

NOTES ON THE MORTALITY OF OCCUPATIONS.

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THE time at our disposal does not admit of a very extensive review of the diseases of occupation, but I shall ask you to look at three groups as illustrating the variations in the death-rate which occur at certain ages.

And first of all I will ask you to consider what may be regarded as the normal death of males in Glasgow at the age periods when the influence of occupation begins to be felt, viz., 25-65.

According to the last census the males living in Glasgow between the ages, 10-65, numbered 288,039. Of these, 163,029 were living between the ages, 25-65, and among these, in the 3 years 1900-1-2, 8,681 deaths from all causes occurred. When these deaths are arranged in decennial periods as at ages 25-; 35-; 45-; 55-; and regarded as occurring among three times the census population living at each age period, the death-rates are as stated in the following Table, in which is included, for purposes of comparison, the compared rates of two earlier periods calculated on the central population of each:—

GLASGOW.—Males : Death-rate per 1,000 living at certain ages in several periods.

| PERIOD. | 25- | 35- | 45- | 55- |
|-----------------|-----|------|------|------|
| 1881-1890 | 9·3 | 15·2 | 26·5 | 45·8 |
| 1892-1900 | 8·2 | 14·2 | 24·8 | 45·5 |
| 1900-1-2 | 7·8 | 14·3 | 25·9 | 47·1 |

DEATH-RATE OF MALE WORKERS IN CERTAIN OCCUPATIONS (1900-2).

| | | | | |
|--------------------------------------|----|----|----|----|
| (a) Dress Materials | 9 | 15 | 33 | 61 |
| (b) Brick, Cement, and Plaster | 13 | 18 | 44 | 42 |
| (c) Labourers | 17 | 28 | 52 | 96 |

In the first two periods the rates are calculated on the populations as estimated for Life-table purposes, while in the last the population is obtained from the number of males, occupied and unoccupied, ascertained to be living at the last census. The rates, therefore, are fairly comparable, and may be taken as a standard by which to measure the effects of occupation on groups living at corresponding ages.*

In classifying all males as to occupation, the Registrar-General arranges them in 23 groups or orders and 83 sub-orders, and having obtained a knowledge of the death-rate for all orders at given ages, the divergencies of the groups may be noted.

Workers in Dress Materials.—Our first illustration may be taken from the workers in dress material, and will illustrate the effects of dust in textile fabrics, combined in many cases with imperfect ventilation, and in some with fluctuations of temperature.

At the ages already stated the death-rates here are 9, 15, 33 and 61. A further illustration is afforded by the workers in brick, cement, and plaster, and the figures at the same ages run as follows—13, 18, 44, and 42. To a considerable extent these variations must be regarded as arising from the conditions of occupation of the respective groups. My last illustration is from the class of unskilled labourers, and the rates are 17, 28, 52, and 96. I may explain that the term labourer here includes unskilled labour of all kinds. Following upon the reference which the President has made to the Comparative Mortality figures of the Registrar-General for England, I endeavoured to adopt a scheme which would have given comparable results; but found that the grouping of occupational deaths did not admit of a sub-division of labourers into various kinds, such as shipyard, foundry, quay, masons, labourers, &c., and so I had to deal with all labourers together, and make them representative of the great class of unskilled workmen.

One striking result of this grouping is shown when a Comparative Mortality figure is prepared for each. If we regard the deaths from all causes of all males as being represented by 1,000, then the corresponding figure for the group of workers in dress material is 1,196; for plasterers and cement workers, 1,341; and for labourers, 2,017: which represents more than double the rate at which all males are dying.

I would like to take you one step further, and consider the incidence of phthisis among the several groups with which we have been dealing.

* For convenience in comparison the rates for three groups of workers are placed at the bottom of the columns showing the death-rate at corresponding ages of all males.

