protective clothing.
- Ambulance and first-aid arrangements.
- The supply and use of seats in work-rooms.
- Facilities for washing.
- Accommodation for clothing.
- Arrangements for supervision of workers.

With a general power of adding other matters by Special Order. The only addition to the list so far has been in 1923 Provision of rest-rooms.²

Welfare Orders have been made so far for fourteen trades. Provision of cloak-rooms and of mess-rooms, of protective

¹ "Where it appears to the Secretary of State that the conditions and circumstances of employment or the nature of the processes are such as to require special provision." Police, Factories, etc., Act.

² This list is taken from Tillyard's *The Worker and the State*, p. 273.

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clothing, and of first-aid boxes, have been the most common requirements. In one or two industries, e.g. in fruit preserving, seats must be provided, in some processes for all workers, in other processes for women only. For those who are engaged in the gutting of herrings there must be a rest-room. By one of the earliest orders under this Act there must be in every factory employing twenty-five or more persons a supply of drinking water.

With the ending of the War and the disappearance of the "controlled establishments," welfare measures, both compulsory and voluntary, received a considerable set-back, and this was naturally accentuated when the slump in trade came two years later. The set-back is probably temporary. The lessons of wartime experience have not been forgotten and many employers realize now that welfare pays. The Chief Inspector of Factories was able to write in his annual report for 1922 that "even in these days of economy welfare is holding its own."¹ The extension of the operations of the Police, Factories, etc., Act has gone on slowly and cautiously, much hampered in some cases by the lack of appreciation of the workers. And research work has gone on, though a good deal hampered by lack of adequate funds.

This book is only concerned with the War as it affected factory legislation and its administration, not with its wider effects. During the War some industrial evils, e.g. most of the industrial poisonings, were certainly worse than before, whilst some new dangers emerged, e.g. T.N.T. poisoning. In the first year of the War large numbers of workers were exposed to damaging fatigue and many conditions were bad. In the latter years of the War, work was very hard but conditions were in many ways better than they had ever been before. If other circumstances of wartime could be left out of account—they cannot be—it would probably be true to say that thousands of workers were happier and healthier than at any previous time.

The permanent effects of the War upon factory legislation

¹ Cd. 1920 of 1922.

and its administration can be said quite definitely to be good. We live in a new world of opinion since the War, at once more scientific and more humane. Much has already been changed in consequence, and much more is likely to be changed.

ANALYSIS OF WELFARE ORDERS UNDER POLICE,
 FACTORIES, ETC. (MISCELLANEOUS PROVISIONS) ACT.

I. List of Trades for which Orders have been made.

1. Manufacture of Tin or Terne Plates.
2. Blast Furnaces, Copper Mills, Foundries, and Metal Works.
3. All trades.
4. Tanning with Bichromates.
5. Dyeing with Bichromates.
6. Glass Works.
7. Shell Factories employing women.
8. Saw Mills and Woodworking Factories.
9. Oil Cake Mills.
10. Fruit Preserving.
11. Laundries.
12. Gut-scraping and Gut-washing.
13. Gutting, Salting and Packing of Herrings.
14. Glass Bevelling.
15. Hollow Ware and Galvanizing.

II. Conditions Imposed: numbers refer to the above trades.

Supply of drinking water . . . All factories employing 25 or more workers.

Supply of protective clothing: I, 4, 5, 9, 10, 11, 12, 14, 15

Provision of meal-rooms . . . I, 4, 5, 6, 9, 10, 11, 12, 13

First-aid or Ambulance Provision 2, 4, 5, 8, 9, 10, 11, 12, 13

Provision of Seats 7, 9, 10, 11, 12

Facilities for Washing 4, 9, 10, 11, 12, 13, 14

Provision of Cloak-rooms I, 4, 5, 6, 9, 10, 11, 12, 13, 14

Supervision of Workers

Provision of rest-room 13

CHAPTER XI.

INTERNATIONAL ACTION.

THERE has probably been no period in the world's history when the industrial life of one nation was not shaped to an appreciable extent by the industrial conditions of its neighbours; and commercial pacts date far back into antiquity. But it is a commonplace that the last hundred years, and especially the last fifty years, have interwoven the fortunes of men all over the world as never before. Quick means of communication have made it natural that there should be more comparison of industrial conditions and more mutual consultation; and the development of world markets and of world competition made attempts to arrive at international standards inevitable. As far back as 1818 Robert Owen, pioneer in this as in so many matters, pressed upon the statesmen of Europe the desirability of an international agreement to limit the hours of labour, a proposal to which they paid little attention. During the 'forties Daniel Legrand, a French manufacturer, addressed letters on the same subject to various Governments. The first Labour International dates back to 1864; and at later dates there were founded, or held sporadically, various international conferences of trade unionists, which naturally did something to approximate programmes. There were corresponding international associations of employers; and a steady increase of associations of many kinds and for many purposes prepared the way for agreements between the nations at a later date.

In 1881 the Swiss Federal Council approached the legations of the various European countries to suggest an international conference on labour legislation. The response was not

encouraging. The British Home Secretary was opposed, "deeming it impracticable to conclude an international convention on the subject of factory legislation."¹ Opinion changed during the next decade, and at the beginning of 1890 the Swiss Federal Council was about to issue another invitation, when to everyone's astonishment the German Government anticipated them. The Swiss Government stood aside, and the Conference was held at Berlin in March.

A resolution was passed at it in favour of a day's rest in seven for all industrial workers, the day to be Sunday if possible. The British delegates supported this, considering apparently that an old Act of 1649 covered it in our case. The Act of 1649 has since proved to be useless for the purpose, and an explicit prohibition of Sunday labour for adult male workers (with the necessary exceptions) is still lacking.

Another recommendation was that women should be excluded from industrial employment for four weeks after childbirth. Effect was given to this in our Factory Act of 1891.

Lord Salisbury authorized our plenipotentiaries to vote for a resolution recommending the raising of the minimum age for labour to twelve years. He had previously spoken in the House of Lords of the benefits likely to accrue to this country from the Conference, since foreign labour conditions needed levelling up to our conditions and we were competing at a disadvantage. It was therefore the more discreditable that, as we have seen already,² nine years elapsed before legislation was passed making twelve years the legal limit, and even then it was done by a private member's Bill.

The Conference also recommended that the actual working hours of children should be reduced to 4½ per day and those of young persons to 8½ per day (exclusive of meal-times in both cases). Several of the countries whose representatives voted for this recommendation failed to carry it into effect, and our country was among these. Child labour has disappeared since, but the hours allowed to young persons

¹ *The International Protection of Labour*, by B. E. Lowe, Ph.D., p. 20.

² Chapter II.

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are still in excess of what was recommended at Berlin in 1890.

In 1904 the Swiss Federal Council again invited the Governments of Europe to an official conference. A preliminary meeting was held at Berne in May, 1905, and a diplomatic conference in the following year. The subjects discussed were the night work of women and the restriction of the use of white phosphorus in lucifer making. It was agreed to abolish the former : in the case of Great Britain this only needed a very small amendment of the existing law.¹ The British Government was hostile to the proposed abolition of the use of white phosphorus and refused to sign a Convention unless all other manufacturing nations, including Japan, did so also. The conduct of our representatives, and the instructions given to them by our Government, were severely criticized by Sir Charles Dilke and others in the House of Commons. The occurrence of one or two cases of phosphorus necrosis, and some diminution in our markets for white phosphorus matches owing to prohibition of import by countries adopting the Convention, brought about a change of mind, and in 1908 we passed a White Phosphorus Matches Prohibition Act.

One important new consideration was raised by the representatives of Great Britain at this Conference. It was felt that there was a danger that legislation might be passed but not enforced, in which case the nations which were more conscientious or more efficient in administration would have subjected themselves to a handicap. It was therefore proposed that an International Commission should be appointed, which should have power to inquire into disputes as to interpretation or execution of the Conventions. A resolution was carried in favour of this, but the opposition of the minority was so strong that it was felt better to let the matter drop.²

In 1913 the Swiss Federal Council, prompted by the International Association for Labour Legislation, again invited the Governments of Europe to a conference. The

¹ That is, so far as factory legislation was concerned ; there was a small amendment needed of the law as to labour at coal mines.

² For an account of the Berne Conference see the Memorandum on the International Conference on Labour Regulation. Cd. 3271 of 1906.

subjects to be discussed were the night work of young persons and the hours of work for women and young persons. A preliminary conference of experts was held at Berne in September. Thirteen nations, including our own, agreed to prohibit night work of young persons, subject to some exceptions and delays; and the same nations agreed to a ten and a half hour day and sixty hour week for women and young persons. The diplomatic conference to convert these recommendations into conventions was to have been held in September, 1914, but it was of course impossible to hold it.

It would be a hopelessly inadequate account of international relations in regard to factory legislation which told only of official conferences. Voluntary associations played a part of great importance. Chief of these was the International Association for Labour Legislation, which was founded during the Paris Exhibition of 1900 by a group of enthusiasts, some of whom had been official delegates at Berlin in 1890. There were national sections of the Association in a number of countries and an International Labour Office at Basle. The work of the Association was research and propaganda, and from 1906 onwards a monthly bulletin of labour legislation was issued in several languages. Conferences were held every two years.¹ They were attended mainly by social reformers and by trade union leaders, more sparingly by Government officials and by well-disposed business men. The British Government sent official delegates for the first time in 1910. The weakness of the Association lay in its unofficial nature and in the inadequate

¹ In 1902 at Cologne: resolutions were passed against night work of women and against the use of white phosphorus.

In 1903 at Basle: a resolution was passed concerning the use of white lead in painting.

In 1904 at Basle: a resolution was passed against night work of young persons.

In 1906 at Geneva: resolution concerning homeworkers.

In 1908 at Lucerne: resolutions concerning hours, including the hours of adult males in certain industries.

In 1910 at Lugano: a very comprehensive programme, including most of the above subjects.

In 1912 at Zurich: resolutions on hours and truck (abolition of fines and deductions). See B. E. Lowe, *The International Protection of Labour*, pp. 254 *et seq.*

representation of employers; proposals tended therefore to be a little academic. It was also hampered by lack of sufficient funds.¹ But it did invaluable work in preparing the way for the official conferences of 1905 and 1913, and it explored the difficulties and developed the technique of international co-operation. Without its pioneering the present official International Labour Organization could not have got to work so quickly and so efficiently.²

The pre-war non-official International Labour Office held together during the War and issued its usual bulletins; conferences were of course impossible. Towards the end of the War, when the idea of a League of Nations began to be talked about a good deal, the International Labour Office, without consulting the national Associations, put forward a request that an official International Labour Organization be provided for in the Treaty of Peace.

The plenipotentiaries assembled at Versailles for the Peace Conference set up a Commission on World Labour Regulation on 31 January, 1919. The American Labour leader, Mr. Samuel Gompers, was appointed chairman. Our British delegates were Mr. G. N. Barnes and Sir Malcolm Delevingne. A draft put forward by the British delegates was taken as the basis of discussion. Six delegates came over from the British Trade Union Parliamentary Committee to advise on the proposals.³ Comment was invited from the Dominion Premiers, but they did not respond.⁴ By the end of February the Commission adjourned for ten days, having reached a considerable measure of agreement. During the interval the proposals were subjected to further criticism by trade unionists and others, and, in particular, representations were made concerning the status of women.⁵

¹ "The revenue of the Association was in 1911 about 85,000 francs, of which 63,550 francs came from subsidies from fourteen Governments." L. S. Woolf, *International Government*, pp. 184-5.

² Of other similar organizations the most important was the International Congress on Accidents to Operatives, which was first held at Paris in 1889. A permanent committee was formed with headquarters at Paris. Conferences were held in 1891, 1894 and 1897, the last being attended by official delegates from fourteen nations, including our own. See *Report of Chief Inspector of Factories, 1897*. Cd. 8965.

³ See G. N. Barnes' *From Workshop to War Cabinet*.

⁴ *Ibid.*

⁵ *Ibid.*

After revision the report was presented to a Plenary Session of the Peace Conference on 11 April, and it was accepted with slight modifications. With the signing of the Treaty of Versailles on 28 June, the International Labour Organization became an integral part of the machinery of the League of Nations.

The organization set up by the Peace Treaty consists of two parts: an International Labour Conference to be held not less than once a year, and an International Labour Office in permanent function. The duty of the Conference is to discuss and to send forward Conventions and Recommendations¹ for the consideration of the Governments of the various nations. The duty of the International Labour Office is to collect and to distribute information, to promote research, to receive from the various Governments reports as to their action with regard to Conventions, and to prepare business for the Conference.

It had been the hope of some of those most concerned for international labour legislation that the Peace Treaty might create a super-Parliament, whose decisions should be binding upon all the constituent States of the League of Nations. The discussions at Versailles made it clear that the world was not ready for such a step, that nations would not consent to abrogate their sovereignty. The International Labour Organization was therefore endowed very sparingly with compulsory powers. No State is bound to pass the legislation proposed. But every State is bound to place before its Parliament, or other competent authority, within eighteen months any Convention passed by two-thirds of the delegates at that Conference. It may reject the Convention; if so, the matter is at an end. If, on the other hand, it ratifies the Convention, then it is under obligation to pass the legislation necessary to give it effect. If it should fail to do so, a complaint may be lodged with the International Labour Office by any party to the Conference. The International Labour Office may request the Secretary General of the League of Nations to appoint a Commission

¹ A Recommendation is merely a statement of principle; a Convention is a proposal for definite legislation.

of Inquiry. The Commission of Inquiry has a right to all the information bearing on the subject which any Government can supply. It is the duty of the Commission of Inquiry to recommend what steps should be taken to remove the cause of complaint and to suggest appropriate economic measures which might be taken in case of recalcitrance.

It is clear that the sanctions behind the International Labour Organization are weak. The procedure is long and cumbrous, and it is not likely at present that economic coercion would in any case be applied. The real sanctions are moral sanctions. The decisions arrived at by international conference should carry enormous weight, and the due fulfilment of obligations undertaken should be insisted upon by the public opinion of each country.

Each nation is represented at the International Labour Conferences by four delegates. Two of these are Government representatives; a third is representative of the employers and a fourth of the workers. The representatives of the employers and of the workers are appointed by Government, but under conditions carefully laid down to secure that they are genuinely representative of those interests.¹ Each delegate has an individual vote; so that the voice of a nation may be divided. In addition to the delegates there are present at the Conference a number of advisers: each delegate may be accompanied by two advisers for each item on the agenda, and any of these advisers may on occasion take the place of a delegate. Where matters specially concerning women are discussed, one of the advisers must be a woman.

Objection has been taken to the tripartite nature of the delegations on the ground that it emphasizes class antagonisms. But the answer to that is quite simple: the differ-

¹ "The Members undertake to nominate non-Government Delegates and advisers chosen in agreement with the industrial organisations, if such organisations exist, which are most representative of employers or of work-people, as the case may be, in their respective countries. . . .

"The credentials of Delegates and their advisers shall be subject to scrutiny by the Conference, which may, by two-thirds of the votes cast by the Delegates present, refuse to admit any Delegate or adviser whom it deems not to have been nominated in accordance with this Article." Article 389 of the Treaty of Versailles.

ences of interest exist and must be reckoned with, and friction is likely to be minimized if provision is made for discussion at all stages of procedure. The arrangement was the product of the war-time experience of many nations ; Governments had found everywhere that the best way, if not the only way, to get things done was to take into consultation the representatives of the employers and of the workpeople. Objection has also been taken to the preponderance of Government delegates, and a proposal to make the three representations equal was narrowly lost at the Peace Conference. It would seem wise that the Government, with whom rests in the last resort the decision to apply or not to apply the legislation proposed, should be so strongly represented as to have a special sense of responsibility. Moreover, the Government representatives are likely to have both a detachment and an experience of administrative possibilities which neither of the other parties can have.

The first International Labour Conference under the League of Nations was held at Washington in the autumn of 1919. The subjects discussed were the eight-hour day or forty-eight hour week, unemployment, the employment of women before and after childbirth, at night, and in unhealthy processes ; and the employment of children. On the first point a Convention was agreed to for a nine-hour day and forty-eight hour week, with many exceptions for special industries and for backward countries. With regard to unemployment a Convention was adopted providing for exchange of information and the establishment of free public labour exchanges. Another Convention would prohibit the employment of women for six weeks after childbirth, and give them the right to six weeks' absence from work before childbirth, in each case with maintenance from the State or by insurance. Yet another Convention was directed against night work of women.¹ The Conven-

¹ This Convention differs but slightly from that adopted at Berne in 1906. Whilst that excepted establishments employing less than ten persons, this applied it to all but domestic workshops. There were, moreover, a number of countries represented at Washington which had not been represented at Berne.

