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The formation of factory legislation on health protection in Europe and Russia in the 19th to early 20th centuries

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The paper describes the main stages in the development of legislation on the protection of production workers' health in countries of Western Europe and Russia in the 19th to early 20th centuries. The working conditions of the workers are revealed, including those of women and children. The legislation introduced aimed at protecting the health of factory and plant workers is discussed, and the role of doctors in the formation of factory legislation is reflected upon, as are its main deficiencies during the period.

Keywords: *Factory legislation, occupational hazards*

The formation of factory legislation is associated with the beginning of the 19th century. One of the essential preconditions for the legislation's creation was the development in the 19th century of the relatively new scientific discipline of occupational disease. Up to almost the mid-19th century, all professions had a deleterious impact on health. [1] Those working in the paper and dye industries experienced daily exposure to toxic chemicals, stone dressers and chimney sweeps inhaled dust, bakers, blacksmiths and those working in glass and arms production were subjected to overheating. [1]

Outstanding Renaissance scholar Paracelsus first pointed to the existence of occupational diseases. He believed that the doctor needed to know "how to help the blacksmith, the painter, the tanner, the woodcutter, the hunter, the angler and the soldier." [2] Italian physician Bernardino Ramazzini is currently considered the founder of occupational disease and health care. In his seminal work "On the diseases of artisans" (1700), he summarized the results of long-term observations and based on these observations proposed methods of treatment and prevention of various occupational diseases. [3] Although Ramazzini's proposals were not implemented during his lifetime, later they were one of the reasons that employers were compelled to pay attention to working conditions.

The increase in the number of factories in the second half of the 18th century led to a sharp

increase in the number of workers employed in manufacturing. For example, at the end of the 18th century in one of the most industrially developed countries – England – workers and factory employees made up half the population. One of the notable features associated with the development of factory production was an increase in the proportion of female and child labor, which was associated with the introduction of the first machines (bench machines, etc.). These did not require hard physical labor in contrast to the work of a tradesman laboring in workshop. In England, the invention of the Kay's flying shuttle (1713) radically changed the working conditions in the weaving industry. At the end of the 18th century (1774-1784), James Watt proposed the steam engine, which marked the beginning of machine production as a means of production. In 1788, 26,000 men, 31,000 women and 35,000 children were working in the weaving industry in England. [1] Given that at the time, the working day was approximately 15 hours long (and sometimes more), you can imagine the working burden experienced by those employed in this form of production.

Government interests, connected with the need to develop industry, and unrest among workers, who had been driven to despair, dictated the need to protect employees in the workplace. One means of such protection "became the development and introduction of special factory legislation, to limit the possibility of worker exploitation and allow for government or public oversight to monitor the conditions of employment." [4, p. 43] The first state legislation

aimed at protecting the health of workers appeared at the beginning of the 19th century. England became the first country to adopt a number of laws restricting the exploitation of workers. Thus it was no coincidence that at the time the world's first large-scale school for hygiene and sanitary industrial supervision physicians was created in England. Its creator was sanitary physician and surgeon D. Simon who, in his annual report on public health, published data on the harmful health effects of industrial workers' detrimental working conditions. In many ways, it was at the instigation of sanitary inspectors that factory legislation was formed in Europe. England passed laws restricting working days to 12 hours in 1802, 1819 and 1832. It also reduced the working hours of women and adolescents to 10 hours, and limited the hiring of young children (under the age of 9 years). The working day for this category of workers was at first 10 hours and then 6 1/2 hours. Working underground (in mines) at night, on Saturdays and Sundays was prohibited for young children. Also in accordance with these and subsequent laws (1833, 1844, 1847) the Factory Inspectorate was created, which monitored the implementation of legislation, as well as compliance with safety measures in working conditions. [4] Workers' trade unions played an important role in the improvement of factory legislation. The first of these was the spinners union (1829), and later the famous British Trades Union Congress (1868), considered the most authoritative trade union of the British workers.

In 1839 and 1851 similar laws were passed in Prussia.

In Russia, factory legislation arose much later [5], which is not surprising, since in the first half of the 19th century. the proportion of workers employed in industry was very small. The earliest legislative acts (1845 and 1866) were not consistent and their implementation was monitored by nobody. For example, in this period, labor issues were discussed at a specially created government commission chaired by A.F. Stackelberg (1859-1862), P.N. Ignatyeff (1870-1872) and P. A. Valuev (1874-1875). It was suggested that factory legislation be taken from Western Europe, in particular from England and Germany. However, none of the legislation proposed by the commissions was passed by the higher authorities.

