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HOUSE OF LORDS

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R E P O R T
OF THE
MINUTES OF EVIDENCE,
TAKEN BEFORE
THE SELECT COMMITTEE
ON THE
STATE OF THE CHILDREN
EMPLOYED IN
The Manufactories of The United Kingdom.

25 April—18 June
1816.

[COMMUNICATED BY THE COMMONS TO THE LORDS.]

Ordered to be printed 4th May 1818.

Veneris, 7^o die Junii, 1816.

SIR ROBERT PEEL, Baronet, in the Chair.

Richard Arkwright, Esq. called in, and examined.

DID not the spinning of cotton by machinery originate with your father, the late Sir Richard Arkwright?—Yes, it did.

*R. Arkwright,
Esq.*

Did he invent the machinery which gave rise to the fundamental part of the throstle and mule-machines?—He did.

As well as of the water-frame-spinning?—Certainly.

How many persons have you employed; at any one time, in all your mills?—About eighteen or nineteen hundred in mills which were my own, and in mills with which I was connected.

Have they been apprentices, or free labourers?—Chiefly free labourers; I never had any apprentices of my own; but in one of those mills in which I was connected there were about fifty or sixty at the most.

What is your opinion of the Act known under the name of Sir Robert Peel's Bill?—I could wish to confine myself to facts as much as possible.

What have you known of that Act?—That Act has not been followed up, with respect to the visiting of magistrates, for these thirteen years. I think they visited my mills at Cromford twice.

Did they give rise to any inconvenience by the visits they made?—Not at all; I was very glad to see them.

What made them discontinue their visits?—I fancy they did not think they were necessary.

But it is well known that the power under which they acted is not taken away from them?—I believe it is not taken away.

The same power exists, if there was to be any abuse?—No doubt.

At what age do you admit children into your mills?—Not till they are ten years of age.

Do you think any benefit would arise to you, if children were admitted into your mills at an earlier age?—I think not, at Cromford.

What are the hours of work per day in your mills?—Thirteen hours, including meal times.

That is from six to seven?—From six to seven in the summer, and from seven to eight in the winter.

What time do you allow for meals?—An hour for dinner. As to breakfast, it is very irregular. In the summer-time the bell rings for breakfast at half past eight; those who go to breakfast, which includes the workmen, but not the spinners, go and stay half an hour. There is a room called the dinner-house, in which there is a range of hot plates or stoves, much the same as in gentlemen's kitchens; the mothers, or the younger sisters of the hands employed, bring the breakfasts into this room; they bring them probably a quarter of an hour before the bell rings. As soon as the bell rings, a number of boys, perhaps eight, carry those breakfasts into the different rooms in the factory; those who come first may receive their breakfasts probably in two minutes; those who come later may not receive it for a quarter of an hour; so that possibly some of the hands may have eight-and-twenty minutes at breakfast, others cannot have more than fifteen, they cannot have less. In the afternoon the bell rings at four, and they are served in like manner; but very few have their refreshment, probably not one in five, I should think.

That is the afternoon refreshment?—Yes; so that there may be from forty to forty-five minutes allowed in the whole, in the morning and afternoon.

The machinery does not stop?—The wheels never stop during working hours, excepting at dinner; all that machinery, which is worked partly by hand and partly by water, stops.

That which is turned entirely by water never stops?—That which is worked entirely by water never stops during the working hours, excepting at the dinner-hour,

R. Arkwright,
Esq.

From your own experience and intimate knowledge of the business, do you consider those hours the best for the persons employed, and for the benefit of the master?—I have always considered them so, in such a situation as Cromford.

Do you know that other mills have been worked a greater number of hours per day?—I do not know it.

Have you heard it from pretty good authority?—I have heard it, and believe that they have.

Have the proprietors of those mills, which you have reason to believe have been worked more hours than your own, any advantage over you in the trade you carry on?—It does not seem as if they had; I know of none.