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tion as to young persons prohibited their employment at night, except that young persons over the age of sixteen might work on certain continuous processes. The Convention as to children put the minimum age of employment at fourteen, with exceptions for Oriental countries. Recommendations were also passed to minimize danger from lead and from anthrax.

The second International Labour Conference was entirely occupied with questions concerning seamen. The third International Labour Conference was mainly occupied with questions concerning agricultural labourers; but it adopted also a Convention with regard to a weekly day of rest, and (after sharp controversy) a Convention prohibiting the use of white lead in interior decoration.¹ This Convention has not been ratified, and in view of the strenuous opposition of the manufacturers of white lead the prospects of an early ratification are not good. The fourth International Labour Conference dealt with emigration. The fifth International Labour Conference, whose programme was kept light on grounds of economy, had for its subject factory inspection.²

Already in the autumn of 1919 the high hopes in which the International Labour Organization had come into being were a little clouded by the non-adhesion of America to the League of Nations. The year 1920 was in many ways a year of disillusionment, passing into despondency and violent reaction against the bright expectations which had marked the end of the War. Soaring prices and colossal Government expenditure provoked a panic and a cry for economies, which soon became heartless and senseless. The need for higher production became a watchword of the day and, regardless of war-time experience, higher production was supposed to require inferior labour conditions. All those who had been half convinced or silenced by the passionate aspirations and glowing enthusiasms of 1918 and 1919 began to re-assert themselves and to declare that the reformers had led us along mistaken paths. The power

¹ The Commission decided by a narrow majority in favour of regulation, but the Conference by one vote reversed that decision in favour of prohibition. The Convention finally adopted was a compromise.

² See Chapter XII.

of the Trade Unions was badly affected by unprecedented unemployment, until on Black Friday¹ it was obvious that they could do no more for the time being than put up delaying resistance to reductions in wages and other attacks on their standard of life. In such an atmosphere it was not likely that there would be much progressive legislation. Effect was given in 1920 to the Conventions on the employment of women and young persons.² But the British Government failed to ratify the Convention on the Forty-eight Hour Week and the Convention on Employment of Women before and after childbirth. In February, 1921, the Minister of Health, in reply to a question, informed the House of Commons that the Government did not intend to ratify this latter Convention. On the same day the Minister of Labour stated that negotiations were still in progress with representatives of employers and of trade unions with a view to securing an agreed Bill as to Hours of Employment. On 27 May, 1921, five months after the normal period for ratification and within two months of the end of this normal extended period, Mr. Barnes moved for the submission of the Conventions to Parliament. The Government took the view, in which they were fortified by the opinion of the Attorney-General, that the Crown, and not Parliament, was the competent authority of Article 405.³ Their attitude and their inaction were severely criticized by several of their own supporters, but they obtained a majority. However, they consented to a day for discussion. When it came they announced their intention of not ratifying for the present the Convention on Hours of Employment, the reason given being the difficulty of applying it to the railwaymen.

The Eight-hour Day had been prominent among the

¹ Black Friday is the name given in the Labour world to 15 April, 1921, when the railwaymen decided not to come out on strike in support of the coal-miners, their partners in the famous Triple Alliance.

² By the Women and Young Persons (Employment in Lead Processes) Act and the Women, Young Persons and Children Act.

³ "Each of the Members undertakes that it will . . . bring the recommendation or draft convention before the authority or authorities within whose competence the matter lies, for the enactment of legislation, or other action." Treaty of Versailles.

principles asserted in the Treaty of Versailles ; and at the Washington Conference the British delegates had voted in favour of the Convention by express Government instructions. Our refusal to ratify was bound to have a profound moral effect ; it was a heavy blow at the prestige of the International Labour Organization. Other nations followed our example, and up to the present time no industrial country of the first rank has ratified it.¹ As the economic situation went from bad to worse, there was a collapse of idealism. A note of discouragement was very noticeable in the meetings of the International Labour Conference in 1921 and 1922, and in the publications of the International Labour Office. As part of the economy campaign there came attacks upon the cost of the International Labour Office, and its budget was cut,² though fortunately not to such an extent as to cripple its work. It would seem strange, if we were not accustomed to such modes of thought, that men who were prepared to spend £6,000,000 on a new naval base were critical of an expenditure by this nation of £30,000 on the machinery for international consultation and co-operation on labour legislation.

The question as to the competent authority in this country, to which Conventions must be submitted, has not been definitely settled. The Government did, however, in 1923 ask for the approval by the House of Commons of its policy with regard to the Conventions and Recommendations of the Conferences of 1921 and 1922. They were not prepared to ratify either the Convention with

¹ It has been ratified by Bulgaria, Czecho-Slovakia, Greece, India and Roumania. But India is allowed a sixty-hour week by the Convention. Italy has ratified conditionally on ratification by the chief industrial countries, and forty-eight hour legislation is actually in operation.

² CAPTAIN R. TERRELL asked the Chancellor of the Exchequer if he was aware that the International Labour Bureau at Geneva was costing the British taxpayers over £30,000 per annum, and in view of the absence of any benefits to the taxpayers, what prospects were there of a reduction in the expenditure ?

SIR W. JOYNSON-HICKS : The answer to the first part of the question was in the affirmative. Largely as a result of the efforts of the British Government representatives the proposed total Estimates for 1924 were reduced from 9,118,780 francs to approximately 7,000,000 francs. The Government were fully alive to the situation, and at next week's meeting of the governing body would press for a still further reduction of this figure." Hansard, 5 June, 1923.

regard to the weekly day of rest nor with regard to the prohibition of white lead in interior decoration.

Whilst the results to date are disappointing, it is still true that international industrial action has been placed on a new footing. There is now standing machinery for the summoning of International Conferences at least once a year instead of at irregular intervals on the initiative of some energetic Government as in the past. Moreover, there is direct communication between the departments concerned with industrial legislation without the intervention of the Foreign Offices. The educational value of the Conferences themselves is immense, and the time taken to discuss the Director's Report tends to increase. Any delegate can ask a question as to what is being done in any country, so that there is a counterpart to question time in the House of Commons, and it cannot be doubted that to be liable to have to explain oneself is a valuable stimulus to good conduct. And whilst Governments may and do refuse to accept Conventions, yet these give a considerable moral reinforcement to the efforts of those in each country who are pressing for reforms. It is a reasonable hope that as we recover from the trough of depression, a depression which is both economic and moral, and as the League of Nations gains prestige, failure to ratify will become exceptional. Some day we shall press on to the stage when Conventions become binding upon all nations. But the day for the Parliament of Man has not yet arrived.

Meanwhile the permanence of the International Labour Office, with a staff growing rapidly in experience, assures a constant interchange of knowledge and of opinion which was lacking before. Just as our inspectorate, with its access to all factories in every kind of industry, has been able to do much to raise the general level of conditions, so the International Labour Office, with the experience of all the countries at its disposal, should be able to institute a systematic comparison of country with country, which should be of immense value. To give a small example, the International Labour Office sent round an inquiry not

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long ago into the health of photo-engravers, which as a matter of fact was found in our country to be generally satisfactory. It has also made an inquiry into the working of the three-shift system. Common knowledge is likely to lead to common principles and common action. And the International Labour Organization is likely to affect administration at least as much as legislation. Quite clearly this is necessary if the different countries are to reach some kind of parity in industrial standards. Grumbings have been heard already from manufacturers in some trades that they are handicapped in competition with foreign countries with similar legislation but inferior inspection, though there is no solid reason for believing that the differences in standards of inspection are sufficient to constitute a serious handicap on competitors. Factory inspection was the subject before the Conference of 1923, and many questions of principle and method were discussed.¹ In administration, as in legislation, any premature or unwise attempt at uniformity might easily bring international action into discredit; and indeed it is equivalence rather than uniformity which alone is possible or desirable. It is likely that the continuous systematic exchange of opinion and experience will prove at least as productive of good as the formal agreements reached.

¹ See Chapter XII.

CHAPTER XII.
THE ENFORCEMENT OF THE LAW.

I. The Factory Inspectorate.

I.

THE early history of the factory inspectorate has already been summarized.¹ In 1891 it was entirely male and almost entirely unspecialized. In both these respects the next two decades were to see great changes.

In 1893 there were made two experiments in extension of the range of persons from whom the inspectorate was recruited: working men inspectors were appointed, and women inspectors were appointed, in each case as the culmination of a good many years of agitation.

Between 1880 and 1890 there had been a few inspectors drawn from the ranks of the manual workers. In 1893 special arrangements were made for a separate examination by which working men could enter as "inspectors' assistants"; these were employed almost exclusively in inspecting the smaller factories and the workshops, and they were not promoted to the higher ranks. In practice they have not been particularly efficient; the advantages of having been themselves ordinary workers do not compensate for the disadvantages of a very limited education. Their ranks are no longer being recruited and that particular class of inspector will soon cease to exist. But with the facilities offered by the Workers Educational Association and such institutions as Ruskin College, there is no reason why manual workers should not from time to time become factory inspectors by passing the ordinary examination.

¹ Chapter I.

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Since the reorganization of the staff in 1921, a fair number of the existing inspectors' assistants have been absorbed by special examination into the ranks of the ordinary inspectors with good results, and a considerable number of factory inspectors are engineers who have served their apprenticeship in the shops.

The agitation for the appointment of women as factory inspectors dates back to the 'seventies, and in 1878 a resolution in this sense was carried by the Trade Union Congress. It is interesting to-day to see how the proposal appeared to intelligent and usually progressive minded men. The Chief Inspector of Factories wrote in this Report for 1879 :

"I doubt very much whether the office of Factory Inspector is one suitable for women. . . . It is seldom necessary to put a single question to a female. Possibly some details, here and there, might be superintended by a female Inspector, but looking at what is required at the hands of an Inspector, I fail to see advantages likely to arise from her ministration in a factory . . . so opposite to the sphere of her good work in the hospital, the school, or the home."¹

Sir Charles Dilke had wanted to appoint women as factory inspectors when he was acting virtually² as Under-Secretary for Home Affairs in 1883; but the Home Secretary, Sir William Harcourt, would not allow it. Sir Charles Dilke was able, however, as President of the Local Government Board, to appoint women inspectors for Local Government posts, and that constituted a useful precedent. The appointment of Women Assistant Commissioners to the Royal Commission on Labour in 1891 was a further step towards the recognition of the need for both sexes in the consideration and regulation of industrial life. And in the spring of 1893 the Home Secretary, Mr. Asquith, appointed the two first women factory inspectors, Miss May Abraham and Miss Mary Paterson. The former had been one of

¹ Quoted by Dame Adelaide Anderson in *Women in the Factory*, p. 190.

² He was President of the Local Government Board; but, in the pressure of work thrown on Sir William Harcourt by the Phoenix Park murders he was asked to take charge of much of the business of the Home Office. See Gwynn and Tuckwell's *Life of Sir Charles Dilke*, pp. 306 and 308.

the Women Assistant Commissioners just referred to. The number of women inspectors was increased to four in 1894; it increased gradually to thirty-four in 1923. The women worked directly under the Chief Inspector of Factories and not under the superintending inspectors of divisions. In 1896 they were constituted into a branch of the Factory Department of the Home Office with Miss May Abraham as head, subject to the control of the Chief Inspector of Factories. In 1902 the Principal Woman Inspector was given power to authorize prosecutions. In 1908 the women factory inspectors were assigned to divisions centring round the great industrial cities. They continued to work as an inspectorate parallel with the men's inspectorate until 1921, when the men's and women's inspectorates were amalgamated. The reasons given for the change were that the inspection of factories by men and by women, responsible to different immediate chiefs, caused friction between themselves and also between themselves and the factory occupiers. It was considered that there was no real differentiation of function to justify the separation of men and women, and that it was out of harmony with modern ideas. It was felt that the women might lose something in freedom of action, but that they would gain in status and in eligibility for the highest posts. There has been a good deal of controversy about the advisability of the change, and it is well known that some of the women inspectors were bitterly opposed to it. It would appear, however, to have been justified, and certainly women have at the present time a very considerable number of the higher appointments.

As to the success of women as factory inspectors there cannot be the slightest doubt, and the explanation of it is not difficult to find. In the first place these posts were few and with high responsibility attaching to them, and women of great ability were attracted to them. In the second place, it was a new field for women, and naturally they have occupied it with enthusiasm, and they have felt it specially incumbent on them, for the honour of their sex, to make good. In the third place, the number of posts

in industrial life open to women, beyond the comparatively unskilled posts of typists and clerks, has been until recently, and indeed still is, quite small; and there has not been keen competition for women with the kind of ability which the factory inspectors have shown. All these conditions are changing, as the barriers between the sexes are falling one after another, and it remains to be seen whether women will be as conspicuously useful in the inspectorate in the next thirty years as they have been in the last thirty years. But they have made good their claim to equality with men in this sphere, and there is no reason to suppose that they will not maintain it.¹

In one sense the appointment of women to the inspectorate marked another stage in the struggle for right of entry to spheres of life previously occupied by men alone, and in the light of later developments this would seem to be its chief significance. But in another sense, and certainly in the first years, it was the beginning of specialization in the inspectorate. Women were appointed in the first instance not to do just the same work as the men were doing, but to deal with matters which concerned women; and in the early days their duties were confined to that. Other specialization in the inspectorate followed soon after. As the Factory Department attempted to regulate dangerous trade after dangerous trade, it was found that the help of qualified technicians of one kind or another was essential. The medical inspectorate was started in 1898 when Dr. T. M. Legge was appointed. There are now four medical inspectors in addition to the Senior Medical Inspector. The first woman medical inspector was Miss E. M. Hewitt, appointed in 1921.²

Round about 1900 there was a sudden leap in the number of accidents due to electricity, and as it was obvious that the use of electricity was going to increase rapidly, and

¹ Jealousy between the sexes has undoubtedly been acute in the factory inspectorate in the past, and sometimes with very undesirable results. This sex antagonism is by no means all ancient history, and it is much to be hoped that such of it as remains may speedily disappear.

² There had been a woman with medical qualifications on the general inspectorate previous to this.

equally obvious that no one without a special technical training could do much to minimize the dangers, or to see that regulations with that end in view were observed, an electrical inspector was appointed, Mr. G. S. Ram, who is to-day head of that branch, with four assistants who were appointed in 1921.

The post of Inspector of Dangerous Trades was created in 1908 and from it developed the present staff of engineering experts. There is a Senior Engineering Inspector with four assistants.

The only other specialists are the Inspectors of Textile Particulars, of whom there are five. Their business is to see that the workers in the textile industries, where the system of payment is extraordinarily complicated, have a clear and accurate statement of the sum due to them and the way it is computed. This branch dates back to 1892.

The specialists are not assigned to districts, but work under their immediate chiefs, the senior of that branch, who is directly responsible to the Chief Inspector of Factories. They do not, however, visit any works without previous consultation with the head of the district in which it is. They are indeed experts whom he calls in when their particular knowledge is needed.

Most of the great industrial countries have found it necessary to appoint specialist inspectors. In two of the German States there are chemical experts on the staff. At present the British inspectorate relies on the knowledge of chemistry possessed by members of the ordinary staff, or else it calls in the help of the Government chemist. If there is a further specialization, however, it might well be in this direction; there is a great deal of work still to be done on industrial poisoning. And it is likely that the addition of one or two industrial psychologists to the staff might have very beneficial effects, more especially with regard to the lessening of accidents.

The brunt of the task of enforcing the Factory Acts falls upon the staff of non-specialized inspectors. There can be little doubt that their duties are well performed

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on the whole. There is no reason to believe that the law is systematically evaded in any matters of importance. Employers are not as a rule unfriendly in their comments on the factory inspectors, though they are sometimes sarcastic as to their knowledge of machinery and processes. Their chief complaint is that the inspectors are changed frequently and that different men have different requirements. Sometimes they complain also that employers doing the same kind of work receive unequal treatment. They may be indignant at what seems a pedantic interpretation of the letter of the law. But there is no suggestion of wilful injustice, still less of corruption. The factory inspectors appear for the most part to do their work tactfully. The women appear to cause more irritation than the men.

The chief difficulty with the present staff of inspectors is that it is too small to get through the work which should be done. It was laid down at the International Labour Conference at Geneva in 1923 that there should be at least one inspection of each workplace each year, but that is quite impossible in England with the present staff.¹ There are small factories which escape inspection over a considerably longer period. One gets the impression also that many of the factory inspectors do not at present have either the time or the access to new literature to keep their knowledge up to date.

II.

Very early in the history of factory legislation it was found that the factory inspectors did some of their best work, not as mere vigilance officers for the enforcement of the law, but as disseminators of ideas from factory to

¹ In 1923 there were 139,920 factories known to the Home Office. The number of visits to these factories was 189,580. But many factories will have been visited several times. There were 140,850 workshops, which received from the factory inspectors 115,675 visits. In addition there were docks, warehouses, railway sidings, and buildings in course of construction to be inspected.

