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OF THE

CHIEF INSPECTOR

OF

FACTORIES AND WORKSHOPS

For the Year 1906.

REPORTS AND STATISTICS.

Presented to both Houses of Parliament by Command of His Majesty.



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Miss Squire, Miss Tracey, Miss Slocock. Generally the most unsatisfactory and injurious conditions are found in works where the process is carried on intermittently, and where several visits of routine inspection may have been made before the carrying on of the process is disclosed to the Inspector. Where the work is carried on regularly, the immediate ill-effect on the health of the workers is so marked that occupiers and managers have the strongest incentive to introduction of improved machinery. The following extract from a report by Miss Squire in a visit to a large printing works is of interest in this connection :—

I found 10 women and girls bronzing by hand at the back of the litho machine in the large machine room. The girls were wearing paper caps, and some had overalls; milk was being supplied twice a day. ~~No other precautions were adopted; the girls seemed unskilful and were causing a great deal of dust to arise in the process of smearing on the bronze powder with rods.~~ The manager of that department and the foreman over the girls each complained separately to me (and asked me not to let the firm know they had done so) that they had no facilities for taking on a big bronzing job such as this in the department. The order had already occupied a week to execute, and would take another week. It should no doubt be done by bronzing machines with which this department is not provided. The letterpress printing department is the one in which bronzing is provided for by a separate enclosure with machines and exhaust ventilation; here the work was being properly done. The employees too in this letterpress printing department are entered on the health register and have been examined by the Certifying Surgeon; those I found bronzing in the litho department are not on the health register. I considered one of the young women unfit for the work from what she told me of her health generally and of her feelings since working on the bronze. I spoke later of her to the general manager and of the general conditions; he sent orders at once for her to be transferred to other work, and arranged that all those now bronzing should be seen by the Certifying Surgeon.

I am writing to this firm urging upon them to carry out the voluntary regulations with regard to this litho department.

Miss Deane and Miss Slocock in the Special Report on Printing Trades (Appendix I, page 248 below) point out how seldom they have found the Voluntary Rules satisfactorily carried out, and that "employers urge the intermittency of the work as an excuse for neglecting them." In one factory where Miss Deane found a "Health Register" in use, the "periodical examination by the certifying surgeon resulted in a considerable number being transferred to 'other work.'" She is of opinion that in those places where bronzing is steady :—

The introduction of an immensely improved form of bronzing machine* with special exhaust ventilation attached to it seems to give some hope that this unwholesome process may be carried on with immunity. The machine is, however, an expensive one, and at present I have only seen it in a few places, where, however, the total freedom from any speck of dust, the speedy and economical work, the excellence of the results will (I am informed) shortly repay the cost of installation. I have seen a good deal of bronzing this year, but with the exception of the suggestion regarding the supply of milk, I have not found that the voluntary special rules have been in general attended to.

Of all injurious dusty processes of which I have again in 1906 received repeated complaints, none, I believe, surpass in injuriousness to the workers the sieving, preparing, carding and spinning processes in manufacture of asbestos. The following is a characteristic complaint :— "Asbestos manufacture . . . noxious dust from carding engines and breaker. The breaker, colloquially called the 'Devil,' produces a great deal of dust; there are two fans in the room, but these are not connected with the machines, so that they merely circulate the dust. Girls from 14 upwards look after the machines. A fortnight after the place is swept down the dust lies half an inch thick on the beams."

(iii) Processes not under special regulations.
(a) Asbestos.

I visited this factory with Miss Martindale and found the exhaust totally inadequate through the lack of purposefulness in the manner of installation. The complaint gave but a mild indication of the thick, fog-like atmosphere of dust that we found. Wherever carding and preparing processes are in progress in such works, unless exhaust ventilation is closely applied with suitable hoods and ducts to the point of generation of the dust, I have found that the atmosphere is of a thick whitey-yellow consistency with larger particles floating about therein. As we reported in 1898, microscopic examination of this mineral dust shows the sharp jagged nature of the particles, and wherever they are allowed in this manner to remain suspended in the air, injury, more or less serious, ensues for the respiratory organs of the workers. At every visit such notes ensue from inspectors as the following :—

Miss Martindale.—1st Factory: L.K., aged 15 years, employed six months sieving by hand . . . is excessively hoarse and suffers much from morning cough. She complained of the