Are you of opinion that Sir Robert Peel's Bill, which passed in the year 1802, has accomplished much benefit for children, for whose protection it was intended?—I certainly thought that the discussions upon that Bill, and the Bill itself, did a great deal of good, but that can be only matter of opinion.

Are you of opinion that similar advantages would arise from legislative measures applied to the protection of children who are now employed in cotton mills?—That can only be matter of opinion; I cannot think it would; there is not the room for it there was then; great improvements have taken place since.

What security would the country have, if the business was to be carried on without action to the children employed in cotton factories?—The present law is if there is any improper conduct.

Bill applies only to parish apprentices?—And to all mills where persons are employed, with respect to cleanliness and ventilation.

Do you go into those factories where no apprentices are employed?—There were none in mine; I never had one.

Is that in one mill in which you had a concern, there were nearly 100?—I did; I was speaking of the mills at Cromford, in which I have

never had any apprentices. With respect to Mr. Oldknow's works, I cannot speak to that.

Had you an interest in those works?—Yes, I had, at the time of passing that Act; but I cannot speak to the number of apprentices, nor to the visitations of the magistrates.

There have been considerable alterations in the machinery since the passing of the Act alluded to?—Great improvements have been made in the management of the machinery since that Act was passed.

And in the ventilation?—Yes; particularly in cleanliness and ventilation.

There is no rule laid down for the mode of ventilating mills?—That Act only speaks of there being sufficient windows for the admission of air, but nothing about ventilation.

By the alterations that have taken place, are not you aware that younger children are introduced into cotton factories than were formerly?—I never heard of any children being employed so young as five till I came into this room.

What other ages have you heard of their being taken into factories at?—I have heard of their being taken in at six.

You never were in the habit of taking them in yourself under ten?—Not these ten years.

How are the children employed before they arrive at the age of ten?—I do not know that boys have any employment but going to school; girls have employment.

Are not both boys and girls, in general, educated before they are received into your factories?—It is a rule at Cromford never to admit any children under ten years of age, nor till they can read.

If a contrary practice was to prevail, would the children have any opportunity of acquiring a knowledge of reading?—They would acquire it at Sunday schools.

Are you of opinion, that working all the week is not sufficiently oppressive to young children to excuse their attending Sunday schools?—I never saw any children who seemed oppressed by their work.

You have not seen any under ten years of age?—Formerly they were taken in at Cromford younger.

At what age were they taken in there formerly?—I think, seven or eight, from the inquiries I have made; probably seven.

Do you recollect what gave rise to the alteration?—There were several reasons for it; I think the principal reason was, that they might learn to read before they came;

came; I do not think their health was taken into consideration, as no injury ever appeared to me to arise to it.

If the masters of factories through the kingdom were at liberty to take them at what age they thought proper, and afford them no education, what security would the public have respecting the health and morals of young children?—I do not know that they would have any security; I do not know that any security is necessary.

Are you of opinion, if no Act was in existence respecting the employment of young children in factories, that no legislative regulations would be requisite for their government?—It is a question I cannot answer.

Are you of opinion, that if the hours of labour in factories were fixed at twelve working hours, the trade we have with foreigners in cotton goods would be injured from that circumstance?—I should never consider that question at all in its connexion with foreign goods or foreign commerce. I should think every manufacturer would make goods as cheap as he could, all things considered; and he would work those hours, and follow those modes, that he thought would make his goods the best and the cheapest.

Then you have no decided opinion what would be the effect upon the foreign trade, if the time of work in factories was limited to twelve hours?—I should suppose that must have some small effect, probably; it is a question I cannot answer; I should not consider the question at all.

Are you in the foreign trade?—No, not at all.

Were not children from seven or eight to fifteen years of age, principally employed in cotton-mills some time after the invention of Sir Richard Arkwright?—Yes.

Was not the usual time of working twelve hours a-day, inclusive of breakfast and afternoon's refreshment?—Thirteen hours, inclusive of all their refreshments.

That included dinner?—That included dinner.