It was stated to the Departmental Committee on Accidents in 1910 that about a quarter of the factories and a third of the workshops were not visited annually in the years 1905-9.

factory and from industry to industry, and that by many of the employers they came to be regarded as valued consultants on questions of health and safety. All this side of their work has received of recent years an enormous impetus, and whilst the sheer vigilance work is still needed and must not be in any way relaxed, yet increasingly things get done by conference and agreement. "We are becoming more and more an Advisory Body and less and less a set of policemen," said the Chief Inspector of Factories a year or two ago; and, similarly, Dame Adelaide Anderson, in her account of the work of the women inspectors, notes an increasing tendency after 1911 to rely on education and persuasion rather than on coercion. This is the more possible to-day because the War, with its demand for huge production under conditions of exceptional strain, forced questions of industrial welfare to the front, and it has left behind a new conscience and a new understanding. Much more frequently than in the past, the initiative comes from the employers and the workers themselves. Developments in industrial organization have facilitated this, and in particular the establishment of Joint Industrial Councils.

The factory inspectors naturally follow with keen interest the experiments of enlightened employers, and they are in close and friendly touch with a number of voluntary bodies concerning themselves with industrial questions. There are the two associations dealing with welfare work: the Industrial Welfare Society, which is a propagandist body, and the Welfare Workers' Institute, which is the association of professional Welfare workers. Another most useful body of recent growth is the British Industrial Safety First Association.¹ There is co-operation in research both with official and with unofficial bodies, as, for instance, with the Industrial Fatigue Research Board and with the National Institute of Industrial Psychology. And there is frequent interchange of help with other Government Departments. The Ministry of Transport, for example, will consult the Home Office as to safety regulations for railway wagons. It would be easily possible to increase

¹ See p. 123.

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the list of relationships of the factory inspectorate, if there were any point in a mere catalogue.

When in 1833 four inspectors of factories were appointed there were many misgivings, among the supporters of factory legislation as well as among its opponents. There were two main objections raised: on the one hand it was feared that they would prove to be intolerable inquisitors, and this fear was by no means confined to the one side; and on the other hand there was an expectation that they would prove to be mere tools of the governing classes and useless for their purpose. Neither fear has been justified, and the factory inspectors have with few exceptions made a wise use of their powers and opportunities; they have not feared to coerce, when nothing but coercion would serve the purpose, but they have shown a patience and a tact which have disarmed a great deal of opposition. To a large extent they are able to carry reform by sheer superior knowledge: to any objection that something or other cannot be done, they are usually able to answer that as a matter of fact it is being done in some other factory or in some other industry. The late Mr. Jesse Collings once complained that the women inspectors went beyond their province of seeing that the laws were obeyed and made themselves "missionaries." It is an extension of function to which few people would object. The new outlook on industrial conditions and industrial regulations is of the same nature as the new outlook in many other spheres of life: it is an emphasis on positive and preventive measures rather than on dealing with mischiefs after they have arisen. It is better to get machinery designed by the makers with a view to safety than to go round enforcing its safeguarding afterwards; it is better to get factories properly planned from the start than to enforce such alterations as can subsequently be made; it is better to have weak or unsuitable boys and girls kept away from processes which would certainly do them an injury, than to attempt to deal with the effects; it is better to have in the minds of the employers and the operatives themselves a knowledge of the precautions necessary for health and for safety than to

impose regulations from without which are accepted grudgingly and neglected when there is no fear of detection. And in all these matters the factory inspectors can and do help.

To say this is in no way to deny the need of coercion and the educational value of law : a legal responsibility is often the first way in which a moral responsibility is brought home, and there will always be a few who will respond to nothing else. Nor must the stress laid on the importance of getting co-operation and initiative from those engaged in a trade, both employers and operatives, be allowed to weaken in any way the right and duty of the whole community to regulate it. The next Factory Act, when it comes, will doubtless necessitate more vigilance from the factory inspectors until the new regulations have been brought thoroughly home to those affected by them.

III.

Factory Inspection was the subject of the fifth session of the International Labour Conference, held at Geneva in 1923. Obviously some equivalence of standards is highly desirable in the different countries ; otherwise the effect of ratified conventions might press very unequally on manufacturers in countries with strict and lax inspection. The discussions at the Conference and the replies to the questionnaire which had preceded it, elicited a comparison of methods in the different countries which was most useful, and it doubtless did much to make administrators face for themselves more clearly the principles underlying their work. At the very start a divergence in outlook and in method was revealed by the fact that the subject of the conference appeared in French and English, the two official languages of the International Labour Office, as "*l'inspection du travail*" and as "*factory inspection*" respectively. The French had thought of labour laws as a whole ; the British thought only of Factory Acts. When the discrepancy was noticed, a preliminary question was framed and circulated to all the countries :

" Do you consider it desirable to indicate common principles for the supervision of the enforcement of the laws regulating

conditions of labour in the different forms of economic activity ? Or do you consider that special methods and particular principles for the supervision of labour laws are required for the different forms of activity ? ”

Historically, legislation has grown up separately in this country for the regulation of work in mines, railways, factories, shops, and so on. Should these codes be regarded as parts of one whole, or are they so diverse in nature that there is nothing to be gained by any attempt to elicit common principles ? The British Government took the latter view, and so did the Government of India. The latter expressed its position concisely :

“ The Government of India consider that special methods are required for the supervision of labour laws for different forms of activity. Considerations which govern the organization of a system of factory inspection are different from those applicable to inspection services for other forms of employment.”

The majority of countries replied in an opposite sense. The labour laws are felt to constitute a whole. In some of the countries there is a general inspectorate responsible for the enforcement of all kinds of labour laws. In other countries there are special inspectorates for special classes of industry, but they are expected to collaborate closely with the general inspectorate and with another, and they are in many cases subject to a single chief.

Different countries have different needs ; the scale and diversity of industries and questions of distance enter largely into consideration ; and there is no reason to expect or to want uniformity. Yet on the main point it is difficult to believe that the British Government was right. It is a weakness, and not a strength, that British labour legislation and its administration bear all the marks of a piecemeal origin ; that the mining inspectors, the factory inspectors, the Trade Board inspectors, the inspectors of shops, are responsible to different Government Departments, and work independently of one another. The British Government, in its reply, did not say that consideration of general principles might not have some use at some time, but it

was evidently anxious to defer any such consideration indefinitely; and equally evidently it was quite happy with its unrelated inspectorates. There is indeed a certain amount of mutual consultation both in planning new legislation and as to the methods and results of inspection, but it is sporadic. Closer co-operation is needed within the nation, as between the nations, to ensure uniformity in principle and policy, and even more to ensure that the whole field of labour is covered and that *there are no gaps*. At present it is nobody's duty to think about those workers who are not protected by special laws. There are large classes of workers needing protection and not receiving it, notably clerks in offices, who often work under conditions of ventilation and temperature which would not be allowed in any factory. The least that should be done to meet the situation is the holding at regular intervals of inter-departmental conferences to review the whole field of labour, and to discuss labour legislation and its enforcement.

It is probably true that a generalized inspectorate is only efficient and economical in a small country or in one which is not highly industrialized, but it may well be asked whether the administration of our various labour laws should not come, if not under one Chief Inspector (as in Sweden), at least under one Government Department. At present the Home Office is responsible for the administration of the Factory Acts, the Ministry of Labour for that of the Trade Boards Acts, the Ministry of Transport for the protection of railwaymen, the Board of Trade for the protection of coalminers, the Ministry of Health (through the local authorities) for the administration of the Shops Acts, and so on. There is much to be said for putting the administration of most, if not all, of this legislation under one Government Department. It is not perhaps theoretically of great importance which Department it is. A good case could be made out logically for putting the inspectorates under the Ministry of Labour. Administration of the Factory Acts has been very efficient under the Home Office, and if any transfer is made, care should be taken that it does not pass under less sympathetic and competent control.

CHAPTER XIII.

THE ENFORCEMENT OF THE LAW.

II. Other Agents. General Considerations.

LOCAL AUTHORITIES.

LEGISLATORS vacillated during many years as to the extent to which the enforcement of some part of the Factory and Workshop Acts should be entrusted to the local authorities. There has not, however, been any substantial change since 1891. To the local authorities is left the supervision of sanitary conditions in workshops (including domestic workshops) and in workplaces, e.g. restaurant kitchens, and they are responsible also for the sanitary regulation of bakehouses. It is also their duty to keep lists of out-workers and to see that no work is carried on in any place "injurious or dangerous to the health of the persons employed."¹ Their powers in regard to risk of fire have already been discussed.²

Local authorities vary very much in keenness and efficiency. Whilst there is little to say against most of the great municipalities, it is unfortunately the case that many of the smaller local authorities, and these by no means always rural authorities, are extremely slack and even recalcitrant. Factory inspectors comment on the lowness of some of their sanitary standards. There is a Home Office Order prescribing a *standard* of sufficient and suitable accommodation in the way of sanitary conveniences, but the Home Office has no power to impose it on local authorities

¹ Factory and Workshop Act, s. 108.

² See pp. 116-118.

which have set up their own standards under S. 22 of the Public Health Amendment Act of 1890.¹ The Home Office has also power to take action itself when a local authority neglects to enforce the law, but naturally this is a step which is undertaken with reluctance. The relation of the central government to local authorities is always one of considerable difficulty, especially where powers overlap as they do in these cases, and the possible slackness of local bodies is part of the price which has to be paid for the educational value of local government. And obviously the examination of the sanitation of a large number of small workshops is most conveniently and most economically made in the course of routine street inspection.²

The work is actually done by sanitary inspectors, or sometimes by inspectors of workshops, acting under the instructions of the Medical Officer of Health. It is part of the weakness of the situation that not all sanitary inspectors enjoy the same security of tenure³ as Medical Officers of Health, who cannot as a rule be dismissed except by permission of the Ministry of Health. Sanitary inspectors need to be safeguarded in the same way against possible pressure or victimization by those whose interests they may threaten in the course of their duties. One could wish also that their salaries and chances of promotion, especially the latter, were more likely to attract able and ambitious men. At present the career of a sanitary inspector is a cul-de-sac.

¹ The Factories Bill of 1924 would have remedied this.

² It has been suggested to me that it should be an instruction to sanitary inspectors to report to the factory inspectors any breaches which they may notice of those clauses of the Factory and Workshop Act for the enforcement of which the local authorities are not responsible (e.g. affixing of abstracts of the Act, observance of regulations for dangerous processes), and that the sanitary inspector should be entitled to a reply informing him what action had been taken.

³ See the Public Health Officers Act 1921, and Orders under it. The position roughly is that the senior full time sanitary inspector of a local authority receiving grants in aid cannot be removed without permission of the Ministry of Health, but that the protection is not extended to his colleagues. In the smaller rural areas (just where personal influences are apt to be strongest), even the Medical Officer of Health, who is often a part time officer, can be dismissed without the consent of the Ministry.

CERTIFYING SURGEONS.

The office of certifying surgeon was created by the Factory Act of 1844, and the main purpose in the first instance was to decide, in days prior to registration of birth, whether a child appeared to be of the legal age for employment. Physical fitness was at first a secondary consideration, but with the coming of the birth certificate it became the chief reason for the medical examination. Indeed, an attempt was made in 1891 to do away with the certifying surgeons on the ground that the Elementary Education Act had rendered their office superfluous. The proposal was rejected. In 1901 an important addition was made to their powers of usefulness, when the Act of that year permitted them to attach conditions to their certificates, a power of which increasing use has been made.¹ But there can be no doubt that the majority of examinations have been perfunctory. It may be said in excuse that the fee has been wretchedly small. The certifying surgeons have also been discouraged by the fact that there was no power to order re-examination after a lapse of time. A Departmental Committee has just reported in favour of linking up the work of the certifying surgeons with that of the school medical officers and providing for periodical medical examinations up to the age of eighteen.² If this were done we should have the means of accumulating knowledge as to the effects on adolescents of industrial employment in those trades which are not technically dangerous.

It is one of the mischievous anomalies of the present Factory Act that the provision as to certificates of fitness does not apply generally to workshops. It happens, therefore, that a boy or girl rejected as unfit for factory life may go into a workshop where the conditions are at least as unsuitable. The Factory Act of 1901 gave power to the Home Secretary to require by Order certificates of fitness

¹ In 1923 there were 300,814 examinations; 9,940 children were rejected and 8,530 children were certified conditionally. Cd. 2135.

² Report of the Departmental Committee on Medical Examination of Young Persons. Cd. 2135. The Factories Bill of 1924 proposed to allow certificates of fitness to be issued for particular kinds of works and subject to re-examinations.

for any class of workshop, and in 1906 such an Order was issued applying to a number of industries.¹ There has been no further Order.

The medical examinations of workers in dangerous industries are considered by appointed surgeons, who are usually the certifying surgeons. There is not the same likelihood that these examinations will be perfunctory; the doctors are on the watch for definite disease of which the danger is well known. But there is a great deal of testimony that they are from time to time deceived by workers who conceal symptoms in order to retain their work.

I. THE MAGISTRATES.

The enforcement of the law is not ultimately in the hands of the inspectors; it is in the hands of the magistrates, who differ widely in their attitude to evidence, in their interpretation of the statutes, and in the leniency or otherwise with which they view infringements of them. The penalties imposed under the Factory Acts are not severe; the narrowness of their range makes them considerable for small offenders but trifling for big firms. Fines range from £1 to £20 for most offences. The greatest fine which can be inflicted for a single offence is £100 for a third violation of the Truck Act. The maximum penalty is always fixed, but the minimum penalty is often at the discretion of the magistrate, who may make it nominal. The maximum penalty can, however, be inflicted in many cases in respect of each person employed contrary to the Act, and the total amount can therefore be substantial. Imprisonment can only be inflicted for forgery or for false declarations.²

¹ File-cutting; carriage-building; rope and twine making; brick and tile making; making of iron and steel cables; making of chains, anchors, grapnels and cart gear; making of nails, screws and rivets; baking bread, biscuits and confectionery; fruit preserving; making, altering, ornamenting, finishing or repairing of wearing apparel by the aid of treadle sewing-machines.

The Factories Bill of 1924 would have abolished the distinction between factories and workshops, and a certificate of fitness would have been required in all cases.

² Imprisonment has several times been suggested as the appropriate punishment for other offences, especially for obstinate and repeated breaches of the law or for breaches which involve risk of life or of serious injury.

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The penalties imposed have not infrequently been absurdly low, and magistrates have sometimes shown a strong bias against the Factory Acts. Thus, a firm of waste manufacturers in Manchester, whose rooms were at temperatures of 36° F., 33° F., and 28½° F., were fined 2s. 6d. in respect of each case.¹ In the same year a firm of blouse manufacturers was prosecuted at the Guildhall, London, for employing young persons without certificates of fitness. Alderman Sir Henry Knight imposed a fine of 1s. in each case, and allowed the barest expenses to the factory inspectors concerned, remarking "This is one of those harassing Acts of Parliament, which are driving business out of the City altogether."² Nor has it been the unpaid magistracy only which has sinned in this way. Stipendiaries have also at times been indifferent to breaches of the Act. In the spring of 1905 a stipendiary at Bradford had before him an employer who had kept a child of thirteen at work for 98½ hours in a week, and a boy of sixteen at work for 106 hours. He imposed a fine of 5s.³

Needless to say, these cases are exceptional; the magistracy, both paid and unpaid, does its work well as a rule.

II. OBSERVANCE OR NON-OBSERVANCE OF THE LAW.

One grave difficulty in the way of the enforcement of the Factory Acts has been the natural fear of the worker lest it should come to the employer's knowledge that he or she had called attention to an abuse. It has been no idle fear. To counteract the deterrence by intimidation, and to make it as easy as possible to convey a complaint, there was founded in 1899 an Indemnity Fund, administered by the Industrial Law Committee. This fund has paid the equivalent of their wages to a considerable number of workers victimized for calling attention to breaches of the law.⁴

¹ *Lancet*, 10 April, 1909.

² *Ibid.*, 1 May, 1909.

³ *Women's Trade Union Review*, April, 1905.

⁴ E.g. in 1910 twenty-five persons were indemnified at a cost of £185, the maximum period being twenty-two weeks. As a specimen of the cases dealt with, may be given the following:

"A woman employed as a toilet-cover fringer met with a serious acci-

Fear of dismissal operates, of course, much more powerfully in times of bad trade. Unemployment insurance and the growing strength of trade unionism have both diminished it.