* Mark Smith's patent, the Vacuum Safety Bronzing Machine, made by Taylor, Garnet, Evans & Co., Ltd., Redditch, Stockport.

effect of the dust on her health; has not consulted a doctor. M.P., employed two years on teasing machines; very hoarse, and suffers from a bad cough; complains that some asbestos is more dusty than the kind at which she is at present working. . . . 2nd Factory: One woman complained of bronchitis, and a few stated that they suffered from a morning cough . . . about three weeks ago a spinner died of consumption. Visited her home to enquire, and found that she died at 24 years of age after working six years as asbestos spinner; for three years she had suffered from a morning cough, and for the last 10 months of her life was unable to work; none of her relations had suffered from consumption.

Much time for patient research among workers who have dropped out of this employment is necessary before any true idea can be formed of the effect of the process.

Miss Deane re-visited recently for me the asbestos works on which I specially reported to you in 1898 on account of marked injury at that time to the health of the workers. There a greatly improved installation of exhaust ventilation was applied to the carding machines, and Miss Deane reports now that there is far less complaint of injury to health. In one very large asbestos works in the textile district of Lancashire an excellent system of exhaust ventilation has been applied to every machine, and it is reported that the health record is good. The complete register of this special class of works, which you have had compiled for our use, will materially aid us in bringing all into a better condition. Miss Paterson is following up the question as regards Scotland and the North of England.

Similar complaints are received in regard to preparing processes in a large Northern silk factory where waste silk is dealt with. In most respects the health conditions, as regards dust, remain there much as they were when we first reported on them. The firm have been repeatedly instructed and given opportunity and ample time to try various methods of dust extraction with little result.

Miss Squire.—I revisited the combing sheds after an interval of 16 months, and I regret that I found the condition of one of these as bad as I have ever found it. It is most disheartening that after years the workers should be exposed to nearly the same conditions. I have just read again my reports of 1901 and 1904, and I find that they accurately represent the present conditions. I was met last week with the same complaints from the women as in former years: "the dust is as bad or worse than ever it was"; "we are choked"; "we cannot some days touch food." They came round me, eager to pour out their complaints, and blamed me for staying away so long. It is true that some further means of ventilation had been provided, but previous mistakes had been repeated, owing to the firm's relying on their own unscientific methods. In this shed I found 18 hoods (connected by pipes with a central trunk communicating with a fan) placed over 18 "shakers." These had been put up some months before. The women and men complained that these had made matters worse, and that "the hoods beat the dust down." This seemed to me the case, and I found the hoods choked with dust. I got a member of the firm to inspect the hoods with me, and he acknowledged that they were blocked. He promised to have them cleaned out. I arranged to visit the following week and see the system at its best. H.M. Inspector, Mr. McCaghey, at my request accompanied me to test the hoods with the anemometer. The instrument showed that there was no draught at all, except a down draught at one of the pair of hoods nearest the fan. In the same shed six larger hoods have been placed over six of the shakers, and here, although there appeared to be little result and the women said they had made no difference, the anemometer registered a velocity of 1,130 linear feet per second, and 516 linear feet at the other tested. The smell in this shed was most offensive and the dust so irritating that I suffered considerably the rest of the day, as on former occasions. It was of the dust of this shed that Dr. Legge reported:

The dust consists of debris of the chitinous horny skin of the pupa case of the silkworm together with portions of the body of the larva . . . there were present an enormous number of hook-like structures, which were probably portions of the thoracic and abdominal segments of the horny pupa case. The whole of the dust was more or less filled together by interlacing silk fibres, but the dust is so heavy that it can be easily separated by the least touch . . . it may be described as silk worm rather than silk dust. . . . The inhalation of the kind of dust described must be injurious.

I am informed that the firm are considering the adoption of machinery to free the material from dust before it comes to the carding. This course has been urged upon the firm again and again without result.

In the other combing shed the conditions were (by comparison) pretty fair, but in one bay, in which the first combing is done, the dust was terrible, and bitter complaints were made by the women. This bay is not affected by the overhead fans in other parts of the shed. In my opinion to make the large fans effective, warmed air should be admitted at a sufficient height from the floor.

Another room, previously described, is still very bad with its clumsy wooden covers and ducts at right angles to the main duct. The new adjoining room, where downward suction has been provided, was a pleasant relief here, although elsewhere the conditions would not be called "good."

I have above illustrated the danger of accidents in . . .