Did you find the health of the children impaired by that employment?—Not by that employment, I think.

Not when they were taken in so early as seven or eight?—I think not.

Did you ever observe that their intellects were impaired?—Certainly not.

Did you ever observe that their growth was stunted, or that they became deformed in consequence of their employment?—I have known of their becoming deformed; but I do not think that has been from the length of employment.

Or from the nature of it?—I have never known any that were employed in the day any number of hours, who have become deformed.

From your knowledge of the factories, do you conceive that the children employed in those factories are quite as sharp compared with children employed in other business?—I should think they are quite as sharp.

Are the persons now employed in cotton-spinning generally older, and is there a greater number of adults amongst those employed than there was formerly?—I do not know any thing of the mule-spinning.

Are the persons now employed in water-spinning generally older, and is there a greater proportion of adults than there was formerly?—Certainly there is a greater proportion of adults.

And are the children taken generally rather at a more advanced period of life?—I think they are in general; perhaps I may add, such young children cannot so well be employed, in water-spinning as they could formerly, and as they can, I understand, be employed in mule-spinning.

Under this change of circumstances which you have alluded to, if your mills were placed in a populous town or neighbourhood, where various means of manufacturing employment were offered, and where the habits of the people were irregular, and little under your control, would not you judge it expedient to introduce some regulations into those mills that had some conformity with the wishes and habits of your work-people, particularly as to the hours of labour?—I should think it would be necessary in a large town.

In such a situation do you conceive that you could have the same control over your work-people that you have at present?—Certainly not.

Did you alter your hours of working, or introduce any new regulations into your mills, in consequence of the visits of the magistrates?—I considered my mills at Cromford at that time clean, and in very good order, and well ventilated: at the same time I certainly examined into every thing, to see that things should be as correct as the nature of the case would admit, expecting the magistrates to come. There are some rules in the Act which were troublesome, and could

R. Arkwright,
Esq.

could answer no purpose, and was one reason why I examined particularly into the state of the mills: it mentions that every room and apartment in and belonging to those mills shall be white-washed twice a year. Now there are a great many rooms and apartments belonging to a large manufactory, which, to be at the trouble of white-washing twice a year, could answer no purpose, such as warehouses, and a variety of rooms; and it was necessary to see that all those were done, or I should be liable to the penalties of the Act. With respect to cleanliness and ventilation, they were matters that I had thought about, I think I may say, more than any other person, and on these points I certainly did not think it necessary to look over the works.

Then is the Committee to understand, that in point of fact no important regulations relating to the hours of employ, or to the health of your work-people, have been introduced by you into your mills in consequence of that Act?—None into my mills.

Since the time that magistrates have ceased visiting factories, do you not conceive that a great improvement has taken place in the condition of those factories, and in the management of them?—I think improvements have been constantly making, particularly with respect to ventilation and cleanliness, for the last twenty years. I have no doubt the discussion upon Sir Robert Peel's Bill facilitated those improvements.

Is it your opinion then that the discussion upon the subject, by drawing the general attention to it, operated favourably upon the condition of the factories rather than the Bill itself?—I think more than the Bill itself.

Have you ever compared the effect of labour upon the adults, and upon the children?—I never saw the children affected at all by the work; and it is very extraordinary, from my house, I see the children playing in groups in the summer time till it is dark.

Then in fact the hours of labour do not appear to have any injurious effect upon the children?—I do not think the hours of labour have any injurious effect; I speak of the labour at Cromford.

You have mentioned, that with regard to deformity, since the employment by night had been discontinued, you remarked that nothing of that sort had occurred?—I think not. There are two boys at Cromford now who are deformed, and I have inquired the cause of it from medical men; no satisfactory account has been given; and as there are only two, I cannot attribute it to arise from their employment. I think there are many instances of boys who became deformed from working in the night.

But, since that has been discontinued, you have not observed deformity?—Since that has been discontinued, I do not think it has occurred.