The value of factory legislation, and especially of the more detailed regulations, must obviously depend in considerable measure upon the loyal and intelligent ¹ acceptance of it by everyone concerned. The British are a law-abiding people, and the majority of us will not usually set at defiance a law when once it has been made. And the habit of observance grows. There has been also, for reasons already discussed, a great increase in understanding of the aims of factory legislation. It is the universal testimony of factory inspectors that there is very little obstructiveness on the part of employers to-day, and that there is far more desire to comply with the spirit as well as with the letter of the law. There is also more understanding on the part of employees of the purpose for which regulations exist. There has been, however, and still is, an enormous amount of deliberate or ignorant non-observance of regulations.

dent, owing to the non-fencing of a shaft, her hair being caught by the machinery. The accident was not reported to the Factory Department by the employer, but was communicated through the agency of three sisters, fellow-workers of the injured woman. A prosecution followed, and the employer was fined for failure to send the required notification, and also for neglecting to fence dangerous machinery. After the prosecution, the employer made every effort to find out which of the workers had reported the accident. He accused the injured woman of informing the inspector and said he would give £50 to know who had made the complaint. Later, he told another worker that if he could not find out he would keep all the girls in a room, and lock the door till they told; and finally, his suspicions being aroused against the three sisters through whom the complaint had actually been made, he dismissed them at once. Another woman, who had taken the injured woman to the hospital in a cab, was also dismissed; and the woman herself, who had been the principal witness in the prosecution, was subjected to such ill-treatment and petty tyranny that after a week or two she found it impossible to remain in her employment."

¹ There have been in the past some bad cases of unintelligent observance of the law. Factory inspectors complained of this with regard to the special rules for the spinning and weaving of flax and tow. One factory inspector wrote in 1899: "I have seen fans erected quite as required, not simply doing no good, but doing positive harm, drawing the dust right from under the carding machines into the operatives' faces and dispersing it throughout the whole area of the workroom. The law has been complied with, but complied with ignorantly." *Report of Chief Inspector of Factories, 1899.*

Masks or gauntlets¹ are not worn, food is taken into dusty places, baths are not used, guards are left off. The excuse is often made that the precautions are troublesome, or that they are a hindrance to workers on piece-rates, but whilst it is true that employers sometimes supply unsuitable protective clothing or other safeguard, the excuse is not in the majority of cases a valid excuse. If the regulation is bad it should be abandoned; if its advantages outweigh the disadvantages it should be observed. It is probable that rather more frequent prosecutions of employees for breaches of regulations might have a salutary effect.

III. OBJECTIVE STANDARDS.

Access to information, and accuracy of record, are necessary if there is to be proper enforcement of legislation. As early as 1819, factory occupiers had been required to display a copy or abstract of the Factory Act. The Act of 1844 required also display of the names and addresses of the factory inspectors and certifying surgeons, and prescribed the keeping of a register of children employed. There were other requirements added in the years between 1844 and 1891.

During the period 1891 to 1924 there have been some notable advances in requirements as to publicity and record. In 1891 there was no notification of industrial disease; and only certain classes of non-fatal accidents were reported.² Even in the case of fatal accidents, the steps taken to inquire into the causes, and to consider what might be done to prevent the occurrence of similar accidents in the future, were singularly inadequate. In 1895

¹ At the dust destructor of one of our great cities men are engaged in picking out tins, rags, waste-paper, and other debris from the dust, as it passes in a carrier along a travelling band. They are likely to receive small cuts from time to time, and such cuts usually become septic. Gauntlets are provided, but on the occasion of my visit very few men were wearing them. There was no question of piece-rate; it was sheer indifference. In this particular case the wearing of gauntlets is not prescribed by statutory regulations; it is merely an obvious, sensible precaution.

² They must be caused by "machinery moved by steam, water or other mechanical power, or through a vat, pan, or other structure filled with hot liquid or molten metal or other substance, or by explosion or by escape of gas, steam or metal."

a girl met with a violent and painful death through a lift accident in a rope works. No representative of the firm was present at the inquest.¹ Nor was any factory inspector present. A clause in the Act of 1895 limited the power of a coroner to hold an inquest in the absence of a factory inspector.² The same Act gave the Home Secretary power to order a formal investigation into the circumstances of any accident. And it was made incumbent on factory occupiers to keep a register of accidents.

Whilst all fatal accidents and some non-fatal accidents had been reportable since 1878, it was not until 1895 that all accidents of any severity³ had to be reported. The same year saw the beginning of the notification of industrial diseases.

Another example of the advance in demand for accuracy and availability of information is the growth of requirements with regard to homeworkers.⁴ Or again, there are in several of the codes for "dangerous trades" requirements of recordkeeping: thus, for instance, registers have to be kept showing the manner in which all horsehair has been dealt with to secure disinfection.

Since 1895 the Home Office has had power to require at intervals of not less than three years a return of the number of persons employed in factories and workshops. Such a record is necessary if the percentage of increase or decrease of accidents and of disease is to be watched. It is regrettable that the Home Office has omitted for many years to exercise its right.⁵ It could be combined with little trouble with the collection of similar but not identical returns made for the purpose of Workmen's Compensation Act statistics.

There are, of course, occasional grumblings at the amount

¹ *Women's Trade Union Review*, October, 1895.

² The inquest must be adjourned unless (a) the accident has not occasioned the death of more than one person; (b) the factory inspector has had twenty-four hours' notice of the inquest; (c) the jury do not object. *Factory and Workshop Act*, s. 21.

³ The accident had to be reported if it were "of such a nature as to prevent the person injured by it from returning to his work in the factory or workshop and doing five hours' work on any day during the next three days."

⁴ See pp. 96-98.

⁵ A return is now (1925) being made.

of clerical work involved in the keeping of these various records; and there would even appear to be a section within the Factory Department of the Home Office who are inclined to deprecate time and money spent in this way. It seems a short-sighted attitude. Without accuracy of record we are just fumbling in the dark, lacking the means of discovering the effect of social legislation or of changes in administration. It would probably pay the country handsomely, and also be in the long run in the interests of the manufacturers themselves, if a good deal more were spent on recording what happened and in making available that record.

IV. OBJECTIVE STANDARDS.

"Adequate," "suitable," "sufficient," "reasonable," are terms which recur frequently in the earlier Factory Acts, and they are found in abundance even in the Act of 1901. But one of the marked features of the period under consideration has been the narrowing down of definition and the replacement of subjective by objective standards. The advantages are obvious. It is a waste of time and of temper to dispute whether a room is reasonably warm or not, when in the first place the temperature can be recorded by a thermometer, and in the second place there can be a general understanding that the temperature must be between certain limits on certain kinds of premises.

The earliest objective standards were in respect of time worked. The Factory Acts of the beginning of the last century did not say that the children were to have "reasonable" leisure; they prescribed the hours during which they might and might not work; and a good deal of experience convinced legislators that these hours must be rigidly defined. Objective standards were easy and natural in the matter of hours, because clocks had long been scientific instruments in common use. Their development in other directions was a slow matter; and in industrial legislation as in other matters precise measurement has advanced rapidly in comparatively recent times.

It was curiously enough in regard to ventilation, a matter

in which on the whole improvement has been tardy, that there were first established precise and detailed standards requiring determination by scientific instruments not in popular use. A schedule of permitted limits of humidity, measured by dry and wet bulb thermometers, was attached to the Cotton Cloth Factories Act of 1889. In the second Cotton Cloth Factories Act of 1897 there was a new objective standard of ventilation set up: "during working hours in no part of the cotton cloth factories shall the proportion of carbonic acid in the air be greater than nine volumes of carbonic acid to every ten thousand volumes of air." In another textile industry a further objective standard of quality of atmosphere has been established since 1907; amongst the regulations for the spinning and weaving of flax and tow is the following:

"No water shall be used in wet-spinning troughs . . . which is liable to cause injury to the health of the persons employed or to yield effluvia; and for the purpose of this regulation any water which absorbs from acid solution of permanganate of potash in four hours at 60° more than 0.5 grain of oxygen per gallon of water shall be deemed to be liable to cause injury to health of the persons employed."

And, again in regard to ventilation, we find in the Regulations for Certain Processes in the Manufacture of India-Rubber, issued in 1922, two objective standards laid down with regard to the general ventilation of workrooms. Restrictions are made as to the employment of young persons in rooms where fume processes are carried on, but the restriction does not apply "where a standard of general ventilation of 30 changes of air per hour is maintained." In the same regulations it is laid down that "where a plenum system is used for the supply of fresh air to a room in which a fume process is carried on, the air supplied by such system shall not enter the room at a velocity which exceeds 350 feet per minute." The velocity of air is also limited, though in this case it is a minimum and not a maximum which is fixed, in the wool-sorting regulations, where the use of an "efficient" screen is prescribed, and it is added that "no opening screen shall be deemed to be

efficient " unless " at no point of the screen within 18 inches from the centre shall the velocity of the exhaust draught be less than 100 linear feet per minute."

It has already been pointed out that standards of temperature have been fixed by various regulations.¹ It will be seen, therefore, that with regard to the atmosphere of workplaces there has been developed in various industries a series of objective standards of temperature, humidity, purity, and motion. These standards are likely to be more widely applied in the future. Additions to them are also likely. Dr. Owens' Dust Counter gives us the means of measuring accurately the quantity and nature of the solid particles in the air. We are travelling far from the undefined " sufficient " ventilation of the Factory Act.

Objective standards for lighting have been worked out in considerable detail, though they have not yet been applied.²

In several cases where dangerous substances are used it has been found necessary to make very careful definitions. There is, for instance, the definition of a soluble lead compound, agreed to by the International Labour Conference at Washington in 1919. " A lead compound shall be considered as soluble if it contains more than five per cent of its weight (estimated as metallic lead) soluble in a quarter of one per cent solution of hydrochloric acid." The Workmen's Compensation (Silicosis) Act of 1918 applies to " the manufacture of bricks or other articles containing not less than 80 per cent. of silica."

One of the directions in which the fixing of objective standards might usefully be extended is in the definition of competence. The Factory Act requires that boilers be examined every fourteen months by a " competent person," but it does not say what constitutes competence: and consequently there is a good deal of trouble and a certain number of accidents occur. The electricity regulations also speak of " competent person " without explanation. There is no instance at present of a standard of competence being laid down in the Factory Acts or in any of the regula-

¹ See pp. 99-100.

² See pp. 104-105.

tions made under them. In this respect there is a sharp contrast with the Coal Mines Acts, under which standards of competence have been laid down for several kinds of workers in positions of minor, as well as major, responsibility.¹ It is the opinion of the writer that the setting up of standards of competence might contribute a good deal to the diminution of accidents. In particular they seem to be needed in the construction of buildings,² in the manufacture of chemicals, and in electrical work.³ It is also possible, though it would be premature to say more, that the industrial psychologists may be able to furnish us before long with useful general tests, and that it may be possible to prescribe their use by future codes.

It should be noted that it is by no means necessary that all occupiers of factories should be able to make the tests, requiring in some cases expensive apparatus and considerable scientific knowledge. One advantage of an objective standard is that it makes possible a presumptive standard. An occupier, for instance, who takes care that his work-rooms are well ventilated, need not be able to make all the tests for purity. But the inspector can make such tests,

¹ E.g. "A fireman, examiner or deputy must (a) be the holder either of a first-class or second-class certificate of competency, or (b) must have attained the age of twenty-five years and have had at least five years' practical experience underground in a mine, of which not less than two years have been at the face of the workings of a mine, and in addition must hold certificates as to his ability to make accurate tests for inflammable gas, and as to his hearing and eyesight." Tillyard, *The Worker and the State*, p. 177.

The following, from an account of a coroner's inquest upon a Manchester hoistman, bears also on this question of competence.

"Mr. Duguid, H.M. Inspector of Factories, said he wanted to point out that it was hardly fair to an attendant who was neither an engineer nor a mechanic to make him solely responsible for the supervision of a hoist. The testing of a safety catch, especially, was a difficult and rather dangerous operation which ought to be entrusted only to a skilled engineer." *Manchester Guardian*, 27 June, 1925.

² Where they have actually been proposed. See p. 81.

³ See p. 78. It is significant to find the Electrical Inspector of Mines writing of three fatal accidents in 1923 that the circumstances suggest "lack of that knowledge and experience which was necessary for the work they were undertaking." He considers it to be "an anomaly that although firemen, examiners and deputies, as well as surveyors, under-managers and managers, must possess official certificates of competency, no such criterion has been established in the case of the electricians and assistant electricians."

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and it can be a reasonable presumption on his part that if the air falls below the standard the arrangements for ventilation are seriously defective. Thus, if a flax-spinner is satisfied that the water he is using is reasonably pure, he need not test it by the standard laid down in the regulations. But, on the other hand, if an inspector finds that the water absorbs from permanganate of potash more than the amount of oxygen stipulated in the regulation, he can assume without further proof that the injection of it into the air is injurious to the health of the operatives and he can take proceedings.

The replacement of subjective standards by precise and scientific objective standards¹ is one of the great changes which is making it easier to enforce the law. The other great change is the increase in understanding of the purpose of the law and of willingness to co-operate in its observance.

¹ Reference should be made to the various footnotes in which proposals of the Factories Bill of 1924 are given. This Bill would have carried us a great deal further in the direction of objective standards, not so much by immediate prescription as by the power it would have allowed to the Home Secretary to establish them.

CHAPTER XIV.

TRADE UNIONS AND WHITLEY COUNCILS IN RELATION TO FACTORY LEGISLATION.

I.

THE reader was reminded in one of the opening paragraphs of this book that round about 1890 there were extensions of trade unionism to fresh classes of workers and that there was a marked change in outlook. It is no part of our work to tell the general story either of the growth of trade unionism or of the growth of the Labour Party in the thirty years which followed. It is sufficiently dramatic that the year 1924 found a Labour Government in power and that both the Home Secretary and the Under-Secretary for Home Affairs, together with many of their colleagues, were former trade union officials.

The change in status which this implies can best be shown by one or two illustrations. When in 1890 the British Government was invited to send delegates to the International Labour Conference at Berlin, the question was asked in Parliament whether any representatives of the working classes would be sent. The reply was that there would be no representatives of any particular class.¹ The delegation actually included two manufacturers but no trade unionist, though one secretary of a trade union was attached to it as an expert adviser. It would be almost unthinkable now, even if it were not expressly provided against in the Covenant of the League of Nations, that a delegation to an International Labour Conference should include employers but not trade unionists.

Again, when in 1891 the Home Secretary was given

¹ See Hansard, 11 and 18 March, 1890.

power to make special rules for factories where dangerous trades were carried on, it was provided that in case of objection by the employers, there should be an inquiry and an arbitration. No provision was made for hearing the views of the workpeople, and it was not until 1895 that they obtained the right to be represented at such inquiries. As late as 1907, when there was an inquiry into the proposed regulations for electrical trades, it was noted that, whilst practically all the employers affected were represented, "workmen, or their representatives, took no active part in the proceedings, no doubt because the electrical workers are not organized."¹ To-day the Electrical Trades Union is a powerful, not to say self-assertive, body which would certainly make its views known in any revision of the regulations.

With the growth of the Parliamentary Labour Party it has become a matter of course that Labour shall be represented on all important Commissions or other inquiries; and the evidence of trade union officials is always taken on any question of industrial legislation. The workers have therefore had for a good many years past opportunities of expressing their opinions. Service on such bodies and the preparation of evidence to lay before them have been considerable factors in the education of the workers and of their leaders as well as of the community.

In the promotion of fresh legislation the part played by Trade Unionism has been curiously uneven, and on the whole rather disappointing. It must be remembered in the first place that the trade unions have only slowly created machinery for joint action, and that this machinery is still far from satisfactory. The trade union world at the beginning of our period was a congeries of small bodies with aims which were usually sectional and often in conflict with the aims of other sections. The cotton operatives thought of reforms in the cotton mills, and the engineers of reforms in the engineering works; and they promoted and sometimes obtained legislation of the kind they wanted.

¹ Report on Draft Regulations for the Manufacture and Use of Electricity. Cd. 4462.

The cotton operatives in particular, favoured by the excellence of their organization and by the fact that their concentration in one area made it easier to exert political pressure, early obtained substantial concessions. They pressed home their claim for special legislation to deal with atmospheric conditions long before there was any general legislation about ventilation. The cotton spinners and the cotton weavers were both successful in 1896, when the Truck Bill was before Parliament and they wanted different things. The cotton spinners wanted a Truck Act, and they got it; the cotton weavers objected to a Truck Act, and arrangements were made for exempting them from its operation.

When a trade union, or a group of trade unions, has set its heart upon some particular piece of legislation, it has generally shown great tenacity of purpose. Several of the trade unions whom it most concerned kept steadily in view for over twenty years the desirability of a Checkweighing Act, and at last they got it. But trade unions on the whole have been very slow in developing the machinery necessary for getting their wishes embodied in legislation. The Trades Union Congress gave them a platform on which yearly their aspirations were voiced. Resolutions were passed, and are still passed, of two kinds. First of all there have been wide resolutions to which almost everybody agreed, but which have been of little real value because no attempt has been made to show how they would work in detail. Secondly, there have been strings of resolutions, put forward by different trade unions in their own interest, and assented to readily by the other delegates. The taking of steps to carry into effect the resolutions was for many years left to the Parliamentary Committee of the Trades Union Congress. But the Parliamentary Committee never had the funds or the staff to accomplish anything.¹ The usual outcome of the Trades Union Congress resolutions has been a deputation to the Home Office and very little more.