Taking the same ages, we shall deal first with the dress and textile fabrics group. Here the conditions of work are necessarily indoors. Eighty-eight per cent. work for employers, and consequently a large proportion will work in factories. The death-rate from phthisis among them was 3·6, 5·7, 5·9, and 5·9 per 1,000 at the age periods 25, 35, 45, and 55 respectively. Again, among the workers in brick and cement, the rates are 3·5, 5·0,, and 3·5: while among the labourers the rates were 6·5, 7·1, 8·6, and 5·5. Comparing these with the rates obtaining among the professional classes, including ministers of religion, lawyers, doctors, artists, &c., the death-rate from phthisis in this class was at the same ages 2·1, 1·9, ·7, and ·5. From these simple illustrations, I hope you will be able to value the varying results of occupation upon health. If one asks the question, Why are the labouring classes suffering so much more than others? I think we will get our answer by referring to Dr. Oliver's paper which has just been read. Their occupation is of an extremely exhaustive and irregular character; irregularity in employment often means indifferent food, and the evil effect of this is too often supplemented by over-indulgence in alcohol. All these in time produce the sinister results on the death-rate which we have just seen.

A Paper was also read on "Trade Diseases and Accidents, and their prevention" by ALEXANDER SCOTT, M.D.

[*This discussion applies to the papers by PROF. THOMAS OLIVER, DR. A. K. CHALMERS, and DR. ALEXANDER SCOTT.*]

DR. W. F. DEARDEN (Manchester) said that he had worked in a similar direction in Manchester to that of Dr. Scott in Glasgow as certifying surgeon, and he could from experience endorse his remarks, which deserved general attention. Dr. Scott had suggested a perfect system of medical inspection in factories and workshops. As most of those present knew, there is to-day a limited degree of medical inspection, but this was confined to factories and to workers of certain ages. Any child or young person up to 16 years of age had to pass the doctor immediately after obtaining employment. Factory surgeons knew what a great benefit that had been to the population, and he had got tables together for over 3,000 rejections for medical reasons, and roughly the proportion to all examinations came to about 0·5 per cent. That figure might not look very great, but when they reflected that it dealt with the whole of the young factory workers.

of the country, they would doubtless admit it indicated that a very important work was being done through this system of medical inspection. While he agreed with Dr. Scott's views very largely, he was afraid that what had been advocated that morning was beyond their utmost hopes for a long time to come; still, at the same time, they might look for a little improvement in certain directions. The points to which he wished particularly to allude, had relation to women workers. Dr. Oliver in his paper had referred to the change of occupation, and this change was really very remarkable, especially as regards the occupation of women and young girls. During the last fifteen years of his work a great alteration had taken place in the occupations of the female young person—that was the technical term—in factories and workshops. A great deal of the work formerly done by boys is now done by girls. As an illustration they might take French-polishing; the woodwork was done very cheaply, and the manufacturers could not afford to pay boys, who wanted extravagant wages to do the finishing, so put on girls to do the work. In many other directions the same change could be noticed, girls now being employed to do the work previously done by the other sex: they were paid very poor wages, and if they did not do the work properly were in some places heavily fined. There was also a great deal more of the regular work of girls done nowadays, such as in making up dress goods, underclothing, and things of that kind. Owing to the introduction of electricity these girls now came under the certifying surgeon. Previously their work-places were held to be workshops; but with the use of electricity these places come under the factory regulations. Now such women workers had the advantage of a medical examination, and his experience was that places of this kind generally had more rejections than other established works under the Factory Act. He thought that Dr. Oliver's remarks as to fatigue showed how necessary it was for them to be particularly careful with the workers of the female sex, who were not calculated to stand the same strain as men or boys. Women were employed on work that produced just as much if not greater strain than in the case of men, and therefore for that reason he thought there might with advantage be more medical inspection than there is for girls. He could not see any reason why a girl should be medically inspected up to 16 and not up to 18, or why a girl should be medically inspected for work in a factory and not for work in a workshop. He contended that the inspection could be extended to girls working in workshops as well as in factories, and the inspection age raised to 18.