Do you think that arose from their employment in the night?—I think not; there were once at Cromford 164 boys employed in the night; they were so employed for about twenty-two years; those boys got extravagant wages, and were extremely dissipated, and many of them had seldom more than a few hours sleep.

Then did the evil that existed in that case arise more from the conduct of the boys during the day, than from any employment during the night?—I think it did; but the rooms were not so well ventilated as they are now, and they might receive some injury from that; they might be weakened from that cause.

You have paid particular attention to the ventilation of rooms?—I have.

Will you inform the Committee what you have done in that respect?—It is by the admission of a current of warm air; it is admitted into the mill, in a column of probably four feet square in general, but there are different constructions; an aperture out of this column is made into each room, that aperture is more or less as circumstances may require, and in consequence a regular flow of air goes into each room; an outlet is made at the greatest distance from this inlet, which allows the foul air to escape.

Of course your rooms are kept in a constant state of ventilation, whatever may be the state of the weather?—In a constant state of ventilation as well as warmth.

What is the general state of the heat in your mills?—About 60°. I consulted Doctor Darwin upon that, and he said 60° was the best heat.

Winter and summer?—In summer it must be higher than that; it is kept as cool as it can be in summer.

Does any part of the operation require heat?—None.

You have had the means of making a comparison between the morals of children employed in your works at Cromford, and those employed in agricultural pursuits; what

what is your opinion with respect to the comparative morality?—I think they are quite as good, in every respect, in point of morality, at the cotton mills at Cromford.

Have you any returns of the health of the people at the cotton mills at Cromford?—Upon the average of two years, there have been seven upon the sick list.

Will you state the number of persons employed in your mills at Cromford?—725 at this time altogether.

Can you state the relative ages of the persons employed?—269 between 10 and 18, of whom there are only four under 11, 22 under 12, 25 under 13, 39 under 14, 49 under 15, 58 under 16, 32 under 17, 40 under 18, making altogether 269 under 18.

How many are sick at this time?—Seven; I do not know whether there are seven now, but there have been seven on an average for the last two years upon the sick list.

Have you any account of the deaths for any number of years?—No; I have no account of their deaths at all; they live in different parishes.

Is that the average number of all that are sick out of the whole number of 727?—Yes; and they are sure to be on the sick list when they are ill; when they are ill they receive half wages, so that they are sure to be put on the sick list if they have the least complaint.

Do you consider it to be the interest of any person working by water-spinning to employ children always above ten years of age, provided he can procure them?—It would not be so well to let it be much longer, because in that particular part that requires the best hands; it requires some years to learn the business, and if they were not to go till they were twelve or thirteen, they would be leaving when they became useful. According to the statement I have made, the greatest number are at fifteen, after that the number decreases.

If a person engaged in the spinning of water-twist had the command of population, do you conceive it would be his interest to take the children generally from ten to twelve years of age, and none under?—Nine or ten; the rule at Cromford has been not to take them under ten; it is not so well to alter rules; it is always attended with inconvenience; but I should think if boys were taken at nine it would be better: I see them often running about, and in mischief.

You mean girls too?—No; they have to nurse their younger brothers and sisters, or they work at home, or they do something; but boys have nothing to do unless they go to school.

You think ten would be better for girls?—Yes; it is matter of opinion; but I should take boys a year sooner if I had a new regulation to make.

If any regulation were to be adopted by Parliament which would prevent the working of water-spinners more than eleven hours in the day, supposing them now to work twelve hours in the day, do you conceive that the quantity of twist produced would be in exact proportion to that reduction of time, the velocity of the machinery not being increased?—I should think very nearly so; I would say exactly so, but it would not be exactly so; there would be a less proportion produced, to speak nicely; perhaps it would be spinning the matter too fine: but I think it would be rather less, the machinery going the same.

The proportion for the twelve hours would be greater than for the eleven, the machinery going the same?—Yes, in practice; in theory it would be the same of course.