¹ There is a caustic description of the Trades Union Congress and of its Parliamentary Committee in Mr. and Mrs. Webb's *History of Trade Unionism*, 1920 edition, pp. 561-70.

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In 1921 the Parliamentary Committee was superseded by a Trades Union General Council, which is in closer relationship with the Labour Party. Jointly they have established a good deal of machinery for publicity and propaganda, and a very efficient Labour Research Department.

Side by side with the codes of regulations which have been drawn up by the State for various industries, there exist other codes of regulations drawn up by the trade unions, usually formally agreed to by the employers but sometimes tacitly accepted. Occasionally legislation has been passed by Parliament which has really made no difference to working conditions because its intention has already been secured by trade union rule.¹ But in the main one set of conditions has been obtained by the trade unions by bargaining with the employers, whilst another set of conditions has been the result of parliamentary action. Parliament, as we have seen, has been very chary of dealing with questions of hours and wages, and in those matters the codes negotiated by the trade unions have far outstripped legislative action. Contrariwise, there is comparatively little in trade union codes about matters of health and safety, or about what we call nowadays "welfare." One or two flagrant dangers have been guarded against: the boiler-makers have an agreement with the Ship Repairers' Federation that petroleum tanks shall be certified safe by an expert each day before men are asked to enter them for repair purposes. In the building trades a lock-up shed is usually required in which the men may keep tools, eat meals, and take refuge from the rain; painters have a rule that flagstuffs must not be painted in position. In some of the riverside occupations there are rules designed to prevent a man from working alone in dangerous places.

The textile operatives have negotiated agreements for the stopping of machinery at eleven o'clock on Saturdays, so that it need not be cleaned whilst in motion. But the trade union rules as to health and safety are not many.

¹ This was in part true of the Employment of Women, Young Persons and Children (Lead Processes) Act, which was passed in 1920 to fulfil obligations assumed at Washington in 1918.

It should be noted, however, that where a powerful trade union has a rule, it is likely to be more strictly observed than any statutory regulation; every keen trade unionist is in effect an inspector, on the look-out for any infringement and ready to make a protest.

The keenness to secure observance of trade union rules throws into relief the lack of zeal generally shown by trade unionists for the enforcement of statutory regulations. It is open to any one at any time to send notice (which may be anonymous) to a factory inspector or to the Home Office of a breach, or supposed breach, of the law. This is a method of which the workers could make great use, and one might suppose that the trade unions would be active with stimulation and advice. Prompt and accurate information as to breaches of the law would be welcomed by the Home Office, and would do much to raise the standard of observance. As a matter of fact, complaints from the trade unions, and from individual workers, are few and often inaccurate. Trade union officials sometimes display an amazing ignorance of or disregard for the laws affecting intimately the working conditions of the men whose interests they represent. A glaring example of this came to light during the proceedings of the Departmental Committee on Truck in 1908. Several leading officials of important trade unions gave evidence as to unreasonable deductions from earnings. When they were asked if they had complained to a factory inspector, or taken other action to challenge the employer's action under section 2 of the existing Truck Act, they admitted that they had not done so.¹

There are various reasons for this inaction of the trade unions. The salaried officials are usually overworked. There is the preoccupation with hours and wages: though in the case just mentioned this does not apply, since it was a question of wages. There is the contempt² which many trade unionists feel for the factory inspectors and their disbelief in their effectiveness. There is the suspicion

¹ Minutes of Evidence of Departmental Committee on Truck. Q. 6988-6994 and Q. 17014-17025. Cd. 4442.

² This contempt still exists, though it has much diminished. As is usual in such cases, there is some reciprocation.

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of the revolutionary of "mere palliatives," among which he classes the Factory Acts. There is the syndicalist trend of thought with its deprecation of appeals to the authority of the State. And there is the feeling, shared by many employers, that the factory inspectors are paid to look after that sort of thing and that therefore no one else is called upon to trouble.

None of these reasons is good enough. The dominant opinion of the trade unionists of this country is in favour of legislative action. The Trade Union Congress passes resolutions every year calling for fresh factory laws, and often urging better administration of them. Trade unionists ought to be prepared to do what they can to make existing laws fully operative. The idea that it is the business of the factory inspectors alone is a particularly vicious fallacy. The factory inspectors, even if their numbers were immensely increased, could not be everywhere at once. Enforcement of factory legislation, as of most other legislation, must depend to a considerable extent on the vigilance and initiative of the ordinary citizen, and especially of those who are aggrieved. Even if much cannot be expected from the present overworked officials of the trade unions, yet there is no reason why, especially in these days of Workers Educational Association classes, and other facilities for study, there should not be in any large industrial centre, or large branch of a trade union, at least one trade unionist who had made it his business to get thoroughly acquainted with the Factory Acts and who would act as adviser and vigilance officer. He would be rendering good service to his fellows and to the community.

Whilst comparatively little has been accomplished by the pure initiative of the trade unions, a great deal of help has been received from them both in framing new regulations and in securing their intelligent observance. Fresh regulations are now almost always arranged at conferences at which representatives of the employers and of the workers meet the Home Office officials; a public inquiry to consider protests against a proposed code is

now a rare occurrence. Sometimes regulations suggested in the first instance by the Home Office are adopted by voluntary agreement: there is, for instance, an agreement as to safety regulations between the Sheffield and District Rolling Mill Proprietors Association and the Iron and Steel Trades Confederation. It is often convenient to have such agreements voluntary during the experimental stages and to give legal sanction to them at a later date. And the observance or non-observance of a statutory order depends very often upon the trouble which has been taken to explain its purpose to, and to secure the co-operation of, the trade unions whose members are affected. It is one thing to prescribe masks, or gloves, or baths: quite another thing to get them used.

Thus Dr. Bridge, one of the Home Office Medical Inspectors, gives an account of an interview with the officials of the Dyers Union, Leicester, with regard to the Chrome Dyeing Welfare Order.

"One of the main objects of the interview, as put forward by the officials, was that they wished to be in a position to explain to their members the use that should be made of the provisions of the Welfare Order. For this reason he considered the interview very valuable, for one of the difficulties of administering the Welfare Orders is that the men fail to take full advantage of the provisions made under them. An attitude such as that shown by this Union marks a very great advance."¹

II.

The establishment of Joint Industrial Councils and Trade Boards has put on a more formal basis in many trades the relations of employers, trade unions, and the Factory Department of the Home Office; these Whitley Councils and Trade Boards are recognized to be the official Consultative Committees on all questions on which the Government has to approach the industry they represent. With regard to Whitley Councils it is not necessary here to enter into the debated question of their general advisability and worth; it is well known that they have not developed as widely as their initiators hoped; what is clear from their

¹ *Report of Chief Inspector of Factories, 1922. Cd. 1920 of 1923.*

history is that they function much more smoothly on matters of health, safety and welfare, than on questions of wages and hours.

"It was a pleasure," writes the Chief Inspector of Factories in his report for 1922, "to comply with the request from the Joint Industrial Council for the Printing and Allied Trades to write a leaflet for distribution through their agency to employers and employed." A similar leaflet was drawn up by the Home Office in consultation with the Joint Industrial Council for Painters and Decorators; the initiative in this case did not come from either body, but from the International Labour Office at Geneva. The Joint Industrial Council for the Pottery Trade, of which the district factory inspector was a co-opted member, issued pamphlets on health and circulated them amongst the operatives, and it arranged for courses of health lectures at the Hanley Technical Institute. It also requested the Home Office to extend to the industry the "Particulars Clause" of the Factory Act, and this was done.¹

In several cases Joint Industrial Councils have drawn up schemes of voluntary regulation in respect of conditions which do not yet come within the scope of the law. Two or three of them have discussed lighting, and the Hosiery Trade Joint Industrial Council classified processes as "fine" or "very fine" and made recommendations for special lighting; in this work the advice of the factory inspectors with their extensive knowledge of different trades and of different methods of illumination, was naturally of great value. Another instance, where the Home Office was able to get adopted voluntarily a regulation which could have no legal sanction at present, occurred in the flour-milling industry, where the Joint Industrial Council agreed in 1919 that sacks of 224 lbs. of flour should be employed only where mechanical appliances for handling them were available, and that sacks of 140 lbs. should be used where delivery had to be by hand.²

¹ All these examples are quoted from the *Chief Inspector of Factories' Report for 1922*.

² *Report on the Establishment and Progress of Joint Industrial Councils*, H.M. Stationery Office, 1923.

It has been suggested several times that regulations agreed to by a Joint Industrial Council should be made legally binding on an industry.¹ Opinion is still, however, divided on the subject and the difficulties are considerable. Contracts between trade unions and employers' associations (which are in the eyes of the law trade unions also) cannot be legally enforced. Where the regulations agreed to by the Joint Industrial Council might be imposed as statutory regulations under existing Acts, the obvious course is to approach the Home Office, which is not likely to refuse to issue regulations except for very good reason. The real difficulty is in those cases where a Joint Industrial Council wants regulations in advance of existing legislation. If the limits of trades, and the genuinely representative character of Joint Industrial Councils, were fully established it might be possible to allow legal force to their regulations, subject always to the approval of the Home Office. But neither of these conditions is yet fulfilled; many of the difficulties which the Joint Industrial Councils have experienced have been due to the lack of real homogeneity in the trades which they cover and to lack of sufficiently representative character.²

Whilst everything is to be gained by securing the hearty co-operation of a Joint Industrial Council, or of the bodies represented on it, and whilst it is wisdom to defer a great deal to any wishes expressed, yet it would be a fatal mistake

¹ A resolution to this effect was carried by sixteen votes to five at a Conference of Joint Industrial Councils and Interim Reconstruction Committees in 1921. But as only about a third of the Councils then in existence were represented at the Conference the resolution did not carry much weight.

² The caution with which the opinions and decisions of Joint Industrial Councils must be taken has been well illustrated in the relations of the Building Trade with the Home Office. "Draft Regulations for the Construction of Buildings," writes the Chief Inspector of Factories in his annual report for 1921, "were issued in December, but greatly to our surprise, seeing that the code was issued exactly as drafted by a committee of highly skilled men representing both employers and operatives, the draft has met with an enormous number of objections from local Associations and individual builders. Further action is at present under consideration." The regulations have not yet (1925) been issued, and the incident illustrates the difficulty of taking the opinion of a Joint Industrial Council as the opinion of an industry. It should also be borne in mind that there are in many industries non-union shops; the number is frequently under-estimated.

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to leave the regulation of an industry entirely to those engaged in it, if only for the reason that bad conditions are sometimes least apparent to those engaged in them.¹ It is very doubtful, to say the least of it, if anything like the same improvement would have taken place in the potteries but for outside pressure. Perhaps even less may the reform of the light grinding trades be expected from the trades themselves. The community has a right and a duty to intervene ; in the industrial sphere as elsewhere, it is not a matter of indifference to it if people are foolish enough to wish to expose themselves to unnecessary risks. The community interferes where it can to prevent men from committing suicide, and it ought in the same way to interfere to prevent them from operating machinery without guards, or from neglecting to take baths where cancer may ensue. The whole is greater than the part, and the last word should be with the community.

¹ Reporting on the grinding trades in Birmingham in 1909, Mr. A. H. Lush said that both manufacturers and workers gave evidence that there was not much dust. " This evidence was beyond question honest and sincere ; but I am unable to attach great weight to it. Naturally men who have long been inured to the conditions of a particular trade are slow to observe the evils connected with it, and find it difficult to believe in their existence." Cd. 4913 of 1909.

CHAPTER XV.
OPINION AND PROPAGANDA.

I.

WHEN we come to consider why progress has been made in factory legislation and its observance, the first thing to be said is that here, as elsewhere, one step has led inevitably to another. A very good example of that is the way in which the enforcement of a reasonable temperature made it necessary to have regulations as to ventilation.¹ Factory inspectors, in the course of their duties, could not fail to become aware of the dangers connected with railway sidings within factory premises, and they naturally wished to see some protection extended to those working on them. So, too, it is felt to be illogical to-day that the repairer of a ship in dry dock should come within the protection of the Factory Act, whilst the scaler engaged on a ship lying in the river should not. Sometimes an inquiry into some suspected danger has brought to light the fact that some other danger, not hitherto recognized, is as a matter of fact even greater. In the early days of the regulation of the dangerous trades it came as a great surprise to the Home Office to find that far more quarrymen were killed or injured by phthisis than by accidents.² Coming closer to our own times, the Welfare Orders and many of the provisions of the latest Factory Bill are obviously only the extension to a wider field of methods which have been endorsed by experience in the specifically dangerous trades.

A very great deal is due to the zeal and competence of the factory inspectors. They have had the advantage of

¹ See p. 100.

² See *Report of Chief Inspector of Factories, 1893.*

wide experience, and they have carried ideas from one factory to another factory and from one industry to another industry. They have been fertile in suggestions and sometimes in more than suggestions.¹ Much may be attributed to professional pride, to that joy which most men and women take in doing well a piece of work for which they are responsible and in which there is scope for their talents. And those of us who have studied their records and who know any considerable number of them personally, will wish to pay a tribute to the enthusiasm and genuine solicitude for their fellows which most of them bring to their work.

The pioneering of the best employers has been perhaps the second biggest personal factor, and much legislation is just an effort to bring the rank and file of employers nearer to their practice. Many of the regulations for dangerous trades originated in this manner. Not a few improvements have been due to the ingenuity and research of works chemists and works engineers.²

An estimate of the part played by trade unions has been given in another chapter.³

In the case of industries which are strongly localized it has sometimes been the Medical Officer of Health, or the head of the infirmary or other public institution, to whom, more than to anyone else, the recognition of the ravages of some industrial disease has been due. The cotton operatives have never forgotten the alarming statements about humidification made by a Medical Officer of Health for Blackburn in the 'eighties. Dr. Scurfield, when Medical Officer of Health for Sheffield, did a great deal to bring to light the terrible conditions both in the grinding trades and among the hand file-cutters.

The development of scientific technique has been another

¹ Thus, for instance, Mr. L. McNair has invented safety devices for the baking industry.

² "A signal service in the prevention of lead poisoning was rendered by Mr. C. A. Klein, chemist to the Brimsdown White Lead Company, who worked out a method of incorporating dry lead compounds in rubber and other materials in such a way as entirely to free certain processes from danger. . . . The method is capable of extension in other directions, e.g. in the glass industry." *Report of Chief Inspector of Factories, 1922.*

³ See Chapter XIV.

large factor in the improvement of industrial life. The patient researches of Sir Thomas Oliver and of Sir Edward Thorpe (the Government chemist) made it possible to take the right steps to minimize disease in the industries in which chemical or metallic poisoning occurred. Without modern bacteriology it would have been impossible to find out the cause of anthrax and to indicate how it might be prevented. Two recent inventions have very much advanced the possibilities of testing the air of a work room, and perhaps of fixing objective standards later on. Dr. Owens' Dust Counter makes it possible to state what is the quantity and the nature of the dust in the air, dust which may be invisible to the naked eye; and the revision of the regulations for the grinding trades is likely to be one of the results of his invention. Dr. Leonard Hill's kata-thermometer makes it possible to measure the stimulating effect of air upon the skin. These are only a few of the outstanding examples of the help given by physical science. It is possible that the psychologists are going to render at least equal service in the next twenty years, especially in regard to safety, but their science has not yet advanced to the stage when legislation can be based upon it.

It is both curious and sad to notice how in some matters there has been little scientific research, where it ought to have been possible to decide a question definitely, thus putting an end to waste of time in inconclusive controversy, and probably to a great deal of unnecessary suffering. A conspicuous example of this is the fact that after nearly a century of controversy it is still possible to debate whether there are efficient substitutes for lead in outside painting. A comparatively small sum spent in tests ought, one would think, to have given an incontrovertible answer one way or another.

Of the propagandist bodies the three most active and influential were the Women's Trade Union League,¹ the Women's Industrial Council,² and the Christian Social

¹ Established 1877, for the formation of trade unions among workwomen.

² Founded 1894, to organize inquiry into the conditions of working women.

Union.¹ Whilst their aims differed and they had different, though overlapping, constituencies, there was a good deal in common in their methods and attitude. The Women's Trade Union League was the most successful in agitation, and especially in getting the aggrieved persons to combine and to take measures for their own defence. The Women's Industrial Council did some good research work, including a valuable series of studies of different trades. The Christian Social Union tried, and with some success, to stir the consciences of members of the Church of England, and its influence spread far beyond that denomination. All three bodies prepared reports, sent deputations, issued pamphlets and magazines, and primed members of Parliament to ask questions. Another body of similar nature was the Industrial Law Committee.² The British Section of the International Association for Labour Legislation pioneered in a field which has become of increasing importance. And there were many other bodies devoting some or all of their energies to work of this kind. Together they exerted a pressure which got, here a little and there a little, better legislation and better administration, and together they educated the public and created slowly a new opinion. And, as in all movements of this kind, a comparatively few people belonging to many societies, a valiant little stage army, exercised an influence out of all proportion to their numbers.