The first act of factory legislation in Russia dates to the early 1880s. As was the case with European legislation, the first Russian legislation was related to child labor. In 1882, a law was adopted on labor arrangements for minors ("On minors working in factories and manufacturing centers." (01.06.1882) [6]) Some researchers believe that it is with this law that the formation of factory legislation began in Russia. [7]

According to this document, night work for children under 15 years was prohibited, and the working day for children aged 12-15 years was limited to eight hours. Opportunities for children to attend school (at least three hours per week) were also provided for. An interesting fact is that the initiator of the adoption of this law was the Russian Finance Minister N.K. Bunge. Another reason was demonstrations by workers in 1885 (the strike of workers in textile factories in Orekhovo-Zuevo) and in 1896 (a major strike in St. Petersburg). [8] The factory inspectorate was founded in the same year to monitor the implementation of the adopted law. A chief inspector (E.N. Andreev) was appointed to the inspectorate as were two district inspectors – one in Moscow (Professor I.I. Yanzhul) and one in Vladimir (Dr. P.A. Peskov). In 1885 a law was passed on night work, restricting women's and children's work at night ("On the prohibition of night work for minors and women in factories, mills and manufacturing centers" of 03.06.1885). [2] In some types of manufacturing (textile industry), night work for women and children was prohibited. The law on hiring workers came into force in 1886. [9] According to some of its provisions, workers were allowed to be fined only for "incorrect work," "for absenteeism" and "order violations." The maximum fines were set at the same time, with their total amount not exceeding one-third of their wages. In 1897 a law was passed – "On the duration and distribution of working hours in manufacturing industry establishments" – establishing working hours in factories and plants (up to 11 1/2 hours). In addition, the law provided for no more than 10 hours of night work, as well as a ban on Sundays and holidays. The law covered 60 provinces of European Russia, in contrast to earlier laws affecting mainly Moscow, St. Petersburg, the Vladimir province and territory of the Kingdom of Poland.

The adoption of these laws was preceded by a huge amount of work carried out by doctors, representatives of domestic public medicine, among whom were F.F. Erisman, E.M. Dementiev and A.G. Pogozhaev [9]. From 1879-1885, they examined the working conditions at 1,080 enterprises, which employed 114,000 people. Their work was compiled in 17 volumes – "A collection of statistical data on health research conducted at factories in the Moscow province for 1879-1885." This work was the world's first "complex study of the social-hygienic living conditions of the industrial proletariat." [9, p. 76] A factory medicine section was created as part of the Pirogov Medical Society. At the society's eighth congress (1902), a demand for an eight-hour working day was put forward, as well as business owners taking responsibility for workers' injuries and occupational diseases. At the following 19th congress of the Pirogov society (1904), the idea for state workers' insurance in case of illness or injury was backed. [9] Although it was not adopted immediately, it was for these reasons that the idea of workers' insurance was adopted in a package of laws in 1912 ("On the establishment of councils for workers' insurance", "On the establishment of councils for workers' insurance", "On providing for workers in case of illness," "On workers' insurance against accidents"), under which the owner of a factory or plant was to provide first aid to the injured and outpatient treatment at the workplace. In addition, they paid for workers' treatment (until they recovered, but not more than four months) and medicines. Treatments were partially paid for at the expense of workers who had 1.3 percent of their salary deducted for health insurance.

Medical funds (provided in accordance with the same legislation) were established at each plant employing at least 200 workers. A separate piece of legislation concerning women was approved. For example, for two weeks prior to giving birth, female workers were issued with a half to a full pay packet. The same amount was paid to women for four weeks after giving birth.

An act from 1912 also provided for the issuance of fixed sums for burial in case of a patient's death. The legislation applied only to members of the medical funds. It should be noted that in addition to payment for treatment, a member of the medical fund received monetary benefits. In this case, the first 13 weeks was paid out of the medical fund, and later (at a rate of two-thirds of regular wages) from the insurance capital. Workers received these benefits until rehabilitation or until pension payments started.

Factory legislation in Russia was not without a number of drawbacks. These included:

- weak control over its implementation (the state factory inspectorate staff was negligible);
- the legislation applied only to workers of large enterprises and in a certain type of production (employees of small handicraft workshops, agricultural and construction workers practically did not fall under the law).

However, workers began to receive some protection in the 19th century. Although entrepreneurs often tried to evade their responsibility for workers' protection, in general the factory legislation's norms were carried out. The work of physicians played a significant role in the formation of factory legislation, aimed at protecting the health of those employed in manufacturing.

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