Will you have the goodness to explain your reason for thinking so?—Every one who has been in a cotton-mill knows there is a great loss of time in beginning and ending; I am speaking of my own mill, for I know nothing of any other person's. If I were to go into the mill at Cromford twenty minutes or a quarter of an hour before the wheels stop, I could see the hands preparing to go away. It must be the spinning that produces the quantity; and in the spinning they would be changing their shoes, taking off their aprons, and putting them on, stopping the machinery in part rather than piecing the threads. In the beginning they would be some minutes before they got to their places and set the whole of the machinery to work, so that there would be a loss of time.

Do you spin very fine threads at your works at Cromford?—Not very fine.

What is the general average?—Perhaps twenty, or five-and-twenty; very low; it is water-spinning.

Do you understand that mills are much warmer than yours where fine yarn is spun?—Yes.

Considerably warmer?—Yes, they are warmer considerably.

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Considerably warmer?—Yes, they are warmer considerably.

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Do you apprehend, from your extensive knowledge of the business, that where children under ten years of age are employed for fifteen hours in a day, with only one hour's intermission for meals, such employment would be injurious to their health?—I cannot speak to that; I do not know.

From your extensive knowledge of the business of cotton mills, do you apprehend that children could be employed more than twelve hours a day, if under ten years of age, in the mills where fine yarn is spun, and consequently where the heat is considerable?—I know nothing of that.

Is it your opinion that the inspection of cotton mills by the magistrates would be generally useful, or otherwise?—It certainly would not be so useful as it has been; there are not so many ill conducted mills as there were.

Has their inspection been of service in times that are past?—I should think it must; I have no doubt of it.

Do you apprehend it would be any material inconvenience to trade, if children under nine years of age were not to be allowed to be employed more than twelve hours a day?—I cannot speak to that; we do not employ any.

Were you acquainted with the unhealthy state of the cotton mills at Manchester previous to the introduction of Sir Robert Peel's Bill?—Very little.

You do not know the particulars of the subject?—No, very little; I know nothing of the mule business at all. I have gone frequently into the mills at Manchester as a visitor, to see them. I have been into Messrs. Philips and Lees mills, and some other of the principal mills.

Do you understand that the mills fifteen or twenty years ago were in general unhealthy?—They were not very well cleaned and ventilated, therefore they could not be healthy.

How did you find the mills of Messrs. Philips and Lees at that time?—Very well, with respect to cleanliness and ventilation.

And with respect to the apparent health of the people?—I did not observe any appearance of ill health.

Do you conceive that it would be rather an invidious task for magistrates to inspect the mills of their neighbours and friends?—I think it has been considered rather in that light by the magistrates; they thought it would be so considered.

Do you believe that is one reason why the practice has been discontinued?—With respect to the mills at Cromford I think not.

Generally speaking?—I cannot speak to that.

You stated that many evils arose from working in the night, and that practice is in a great measure discontinued; the Committee wish to know, if trade was to revive, and to be equal to what it has ever been known, what security there is that the owners of the factory would not work again in the night?—I can hardly think it would be to the interest of any manufacturer, at any time, to work in the night.

Was it difficult to keep the machinery in good order when working in the night?—It was impossible to keep it clean. When two sets of hand come to the same machine, they each will put the cleaning of it to the other, from which circumstance it is never clean.

A machine can never be kept in good order working day and night?—I think not.

And if not, it never can be profitable to the owners?—I think not.

That practice of working in the night now continues to a certain degree?—Not to my knowledge.

Supposing a law was made to prevent working all night in factories, what is your opinion of the operation of such a law?—It would have no effect at all, because there are no workers in the night. I should think no persons would work in the night; and if a law was passed to prevent a person working in the night, which he would not wish to do, I think it would be useless.

Would not the inspection of factories be an invidious office, particularly where the magistrates themselves have generally been engaged in the cotton manufactory, or have connections engaged in it?—Certainly.

If the inspection of magistrates was not made necessary by the condition of factories, would there be a sufficient reason for subjecting the proprietors of factories to the inconvenience of their visits?—Certainly not.