Sometimes the newspapers have given very effectual aid. The *Daily Chronicle*, in particular, devoted a good deal of space in the 'nineties to the description of industrial evils; and about the same time there were many articles in popular magazines which helped to form a sympathetic public opinion.³ At a later period the *Morning Post* did good service.

The Churches have taken some part in bringing about better conditions. The work of the Christian Social Union

¹ Founded 1889 by Canon Scott Holland and Dr. Charles Gore.

² Founded April, 1898, for the enforcement of the law and the promotion of further reform. See pp. 164-165.

³ I well remember, as a boy at school, being stirred by a series of sensational articles which appeared in *Pearson's Magazine* under the title "The White Slaves of England."

is referred to above. Many of the keenest workers in the numerous propagandist societies have been inspired and sustained by their Christian faith. But neither local congregations nor denominations have done much in their corporate capacity ; the Christian Churches are only slowly getting, or recovering, a technique of constructive social action. The one conspicuous instance of a local congregation taking action successfully was in the Potteries where the Hanley Labour Church had a great share in getting the regulations revised.¹

There has been objection from time to time from champions of women's rights to any restriction on the work of women which did not apply equally to the work of men. This kind of opposition, whilst harassing and obstructive, did not really obtain any considerable measure of support nor exercise any great influence on the course of legislation.² It was almost entirely of middle-class origin ; working women were not averse to receiving special protection on account of their sex, and showed no desire to claim their right to be poisoned or otherwise maltreated as much as the men. None the less, legal discrimination between men and women, based merely on sentiment and not on well-ascertained differences of capacity or need, is to be deprecated.³

It is unfortunately true that it has often taken a catastrophe, or a series of catastrophes, to stir the public and the Government to make some badly needed reform. Bad conditions in industry have been responsible for the loss of only too many lives without much notice taken, but every now and then the fate of some victim has arrested public attention and has hurried on the ending of an abuse. Just as it was the suffocation of George Brewster which in 1875 brought to a tardy close the hundred-year-old agitation against the employment of " climbing boys " to clean chimneys, so also during the period which we are considering there were

¹ See p. 53.

² The " women's rights " opposition seems to have had some success in 1895, when owing to the weakness of the Government it was almost impossible to carry controversial legislation. See S. & B. Webb, *Problems of Modern Industry*, p. 82. Miss B. L. Hutchins and Dr. Spencer have given a good account of the controversy down to 1903 (*History of Factory Legislation*, Chapter IX).

³ See p. 92.

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several who lost their lives needlessly yet not altogether in vain, since the lot of their comrades and survivors became easier because they had died. Of such were Harriet Walters, whose death from lead poisoning led to new regulations for the enamelling of iron plates; and Cornelius Lean, whose death from phosphorus poisoning brought to light the systematic evasion by one or two large firms of their duty to report cases of disease.

Among those who contributed to the transformation of industrial life during the last thirty years or so, one man stands out pre-eminent by his personality, his leadership, and his achievement—Sir Charles Dilke.¹ His knowledge of industrial questions was wide and close; he was one of a very small number who had a knowledge of foreign practice; his judgment was sound, and his energy and pertinacity² were inexhaustible. In close association with Sir Charles Dilke were Mr. H. J. Tennant,³ Mrs. H. J. Tennant,⁴ and Miss Gertrude Tuckwell,⁵ a niece of Lady Dilke. There

¹ Sir Charles Dilke, born in 1843, educated at Trinity College, Cambridge, travelled widely. He became Member of Parliament in 1868, Under-Secretary for Foreign Affairs in 1880, and President of the Local Government Board in 1882. A private scandal, on the rights and wrongs of which opinions have differed, kept him out of Parliament from 1886 to 1892, and he never attained office again. It is thought by many that but for this episode, he would have become Liberal Prime Minister. His greatest achievement was the carrying of the Trade Boards Act of 1909, which was largely due to his industrial knowledge and Parliamentary skill. He died in 1912.

² As an example of his pertinacity may be cited his action in the matter of the Pimlico Clothing Factory, where a girl fainted and died, presumably as the result of the notoriously bad ventilation. Between July, 1903, and June, 1907, Sir Charles Dilke asked in the House no less than nine questions on the subject. By March, 1906, "plans were under consideration." In June, 1907, the Home Secretary was able to report that the ventilation was vastly improved by carrying out an expert's recommendations.

³ Rt. Hon. H. J. Tennant, P.C., born 1865, was private secretary to Mr. Asquith 1892-5, Secretary to Departmental Committee on Various Lead Industries 1893, Chairman of Departmental Committee on Miscellaneous Dangerous Trades 1895-9, Parliamentary Secretary to Board of Trade, 1911-12, Under-Secretary for War, 1912-16, Secretary for Scotland, 1916.

⁴ Miss M. E. Abraham was Special Commissioner to the Royal Commission on Labour 1891-3; one of the two first women factory inspectors 1893; married Mr. H. J. Tennant, 1896; member of Central Unemployed Body; member of the Royal Commission on Divorce.

⁵ Niece of Lady Dilke; Elementary School-mistress 1885-92; Hon. Secretary of Women's Trade Union League, 1892-1904; Member of the Advisory Committee to the Lord Chancellor for Women Justices of the Peace.

were many others who played a distinguished part in the vigilance and agitation of the period, but it is no disparagement of them to say that the Dilke coterie were the biggest personal forces. It is scarcely possible to look into any matter of importance with regard to factory and other industrial legislation between 1891 and the present time without finding one or more of them active in regard to it.

It cannot be said that the debates in Parliament on the various Factory Acts of the last thirty years have been very edifying, apart from the speeches of one or two well-informed men. What strikes one most in comparing them with the debates of 1802-44 is the relative lack of appeal to well-defined principles. A consistent, if often wrong-headed, adherence to a social philosophy was much more general in the earlier period. The policy of non-interference, already in decay in 1890, was virtually abandoned in the following years, but without any clear recognition of what was being done. The losers gave way on practical points without acknowledging change of principle, and the winners took the concessions and thought it best not to drive home the logic of them. Debate was usually on concrete proposals and often on matters of petty detail.

The hardship involved in restriction of employment has been a favourite argument ; Mr. Jesse Collings was eloquent in 1895 about the necessity of allowing poor women to wash clothes for as many hours a day as they chose to do so. There has been protest against interference by officials with people's private concerns ; Mr. Matthews said in 1895 that they would soon want to come into your house and inspect your cook. There were occasional protests against any interference with the way in which a man chose to conduct his business. Mr. Forwood was indignant at the notion that ship-owners should have " to make such alterations as some chance or £150 a year Home Office Inspector chose to order when he went down to the dockside." ¹ But, in general, the necessity for factory legislation has not been seriously questioned, and debate has been about the expediency of particular measures.

¹ Hansard, 3 July, 1895.

II.

Whenever new developments are discussed, the question is naturally raised as to their probable effects upon output, upon costs, upon prices, upon earnings. It has been the usual cry of the employers that any new restriction would injure the industry and that it was therefore contrary to the true interests of all parties concerned, employers, workers, and the consuming public. The common reply has been that this is an old story, that the same kind of objection has been made in the past, and that doubtless it will be made on similar occasions in the future though past fears have proved groundless. This is an effective retort, but the logic of it is scarcely conclusive. The past is not repeated, and it is surely conceivable that conditions might be imposed which would be economically prejudicial to an industry.

Three main lines of defence are possible for any proposed regulation. It may be argued that it will not in effect increase labour costs. Thus it may be argued (and often correctly) that the shortening of hours will not lessen output. Or it may be said that the restriction increases the costs of the industry, but that it lessens burdens hitherto thrust by the industry upon the community. (The industry will possibly get partial compensation in lower municipal rates, whilst the gain to the community may be to some extent offset by higher prices.) Supposing, for instance, that exhaust ventilation is demanded in some dusty trade, the direct cost may be heavy. But the community will be relieved of the burden hitherto placed upon it of maintaining a number of damaged men and women and their dependents. Or to illustrate the third line of argument, the imposition of some welfare provision might be defended on the ground that, whilst involving some extra cost, it secures directly that physical, mental, or moral well-being of men and women which is the very object for which industry exists.

Where the regulation did admittedly impose an extra cost without offset, the further question would arise as to who bore ultimately that cost. It might be defrayed out of

profits or it might be passed on to the consumer. Evidence is almost entirely lacking as to what has actually happened, but it is most likely that where the cost has been heavy, neither of these has happened, but that employers have been driven to seek economies by new methods or by re-organization. And whilst there is no reason to think that industries have suffered by factory legislation it is probably true that weaker firms and backward sections of industries have sometimes been unable to face the expense or to adopt new methods. The supersession of hand file-cutting by machine file-cutting was probably hastened in this way, and the diminution of homework in various industries is probably due to industrial legislation. New regulations for the grinding trade might easily make it impossible to continue some of the little workshops in which at present much of it is carried on. But this is very different from ruining an industry; one method of conducting it would be superseded by another; and in view of the conditions of many small workshops and of many homes in which tailoring and other industries are carried on, there need be little doubt that the advantages outweigh some immediate hardship.¹

The fear of foreign competition has been frequently the ground of opposition to industrial legislation, and it has given pause to some of those who would otherwise have advocated stronger measures.² Very naturally, for whilst a law presses with equal incidence upon all of a man's competitors in the industry at home his foreign competitors escape. Unless, therefore, there is a large margin of profit to draw upon, or labour costs are not in fact increased, or economies are possible in methods or organization, he and the industry stand to lose. Usually one of the three possibilities obtains, and there is no evidence that any British in-

¹ The fear that a decaying industry might receive its death-blow has sometimes been the reason for opposition on the part of workers to proposed regulations. See, for instance, the remarks of Mr. G. A. Bonner about the hand-hacklers of Dundee and Crewkerne. *Report on Draft Regulations for Spinning and Weaving Flax and Tow*. Cd. 2851 of 1906.

² "The Committee are aware that if the manufacture of white lead were absolutely prohibited in the United Kingdom scarcely a ton less of it would be used in these islands." *Report of Departmental Committee on Use of Lead in Various Industries*. Cd. 7239 of 1893.

dustry has been seriously injured in its export trade by factory legislation.¹ How mechanically the argument of foreign competition has been used is well illustrated by the fact that it was brought forward in 1899 as a reason for not raising the school age, when the actual situation was that, by reason of our failure to act on the resolution for which our representatives voted at Berlin in 1890, we were actually competing unfairly with most European countries.

The establishment of the International Labour Organization has not, as yet, put an end to the argument from foreign competition, since the nations are inclined to wait for each other to ratify. Machinery to secure simultaneous ratification is badly needed. Even then the argument from foreign competition will still have to be met if, as is most desirable, there is to be pioneering in industrial legislation by more enlightened nations.

The amount of exact information as to the actual economic effects of better or worse conditions on costs is scanty but increasing. Apart from the experiments of a comparatively few firms, our knowledge on the subject dates back to the war period, when for the first time experiments and observations were made on a large scale to determine what conditions were most conducive to efficiency.² That good conditions are a sound business proposition has been, broadly speaking, established.

A few illustrations may be given.

The folly of very long hours has been conclusively established; it remains to be determined how low hours can be reduced without reduction of output.³ This will obviously

¹ I cannot remember to have come across any case in the last thirty years where the objection was raised that regulations would handicap an industry in competition with some other industry at home. Yet that might, of course, happen. E.g. it might be objected that the electricity regulations would injure electricity undertakings in their competition with the gas companies.

² It should be noted, however, that what it was chiefly sought to determine was the conditions of maximum output; price was a minor consideration in the exceptional circumstances of the War.

³ Mr. P. Sargeant Florence summarizes as follows: "Reduction of hours to eight per day increases daily output in occupations where speed depends mainly on the human factor . . . but may fail to do so where the machine sets the pace or the completion of the operation depends on chemical processes. . . . Reduction of hours below eight per day does not increase

differ from occupation to occupation, but there is evidence now emerging that in few occupations, if any, can hours be reduced to six a day, without loss of output.¹

The installation of good lighting often pays for itself in improvements in quantity and quality of work.² Installation of *suitable* lighting may actually in some cases lessen bills.³ A saving in lighting bills can also be placed sometimes against the cost of lime-washing.⁴

The expense of providing guards for dangerous machinery is sometimes more than cancelled by the resulting increase in output.⁵

There is some evidence also that there are limits to the advantages of speeding up machinery and that economies have sometimes been made by speeding down.⁶

When in 1897 an inquiry was made into the workings of the Cotton Cloth Factories Act of 1889, it was reported

hourly output sufficiently to increase the daily total, unless possibly, speed depends purely on the human factor and work is of a heavy type." *Economics of Fatigue and Unrest*, p. 348.

¹ At the very hot and heavy work of the tin-plate industry piece-workers were unable to earn as much in six hours as formerly in eight hours. See Dr. H. M. Vernon in *The Industrial Clinic*, ed. Collis, p. 66.

² "The effect of improved lighting in increasing both the quantity and the quality of the work is generally admitted and specific instances are quoted in the evidence. In one instance the output was diminished 12 to 20 per cent. during the hours of artificial lighting, and in another the earnings of the workers increased 11.4 per cent. after an installation of a better system of lighting, and confirmatory evidence to that effect has been published in the United States of America." *Report of Departmental Committee on Lighting*.

³ *Report of Chief Inspector of Factories, 1922.*

⁴ *Report of Chief Inspector of Factories, 1921.*

⁵ Mr. Ward, factory inspector at Birmingham, writes: "Early in the year I had visited a factory making small brass articles on power presses, which machines were then unfenced, and I instructed the firm to provide automatic guards in the usual way. On visiting some two or three months later, the occupier stated that he was sorry he had not provided these guards long ago, for since fitting the guards his production had jumped up beyond his expectations. He put this down entirely to the new guard, and suggested that the women would work faster because they felt safer; that is, to some extent, probably correct, but I think that the rhythmic swinging to and fro of the gate guard also had the effect of inducing greater unison of motion between the worker and the press action. In any case the increased production was in no way due to greater skill on the part of the operators, since some had been employed on these presses for many years." (Quoted in *Report of Chief Inspector of Factories for 1922.*)

⁶ See Tarbell's *New Ideas in Business* with regard to cotton mills. The manager of a very large printing works told me some years ago that he had found it profitable to speed down.

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that no serious objection was raised by the employers on the score of interference with production and that the earnings of pieceworkers were said to be greater than formerly.¹

It had long been argued against attempts to raise the age of full-time attendance at school that dexterity could only be acquired by very young fingers. Inquiries made by the Half Time Council in 1908 showed that children of thirteen acquired dexterity in piecing in something like a fourth of the time required by children of eleven.²

These are all merely illustrations and indications of the possibilities of improving conditions without loss and possibly even to advantage. More exact information on the relation between conditions and costs would be welcome.³ But in the very nature of things it must always be difficult to trace the exact or even approximate effect of changing one factor in a complexity of factors such as industrial and commercial life are. Nor can it be possible to predict with certainty the results of further industrial legislation. Each new step must be in some measure taken in faith, in that kind of faith of which Macaulay gave classic expression when he asked "Am I to believe that a change which would clearly be found to improve the moral, physical and intellectual character of the people, could possibly make them poorer?"⁴ And the sensible method of advance will doubtless be in the future, as in the past, to try to bring conditions in the inferior works up to the level of conditions in the better⁵ works.

¹ Cd. 8348 of 1897.

² See speech of Mr. Clement Edwards on the Education Bill. Hansard, 18 March, 1918.

³ The only statistical treatment of the subject which I know is now fairly old; it is an article in the *Journal of the Statistical Society* for June, 1902, by Mr. G. H. Wood. His conclusions are that after factory legislation (not necessarily because of it, and it might be in spite of it) wages have usually risen, the cost of production has not been increased, more adults have been employed, and there has been no falling off in foreign trade.

⁴ Hansard, 22 May, 1846.

⁵ "Better" is written advisedly rather than "best." The best managed works have often a genius at the head of them, and some part of the advantages given to the workers may be of the nature of "prosperity sharing," akin to "profit-sharing," the profit being, in part at least, a quasi-rent of ability peculiar to the exceptional employer.

CHAPTER XVI.

OTHER INDUSTRIAL LEGISLATION OF THE PERIOD.

It will be useful to consider briefly industrial legislation, within the period 1891 to 1924, bearing indirectly on factory legislation or upon its administration. And it will be well to consider first in what ways legislation which is not administered by the Factory Department of the Home Office may affect the legislation which is so administered.