DR. ELLIS (Stourbridge) said he had been equally interested in Dr. Scott's paper, and supported all that had been said in praise of it. He was a certifying surgeon in a district where lead poisoning had been a very serious danger to the workpeople, and he rose to support the view that there are good effects from definite and well carried out plans for the protection of the workmen against the injurious effects of the trade. Fans had been established for preventing the

dust from what is called the putty used for polishing of glass in these works, and it consisted of a large quantity of lead oxide. The dust that used to be produced by this work would seriously affect the health of the boys who commenced early in life to assist the workmen by supplying the putty paste. As a result of the work of pioneers in the investigation of lead poisoning or the ill effects of this particular trade, the boys were prohibited from supplying this putty in the way they did formerly, and could not come in contact with it; they were screened off, so they did not suffer to anything like the extent they used to. Indeed, it was now an extremely rare thing to find a boy up to the age of eighteen suffering from lead poisoning, whereas ten or fifteen years ago it was quite a common thing to find that lads after two or three years' work at the trade were suffering from it. With regard to other branches of the work, the men work in close rooms at long rows of benches down each side, and there used to be a considerable amount of dust in these works and in some of the workshops. No doubt there is dust now, but in consequence of the arrangements that were made for providing washing accommodation for these men in separate rooms, that disease has been considerably reduced. He gathered that Dr. Scott had said something with regard to intemperance being a cause, or one of the principal causes, of lead poisoning. That did not correspond with his own experience in these matters: the men working in the glass-coating shops were not intemperate men, as a rule. Indeed, on the contrary, they were a steady class of men who did not earn very high wages, and did not drink very much for the good reason that they had not got the money. But the effect of lead poisoning had been very disastrous among them twenty years ago, though it had very much diminished now. In one or two workshops in which they had acted upon some suggestions he made, to what he might call the better and more interested class of employers who had paved the floors and frequently cleansed the shops, the incidence of the disease had been largely reduced; indeed, in two of such shops he had not seen a single case of lead poisoning for twenty years, and the same workmen had worked there for ten or fifteen years. One man, who had worked there the whole time, had previously suffered severely, had given up the work for a year, and then gone back to the trade and had been perfectly well. He attributed these excellent results entirely to the dust that used to lie thick on the floor, having been dealt with, and the air made very much more pure.

COUNCILLOR J. BURGESS (Glasgow), as a textile worker for 20 years, felt qualified to say a word about the two papers. He noticed that all the papers had laid considerable stress upon the subject of the use of alcohol. He submitted that in that section they were not discussing the production of a perfect, or an impregnable workman, the man whose constitution could not be undermined in any way, or one upon whom the provisions of the Factory Acts and factory administration could have no effect at all. But they were rather dis-

cussing the conditions in the factories which could be modified by legislation, or by the wise management of those factories. Therefore, dealing with the subject from that point of view, and not with the grown person, but with the effect of the factory upon the child or young person, against whom this charge of alcoholism could not be justifiably directed, he would ask them, if they went into textile factories (of these places he had had 21 years' experience), what did they find? Taking the young person, in his day the age limit was 8, and he was working full time at 11, they found that person working in an atmosphere in which it was impossible to live healthily. The steam would fill some departments, or the fluff would lay an inch thick everywhere in others; that contaminated the air which had to be breathed all day by the workers. Then there was the use of china clay in the weaving sheds, and this produced enormous dust, and so the atmosphere had to be damped. Originally this was done by swilling the floors with buckets of water, on which the women had to stand all day, but now the more scientific method was the injection of spray steam. So that if they went into any factory in the Lancashire district they would find that the workers had to work all day in an atmosphere of dust and steam! their clothes would become sodden and damp, and in these wet garments they would have to go out into the street. This was a great cause of bronchial affections and tuberculosis in the textile districts. The medical officer of Glasgow had that morning put before them a most valuable statement, and attention should be directed to the last line of it, the labourer's phthisis death-rate. Now he ventured to say that was not an occupational death-rate at all, and few workmen got a more healthy occupation, having variety and fresh air; that death-rate was rather, in his opinion, a one-apartment death-rate.