A certain amount of the legislation is really factory legislation, and it is only by an accident that it comes to be administered by another department. This is notably the case with the Trade Boards Acts. It was always supposed by their advocates that these would be administered by the Home Office and would be construed as part of the Factory Acts, just as the Truck Acts (so far as they apply to factories) are construed; and it was only because there was in 1909 a timid Home Secretary and an unusually enterprising President of the Board of Trade that the Trade Boards fell under the latter department.

Other legislation has affected factory legislation by supplying a model; the chief debt is to the various Coal Mines Acts, which led the way with regard to checkweighing, self-inspection, regulation of hours of adult males. There is more in the coal-mining legislation which might yet be copied with advantage, especially the setting up of standards of competence. In some cases, on the other hand, factory legislation has supplied the model: a good example of this is found in the Shops Acts.

Furthermore, Acts, which were not in the main Factory Acts, have sometimes contained provisions which really

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belong to factory legislation and would find a place more properly in a Factory Act. A good example of this is the section in the Workmen's Compensation Act of 1923 relating to first-aid provision.

Other legislation, again, has affected the administration of the Factory Acts. The exclusion of women from factories for a month after childbirth was difficult to enforce until the National Insurance Act provided the mother with an inducement to stay at home, and the Notification of Births Act of 1907 brought into existence staffs of municipal health visitors. Notification of accidents and of industrial diseases became much more complete after the passing of the Workmen's Compensation Act of 1906.

The Education Acts have operated in some respects as if they were Factory Acts. If a child is compelled to attend school up to a certain age by an Education Act, it is almost the same as if the child were prohibited from working in a factory by a Factory Act. Almost the same—but not quite the same, because there is the question of holidays, and moreover the enforcement falls naturally to a different authority. For a complete protection of the child it has been found necessary in some cases to pass both an Education Act and an Industrial Act.¹

The period with which we are dealing has seen some remarkable developments with regard to compensation of workmen for accidents or diseases arising out of their employment; and this legislation is so akin to, and so bound up with, the legislation which is the subject of this book, that it will be well to consider it rather fully.

Originally the worker had some slight protection under the common law; he could claim compensation for injury received as the result of the personal negligence of his employer, provided that there were no contributory negligence on his own part. Such conditions were naturally extremely difficult to prove. Moreover the worker was supposed to have accepted the risks arising out of possible

¹ E.g. Robson's Act, 1899, and the Factory and Workshop Act, 1901. But in the case of the Education Act, 1918, a clause was inserted to be construed with the Factory Acts. See pp. 32-33.

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carelessness on the part of a fellow-worker, and he had no claim against his employer if he were injured by reason of that. Claims under common law were therefore difficult to sustain, and in the vast majority of cases the worker just had to suffer the whole or partial, temporary or permanent, deprivation of livelihood which the accident might entail. The Employers' Liability Act of 1880 modified the position in several important respects. The responsibilities of the employer with regard to safety and suitability of plant and tackle were very much increased, and the worker could claim against him for injuries suffered through the carelessness of a fellow-worker. But the defence of contributory negligence was still allowed to the employer; and in consequence a good many claims were lost. And a new defence was allowed; the worker lost his claim if it could be proved that he was aware of the defect causing the accident and had not called attention to it. As it was often as much as his place was worth for a worker to point out any fault of plant or tackle (and even if it were not so, his fear might suggest that it was so) he naturally preferred in a great number of cases to run the risk of accident rather than to run the risk of offending his foreman or other supervisor. How incomplete was the protection given by the Employers' Liability Act may be gauged by the fact that the average number of actions taken under it during the years 1898 to 1906 was roughly 700.¹ This must have been a very small percentage of the total number of accidents which occurred.

The Workmen's Compensation Act of 1897 marked a very great advance. It did away with the idea of negligence as the basis of a claim. It was based on a recognition of the fact that accidents do occur in industry, even when care is taken, and that the next best thing to preventing accidents is to prevent their resulting in destitution. The Act applied to certain categories of workers only, amongst whom were those employed in factories but not those employed in workshops. It was in considerable measure an outcome of the inquiries of the Departmental Com-

¹ Tillyard, *The Worker and the State*, p. 198.

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mittee on Dangerous Trades ; and in turn it re-acted upon the Factory Acts and upon their administration by indicating more clearly, as actions under it became more common, in what industries accidents occurred most frequently and of what nature they were.

The Workmen's Compensation Act of 1906 was of much wider application, and it covered the greater part of the industrial workers of the country.¹ The contributory negligence of the person injured was no longer a bar to a claim, unless it amounted to "serious and wilful misconduct." And even "serious and wilful misconduct" was not to debar a man or his dependants from receiving compensation in case of permanent disability or of death.

One of the most important new provisions of the Act of 1906, and a new departure made almost entirely as the result of experience gained in the administration of the Factory Acts, was that compensation could be claimed in respect of disease contracted in the course of employment. Six diseases were mentioned in the Act—the five diseases notifiable under section 73 of the Factory Act, and a coal-miner's disease, ankylostomiasis. The Home Secretary was given power to add to the list of diseases ; he added eighteen in 1907, and the number has since grown to over thirty. It is regrettable that these additional diseases are not compulsorily notifiable ; it is left to the initiative of the victim to take proceedings, and if he fails to do so, the case escapes notice. Compulsory notification by medical practitioners would be a safeguard to the workman, and it would ensure also that we had accurate information as to the risks of various occupations. Even as it is, the particulars of claims for compensation, and the statistics of them, are naturally of assistance to the Factory Department of the Home Office, as indications of conditions of work needing its attention. But in the main the initiative has come from the Factory Department and not the other

¹ The only classes of employees excluded are (a) persons not employed by way of manual labour whose remuneration exceeds £250 a year ; (b) casual labourers not employed for the purposes of the employer's trade or business ; (c) policemen ; (d) out-workers, and (e) members of the employer's family dwelling in his house. Tillyard, *op. cit.*, p. 199.

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way round ; it is due to its diligence and research that trade diseases are traced and indicated as suitable for scheduling under the Workmen's Compensation Act.

For one particular group of industries, the refractories industries,¹ a special Act was passed in 1918, the Workmen's Compensation (Silicosis) Act. The industries dealt with are those in which silica dust is generated, which may bring about gradually a condition of fibroid phthisis in the worker. The difficulty here was that the onset of the disease was so slow; and that the workers shifted so much from job to job, that it seemed unfair to saddle any particular employer with the responsibility of maintaining a sick man. The employers contribute to a central fund for the trade, administered by a joint committee of their representatives and representatives of the workers, and out of this fund those who contract the disease are compensated.

The Workmen's Compensation Acts are inspired by the same motive as the Factory Acts and they are to be justified by the same philosophy ; industry should only be carried on in ways which are consistent with the welfare of those engaged in it. The Factory Acts aim at preventing accidents and occupational disease ; where they fail to do so, the consequences of accidents or of disease must be guarded against as well as possible. The Workmen's Compensation Acts do not prevent an accident or the contraction of disease from being a very serious matter for a worker, but they do prevent his falling into the destitution which was the common sequel before they came into operation.

It was hoped at one time that by placing upon employers the responsibility of compensating for accidents, they would be made more careful, and that accidents would decrease in number as a consequence. There is no reason to believe that anything substantial has been accomplished in this way. Employers nearly always insure against the risk, and the premiums paid become part of the working expenses of the trade. It has been suggested from time to time that insurance companies

¹ E.g. quarrying flint, dressing grindstones, grinding articles, carving granite, and various processes in the manufacture of pottery.

should work out a system of reduction of premium where a firm had a good standard of fencing and of structural security, and above all where it had a good Safety First department.¹ The Accident Insurance Offices Association agreed with the Home Office that they would introduce gradually a system of discounts for approved safety devices or provisions. It does not appear that much has been done as yet, and it may be doubted whether differences of premium are ever likely to be a factor of much importance in accident reduction. Indirectly, however, the Workmen's Compensation Acts do contribute to accident reduction; they supply a new motive for comprehensive and correct notification of accidents, and they secure a publicity and an attention which were wanting in the days when an injured man just went away to live as best he could.

In the matter of reduction of disease the case is very different: the Workmen's Compensation Act of 1906 has had a marked effect for good. One of the great difficulties with which factory inspectors, certifying surgeons, and the employers themselves, had to contend prior to its introduction was that the workers in dangerous industries were likely to attempt to conceal as long as possible the onset of disease. They objected to medical examination and they evaded it if they could. This was quite natural, because medical examination might mean suspension, and suspension would mean starvation or something very like it. But when medical examination became a preliminary to compensation, if disease were found, its terrors were very much lessened. Workers submitted themselves more readily to it, many cases of disease were checked in the early stages, and moreover a good deal of new information was obtained which before had been very difficult to get.

The Workmen's Compensation Act of 1923 introduced no new departure of importance. It extended slightly the range of persons to whom the Act applied, it increased the amount of compensation obtainable, and it safeguarded

¹ See especially the evidence of Mr. G. Bellhouse before the Departmental Committee on System of Compensation for Injuries to Workmen. Cd. 816 of 1920.

still further the right to compensation for an accident resulting in death or permanent disablement, even where there was direct disobedience of an order or regulation.

The most serious defect of the Workmen's Compensation Acts has been the method of their enforcement. It is left to the injured worker to assert his claim. It is true that legal procedure is very much simplified for him, and that the cost in most cases is trivial ; still it puts a heavy burden upon a man or woman who may very likely be both poor and ignorant. The other party to the case is not as a rule the employer but the insurance company with whom the employer has placed the risk. The officials of the insurance company do not consider it any part of their duty to point out to the injured person the strength of his case, and they frequently attempt to compound weekly payments for an inadequate sum. Anyone who has worked with a Poor Man's Lawyer in an industrial area will know that this is so. A poor man, inexperienced in such negotiation, is obviously at a disadvantage in his dealings with the agent of a powerful insurance company whose continual occupation is settling such claims. The larger trade unions employ solicitors to conduct cases for their members, but not all workers belong to strong trade unions. Very generous help is given by legal aid associations, but it is quite inadequate to meet the whole of the need.¹ Some protection is afforded also by the fact that an agreement to compound a weekly payment has to come before the registrar of the county court, and he may refuse to record it if he thinks it inequitable. He has powers, strengthened by the Act of 1923, to demand any information which he thinks necessary in order to form an opinion. But it is within his discretion whether he will do so, and in many cases an agreement will be registered if it is not obviously and flagrantly unfair. At best his function is that of revision of an agreement previously arrived at by negotiation. But it may well be maintained that the settlement of a claim, and especially the compounding of a weekly payment, ought not

¹ The whole question of legal aid for the poor is serious, and for lack of adequate provision a good many wrongs go unrighted and men fall also into the hands of shady solicitors and bogus legal aid societies.

to be in any way a matter of negotiation between directly interested parties who are so unequal. There is something indecent in an insurance company, with profits depending upon a low loss rate, being allowed to haggle with an injured worker as to the amount of compensation he shall receive. It ought to be from first to last a matter of independent and unbiassed assessment ; and for the effective working of Workmen's Compensation Acts, as of Factory Acts, some kind of public inspection is needed.

The Trade Boards Act of 1909 may well be regarded as the most significant piece of industrial legislation which the present century has yet seen. It regulated wages ; it actually interfered with the operation of the law of supply and demand in respect of that most important " commodity " labour. It marked the passing of a philosophy which had dominated industrial life for over a century. It is probable that the year 1909 will stand out as a landmark in our industrial history much as the year 1802 has done. The Health and Morals of Apprentices Act of 1802 was the first feeble re-commencement of the effort to regulate conditions of work ; the Trade Boards Act of 1909 may be looked upon a century hence as the first feeble beginning of a fresh effort by the community to enforce a " Fair Wage." How great and how rapid had been the change of thought may be realized by turning up the record of the speech in which the Factory Act of 1891 was introduced by the Home Secretary of that year. " There are three leading factors in the workman's life," said Mr. Matthews : " his work, his wages, and his health. Unhappily legislation can do but little with regard to the first two. It cannot alter or improve the quantity or the quality of the work, and it cannot otherwise than mischievously interfere with the question of wages." ¹ Henry Matthews was a reactionary, but on this matter of legislative interference with wages he only voiced the general opinion of his day. A number of investigations, and among them the inquiries preliminary to the regulation of the dangerous trades, forced home during the next ten or fifteen years a realization of the prevalence of extremely low

¹ Hansard, 26 February, 1891.

wages and of the misery and social waste resulting from them. A popular campaign increased the impression made, and by 1909 the Government of the day was prepared to admit, though grudgingly, the desirability of regulating wages in certain exceptional circumstances.¹

Since that time we have had the Coal Mines (Minimum Wage) Act of 1912, which applies some measure of regulation to the remuneration of a very large body of adult men. There was also extensive regulation of wages during the War and for some time afterwards. Agricultural Wages Boards were established by the Corn Production Act of 1917; they have been abandoned since, and afterwards revived. During the slump in trade there have been violent attacks on wage regulation and on the whole Trade Board system. The Trade Boards have weathered the storm and the Coal Mines (Minimum Wage) Act still stands. But State regulation of wages is at present in a condition of arrested development.

Apart from its interest as the extension of regulation to a new and most important sphere of industrial conditions, the establishment of Trade Boards is of significance because it has contributed to industrial regulation or re-acted on industrial conditions in two or three other ways. Notably, it has been a factor in reducing and maintaining the shortening of hours. When rates were fixed after the Act of 1909, it was decided that employees should be paid for all the time spent on their employers' premises, whether they were actually at work or not. This led to a certain amount of re-organization to avoid idle spells, and this in turn tended to a shortening of hours. The second Trade Boards Act, passed in 1918, gave power to declare a normal day and a normal week and to preserve overtime rates of pay for work done outside those times. A nine-hour day and a forty-eight hour week have commonly been declared, but there are variations from this in some of the trades. Trade Board action thus penalized working in excess of the normal day or the normal

¹ On its second reading Mr. H. J. Tennant, the Government spokesman, was careful to point out that the Bill was intended as a limited remedy for low wages only, and was not to be regarded as State control of wages. State interference with wages was only justified where labour was neither mobile nor organized. See *Hansard*, 28 April, 1909.

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week ; and this, combining with a number of forces working in the same direction, has undoubtedly contributed to the great reduction of hours which has taken place since 1918.

The Trade Board Acts have also removed any abuses or controversy as to truck in the trades to which they apply ; no deductions from minimum wages are allowed except for National Insurance or as contributions to thrift funds. They have furthermore done something to systematize and to safeguard apprenticeship. Employers are allowed to pay special low rates to apprentices provided that the indentures are in a form approved by the Trade Board and that the instruction is genuine. The proper instruction of apprentices is an important matter which is not in any other way regulated by law, and in this respect entrants to sweated industries have an advantage over entrants to industries to which the Trade Boards Act does not apply.

Reference has already been made to one re-action of the health sections of the National Health Insurance Act of 1911 upon factory legislation, or rather upon its administration. As with child-birth, so with industrial disease or with other illness, there is no longer the same pressure on a worker to continue in the factory when really unfit. The unemployment sections of this Act, and of its many successors, have also had their beneficial results. Of the two tragedies recorded below, one would have been avoided by such provision for unemployment as now exists, while the other would probably have been avoided if there had been that proper provision for widowhood which is long overdue, but for which we still wait.

“ In two of the fatal cases (of lead poisoning in the potteries) the victims were women, one of whom by reason of her husband's unemployment was the breadwinner of her family, while the other had a mother and sister dependent upon her labours ; urged by the necessities of their position, both women had succeeded in concealing from the certifying surgeon the symptoms of lead poisoning and had heroically borne in silence the sufferings revealed by *post mortem* examination. One returned home from the factory on Tuesday night, ‘ feeling unwell,’ she died on Wednesday morning. The other persisted in returning to her work, although warned by recurring fits of her danger ; and when,

forced at last to go home by violent pains in the head, she consulted a doctor, she was beyond medical aid."¹

Housing and town-planning legislation has not as yet had a very great effect on factory conditions, but it is likely to play a considerable part in the future. In the past we have allowed factories and dwelling-houses to be built intermingled in our crowded towns, with bad effects both upon home life and upon industrial life. Men and women have lived in the shadow of the factory chimneys, often suffering from fumes and smell. The factories have been cramped for room, and proper expansion has been impossible; darkness and congestion and general unsuitability have been the consequence. There are many cases where it would be impossible to bring a works up to good modern standards: it needs to be pulled down and to be re-built on a larger space. In some towns there are areas of dirty little workshops and of small factories, which are the despair of the factory inspectors; nothing short of a clearance could do much to remedy the evils of them. Clearance of such areas is, however, extremely difficult as the law stands at present. A few factories and workshops have disappeared when insanitary areas have been cleared,² but the clearance clauses of the Housing Acts are aimed at dwelling-houses and not at industrial buildings.

It is hard to remedy the mistakes of the past, it is comparatively easy to prevent their repetition in the future. The Housing Acts of 1909, 1919 and 1921 have all contained town-planning sections, giving local authorities power to insist on proper spacing and separation in the development of new towns or of new areas of old towns. Letchworth, and other experiments, have shown us the possibilities of an industrial town whose growth is planned from the start. The Housing Act of 1921 allows the Public Works Loan Commissioners to advance money for the development of garden cities.

When, further, we have effective Smoke Abatement legislation and a public opinion which demands its enforce-

¹ *Women's Trade Union Review*, July, 1910.

² The case usually quoted is that of the Tabard Street area clearance in Southwark.

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ment, there will be a real likelihood of our present hideous and unhealthy industrial areas giving place to well-planned industrial areas inoffensive to those who live and work in them.¹ There are already quite a number of examples of what is possible.

¹ See what is said above (pp. 102-6) in regard to the lighting of factories.

CHAPTER XVII.
REVIEW AND SUMMARY.

I.

LET us imagine an observer who spent a considerable time in 1890 visiting factories and workshops and inquiring into the conditions of the workers, and who after thirty-four years of absence again pays a number of such visits in 1924. We may suppose him to have refreshed his memory by turning up notes of his earlier visits, and that he now puts on record the chief differences he sees.

In the first place, there are no children. If he had paid his second visit even four years earlier he might have seen, as he saw in 1890, small boys and girls going to work in the darkness and cold of a winter morning, though he would have noticed that the smallest did not seem so small as formerly, and he would learn on inquiry that the youngest was twelve years old and not ten years old as before. But, coming in 1924, he finds no children at all; the last of the half-timers have disappeared. There has come a full stop to the long catalogue of maimings and poisonings of children; and there has come, more important still, an end to the sapping overwork, the deprivation of education, the premature introduction to the burdens of adult life.

The next thing to strike him would be the shortness of the hours. In 1890 the manual labourers usually worked "round the clock"; it was only an exceptional firm here and there which worked an eight-hour day. Now he would find the eight-hour day most common. Remembering the discussion and the propaganda of 1890 he might well assume that an Eight Hours Bill had been carried. He would be wrong; and probably it would be with amazement that he

would learn that the law allowed the same long hours in 1924 as in 1890, but that trade union pressure and a changed opinion among employers had effected the shortening.

These two great changes, the exclusion of children and the shortening of hours, one the result of political action and the other of industrial action, would probably seem to him, if he were a man of imagination and sympathy, to overshadow all other changes which he noticed. For the evils done away with were not only evils of life but evils which swallowed up life. There was little left over when the works had taken its toll of time and energy. Childhood was eaten into, and adolescence was eaten up, and right up to old age there was little leisure except the tormented leisure of unemployment. The vitality of most men, and certainly the mental energy of most men, was sapped by overwork beginning early and lasting throughout life. That the workers accomplished as much as they did with their small margin of time and strength, that they built up the organizations which have won for them partial emancipation, is an amazing story of triumph over difficulties. We shall look back in another generation with incredulous horror at the slavery which has only just ceased.

There would be other changes which our observer would notice. A little time spent at the pay-boxes would show him that almost everyone nowadays has the means of checking the wage paid. In 1890 there were hundreds of workers who had only the vaguest ideas as to how their pay was calculated and who cherished quite naturally the suspicion, sometimes a true suspicion, that they were being cheated by their employers. The Particulars Orders, and the operation of the Trade Boards, have altered that.

In the conditions of work he would notice great changes, though it would be impossible for him to know without being told what was due to legislation and what was due to the spread of enlightenment and to scientific progress. The increased use of electricity, and the improvements in gas illumination, have made the hot, stuffy atmosphere of the workrooms of 1890 comparatively rare. Ventilation has been improved both by the requirements of legislation and

by progress in its technique. He might still, however, find in some places pretty bad conditions. He would not find any very cold workrooms except by a breach of the law.

He would naturally ask about industrial disease. What has been done about phossy jaw? And about lead poisoning? He would learn with pleasure that phossy jaw was a thing of the past, and that lead poisoning had been immensely reduced. He might remember vaguely that there were a number of other forms of ill-health to which attention was being paid round about 1890, but the exploration of occupation after occupation had scarcely begun in that year; and he would probably be astonished at the elaborate codes of regulation for many different kinds of workroom, and by the number of forms and records which had to be kept or sent to the Home Office.

There would be more machinery, more powerful machinery, and more speedy machinery, than in 1890, and many processes formerly done by hand would now be mechanical. He would doubtless be shown many guards and other safety devices, and he would probably get the impression from conversations that risks had been much reduced. But if he looked into the statistics of accidents he might well feel doubtful whether that was indeed the case.

In some industries he would come across statutory welfare provision, of baths, of mess-rooms, and so on; and he would meet welfare supervisors, appointed for the most part by an employer of his own free will. And he would certainly wonder at the bearing of the workers, and at the many evidences of their improved status in industry.

There can be little doubt that his main impressions would be of great changes for the better; and of something quite as hopefully significant as the actual achievements, of a new power, arising out of new knowledge and new willingness, to make still further advance.

II.

It will be convenient, as this book draws to its close, to recapitulate quite shortly some of the outstanding defects in existing factory legislation and to indicate the chief steps,

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legislative or administrative, which in the opinion of the writer should be taken in the near future.

The chief gaps and defects seem to be :

(a) There is no protection at present for important classes of workers, notably navvies, house painters and plumbers, and repairers of ships which are in harbour but not in dry dock.

(b) Existing legislation as to hours and length of spells is thoroughly out of date and lags behind normal current practice.

(c) There is no legislation dealing with the hours² of adult males ; and in many other respects they lack adequate protection.

(d) There is no general provision for compulsory lighting of premises.

(e) The existing provision and practice as to certificates of fitness for young persons are very unsatisfactory.

(f) The provisions intended to secure safety are clearly inadequate to attain their purpose.

(g) Existing factory legislation contains a large number of unnecessary and mischievous exceptions and anomalies.

E.g. Young persons employed in workshops are not required to have certificates of fitness, except by Special Order of the Home Secretary.

S.73, notification of certain diseases, does not apply to docks or railway sidings. (This is important in reference to anthrax.)

S.157 exempts men's workshops from the operation of a number of clauses of the Act.

Women and young persons are allowed to work longer hours in non-textile factories than in textile factories. There is no reason, other than the historical reason, for this difference.

The present writer would like to see the following amendments (with many others of less importance) in legislation and administration.

(1) A consolidating Act should be passed : the need for

² Except the regulation of the hours of some classes of pottery workers. See pp. 34-5.

this is generally admitted. In the drafting of it many anomalies could be avoided and exceptions could be reduced to a minimum. S.157 of the existing Act should be repealed. The Factories Bill of 1924 deserves the closest study.

(2) The Convention as to Hours of Work (Washington, 1919) should be ratified, and the necessary legislation be passed for an eight-hour day and forty-eight-hour week.

(3) The maximum spell should be fixed at four hours, with power to the Home Secretary to allow exceptions.

(4) There should be a general legislative provision as to sufficient and suitable lighting, with power to the Home Secretary to fix standards for different kinds of work.

Cleaning of windows at regular intervals should be compulsory.

(5) The Home Secretary should have power to prescribe standards of temperature for different kinds of work.

(6) The Convention as to the Use of White Lead in Painting (Geneva, 1921) should be ratified.

(7) A schedule should be drawn up of articles in the manufacture of which the use of lead was forbidden.

(8) For the term "fencing" in S.10 of the existing Factory and Workshop Act the word "safeguarding" should be substituted, so as to cover all safety appliances and devices.

(9) The Home Secretary should have power to prescribe standards of competence for men engaged in dangerous work or in positions of responsibility where incompetence might endanger others.

(10) Regulations for the construction and repair of buildings should be put into force.

(11) The Truck Act should be amended.

(12) The same authority should conduct school medical examinations and supervise the issue of certificates of fitness. It would seem best that this should be the Local Authority, responsible to the Ministry of Health. Provision should be made for the re-examination of young persons.

(13) The Factory Department of the Home Office should not fail to make regular collection of the returns of persons employed, authorized under S.130.

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(14) The number of factory inspectors should be increased to make possible at least one visit yearly to every work-place.

(15) An Inter-Departmental Committee should review the protection given at present to all classes of workers in this country, with a view to discovering and providing for unprotected classes and to removing any marked and unnecessary disparity of treatment.

And

(though technically this is educational legislation and not factory legislation)

(16) S.10 of the Education Act of 1918, directing the setting up of continuation schools should be brought into operation. And a wide adoption by local authorities of the power given under S.8 to raise the school leaving age to fifteen is desirable. Boys and girls do not become men and women on reaching the age of fourteen; there is abundance of evidence as to the deterioration which now takes place during the two or three years after leaving school.

III.

Comment has been made by many writers on the piecemeal nature of our factory legislation. That it should be of such a kind was probably inevitable in view of its origin as a number of departures, grudgingly allowed, from a principle of non-interference. Particular remedies were applied to particular evils, when these were shown to be intolerable. There was then extension from one kind of work to another, and from one kind of provision to another, as the logic of the situation asserted itself or was forced home by philanthropists. At most points there was opposition and compromise, and the exigencies of parliamentary procedure often marred the symmetry of a Bill. The result is that the Factory Acts of to-day, with the orders and regulations dependent upon them, are a mass of definitions and of enumerations, of exceptions and of anomalies, most difficult to grasp and known in detail to very few persons.

A code of industrial legislation is bound to be complicated in a complicated industrial society, and it would be a mistake to aim at a delusive simplicity. But it might be built up according to method and principles.

The theory of non-interference is not held by most people any longer. Where there is objection to some new regulation it is usually on the ground that this particular change is undesirable, not on the ground of general principle. The modern theory is that the community should insist on minimum standards of conditions for all workers. But this theory does not as yet dominate all men's minds in the way the old theory did, and industrial legislation remains therefore to a large extent casual and empirical.

But it should become less and less empirical. It is possible now, as it was not possible formerly, to lay down scientific standards; we have the means of determining with considerable precision both the truth as to existing conditions and also what conditions would be conducive to health and efficiency. Scientific measurement disposes of many objections which could formerly be sustained, and it increases the likelihood of agreement.

Industrial legislation is therefore accepted with less unwillingness than in the past. Another strong reason why this should be so, is that so much of it is agreed legislation. The early Factory Acts were imposed upon protesting mill-owners by other sections of the community, especially the landed classes, ready to

"Compound for sins they were inclined to
By damning those they had no mind to."

But much modern regulation, especially the detailed regulation of particular industries, is self-regulation. Such regulation can be more precise and more closely adapted to the conditions of an industry than any regulations imposed mainly from outside could be.

It would seem, then, that the time is ripe for a broader survey and a more logical handling of our industrial legislation, which is notoriously confused and unequal at present. In the first place, there should be a definition, as

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wide and general as possible, of the kind of work which is to be regulated. This can be made more explicit, if it is thought desirable, by specific mention of classes of work, where dispute might otherwise arise as to whether they came within the category. But the building up of legislation by specific enumeration is to be deprecated¹: there are inevitable gaps.

It was one of the merits of the Factories Bill of 1924 that it proposed to do away with the distinctions between textile and non-textile factories, between factories and workshops, and between the different kinds of workshops (men's workshops, domestic workshops, etc.). It also included within the new and wider definition of factories such places as foundries, which at present are only so regarded by specific enumeration. It then proposed rules of general application; and it made provision both for more detailed regulation of individual industries and for exceptions where needed. In this way a code could be built up which was simple and yet flexible. It is much to be hoped that such a Factories Bill may soon become law.

But it has already been argued that this does not go far enough. After all, this Factories Bill proposed, like its predecessors, to add to the scope of factory legislation by enumerating certain workplaces to be deemed factories. Thus, ships in harbour and navvying operations would have been brought within the scope of some of the clauses of the Bill. There is still the objection that such procedure is likely to leave gaps. It would seem to be desirable, and it will probably be inevitable as the International Labour Organization gathers momentum, that our nation and all other industrial nations should pass general legislation for the protection of the workers. It ought not to be impossible to lay down certain standard conditions as, for instance, with regard to warmth, light, ventilation and cleanliness. Factory Acts, Coal Mines Acts, Shop Acts, Office Acts, and so on, would then have their subordinate place as detailed applications, or modifications, or supplementings, of this general Act.

¹ See Tillyard, *The Worker and the State*, p. 21.

IV.

In conclusion, the main findings of this book can be summarized in a few sentences.

The period from 1891 to 1924 is marked by great advances in factory legislation. The principle of *laissez faire* was virtually abandoned, even with regard to adult males. Medical and chemical science were applied to problems of industrial hygiene.

The greatest improvements were in the admittedly unhealthy trades. More attention has been paid recently, and should still be paid, to raising the general level of industrial health.

There was no corresponding advance in safety, in spite of much effort and ingenuity and some successes here and there. Industry is probably almost as dangerous to-day as it was in 1907, and it was distinctly more dangerous in 1907 than it had been in 1891. The reduction of the number of accidents is a task needing the most serious attention. *This is, of all that is written in this book, that which needs to be stressed most.* The present high accident rate is taken as a matter of course by far too many people, employers and workers and the general public. It is almost certain that the number of accidents could be reduced by at least a third in a very few years, if appropriate steps were taken, and it is likely that it might be brought a good deal lower than that.

The disappearance of children from the factories is one of the outstanding good features of the period.

Legal regulation of hours of work has made little advance, and lags badly behind the common practice of to-day.

The War hastened the coming of a new and positive outlook on industrial questions. We have the beginnings of a systematic study of industries with a view to the maximum of welfare and efficiency.

Fresh industries have been brought from time to time within the scope of the Factory Acts. There remain other industries, notably house decoration and navvying, which should receive protection. There should be made a survey

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of all industrial labour in order to see what protection it needs and obtains.

The law is reasonably well obeyed in this country, but the number of factory inspectors is inadequate to their task. It should be increased. But side by side with that, there should be an increased sense of responsibility and an increased vigilance on the part of employers' associations and of trade unions.

Organized industries should take more and more part in helping to frame legislation and to enforce it, but the community should not in any way abrogate to them its ultimate responsibility.

Money could be spent to great advantage in additional research and in obtaining better statistical records.

The establishment of the International Labour Organization is potentially the most important happening of the years 1891 to 1924. It should remove the fear of unequal competition, which has been one of the most powerful obstacles to progress in factory legislation. There are likely to be immense gains from international surveys of industry, from the setting up of international standards, and from the exchange of administrative experience.

CHRONOLOGICAL TABLE.

1889. Cotton Cloth Factories Act.
London Dock Strike.
1890. Berlin Conference.
Final Report of House of Lords Committee on the Sweating System.
1891. Factory and Workshops Act.
1892. First Inspector of Particulars appointed.
Shop Hours Act.
1893. Two Women Inspectors appointed.
Working men appointed as Inspectors' Assistants.
1894. Quarries Act.
Coal Mines (Checkweigher) Act.
Industrial Accidents Act.
1895. Factory and Workshops Act.
Appointment of Departmental Committee on Dangerous Trades.
1896. Truck Act.
1897. Cotton Cloth Factories Act.
Workmen's Compensation Act.
1898. First Medical Inspector appointed.
1899. Education Act.
Final Report of Departmental Committee on Dangerous Trades.
1900. International Association for Labour Legislation founded.
1901. Factory and Workshops Act.
1902. Electrical Inspector appointed.
Report of Departmental Committee on Ventilation.
1903. Employment of Children Act.
1905. International Conference at Berne.
1906. Notice of Accidents Act.
1907. Factories and Workshops Act.
1908. White Phosphorus Matches Prohibition Act.
Children Act.
Report of Departmental Committee on Truck.
1909. Trade Boards Act.
1910. Report of Departmental Committee on Accidents.

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- 1911. Factories and Workshops (Cotton Cloth) Act.
National Insurance Act.
- 1912. Coal Mines (Minimum Wage) Act.
Shops Act.
- 1913. International Labour Conference at Berne.
- 1914. Outbreak of Great War.
- 1916. Police, Factories, etc. (Miscellaneous Provisions) Act.
- 1918. Armistice.
Workmen's Compensation (Silicosis) Act.
Trade Boards Act.
- 1919. Treaty of Versailles : International Labour Organization
established.
International Labour Conference at Washington.
Anthrax Prevention Act.
Checkweighing in Various Industries Act.
- 1920. Women, Young Persons and Children Act.
Women and Young Persons (Employment in Lead Pro-
cesses) Act.
First Woman Certifying Surgeon appointed.
- 1921. First Woman Medical Inspector appointed.
Ministry of Health established.
- 1922. Irish Free State established.
- 1923. Workmen's Compensation Act.

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