Have your hours always been what they now are, thirteen hours a day, with one hour for dinner?—About twelve or fifteen years ago they were carried on for a piece of a year, for twelve hours only, including an hour for dinner.

Owing

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Do you apprehend, from your extensive knowledge of the business, that where children under ten years of age are employed for fifteen hours in a day, with only one hour's intermission for meals, such employment would be injurious to their health?—I cannot speak to that; I do not know.

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Owing

Owing to bad trade?—Yes.

How long were they continued in that way?—Only a part of a year.

You did not perceive any benefit resulting from the shorter hours to the children which induced you to continue the shorter hours?—No, not any.

What were your motives for fixing upon twelve hours, rather than thirteen or fourteen, for the working-hours of your children originally?—I cannot speak to that; those were the original hours when I went to Cromford.

Are you in the habit of making up for lost time in your mills?—The fractions of a quarter of a day; not more.

In what way do you make that up?—By working, probably, half an hour a day till it is made up; the whole amount of hours made up in a year in that way is about twelve.

And when the works are stopped more than a quarter of a day the proprietor gives up the lost time, and does not make it up?—When the works are stopped a quarter of a day or more the wages are deducted in proportion to the time.

You have said, that working children younger than ten, would not be beneficial to the proprietors at Cromford; are there any peculiar circumstances at Cromford that would make you confine that answer to Cromford?—Not to Cromford in particular; but to all water-spinning, I should think, it would be the same.

If other hands could be got?—Yes, if they could be got; where there were plenty of hands I should not employ them till nine or ten by choice, but where there is a scarcity of hands young hands will be employed.

Have you experienced any bad effect in the families at Cromford from confining the age of admision to ten?—I should think the families cannot be so well off as if they were taken at an earlier age; but I know of no inconveniences.

What would be the effect at Cromford of any legislative provision by which it was necessary for the work-people to go out of the works to take their breakfast, or refreshment of an afternoon?—It would be extremely inconvenient; I have had the distance of their residences measured from the mills. 373 out of the whole 725 reside at Cromford; the rest, 352, reside in different townships; the Cromford people, having measured it from the mills to the average of the village, live 970 yards; the others are at the distance of a mile and a quarter on the average. If those were set at liberty three times in the day instead of once, they could not do with less than fifty minutes at each time; three quarters of an hour, upon experiment, have been found too little for their going to dinner; fifty minutes are found to be the least time that they can possibly go to dinner in and come back.

Would it be particularly severe upon the people in bad weather?—It would be worse to the people than to the mill-owners. In bad weather, when it rains or snows, they would get wet oftener, having to go that distance three times a day instead of one.

Would it not, in your opinion, be beneficial to the health and spirits of the children, if they were allowed to go out of the mill for a short season in fine weather, at the breakfast time, and in the afternoon, although they did not go home to their lodgings?—For so short a space of time, I should think it would not be much advantage to them, in any respect, or desirable; two-thirds of these 725 are working in effect by the piece: if the doors were thrown open to them very few would go out.

Though you have stated that the children in cotton factories have been in general healthy, they may be possibly subject to particular complaints, against which you find it necessary to guard; can you state any such?—I do not believe there are any.

Are swelled throats more common among your factory children, than other children at Cromford?—No, they are very common in the county of Derby; they are called Derby necks or Derby throats.

You have said that you spin no thread that requires a heat of more than 60 degrees, and you explained to the Committee your modes of ventilation, have you thermometers in all the rooms?—No.

Have you any particular regulations which secure the rooms from a greater heat than is necessary?—The person who has the particular inspection of the rooms has a thermometer, which he uses when the rooms are complained of as being too cold; never for being too hot.

In your apparatus for heating the rooms, have you contrivances to prevent their ever being too hot?—There are no contrivances, but making less fires, or admitting less warm air; something of that kind is in use in almost all well regulated manufactories.

R. Arkwright,
Esq.

Is the air heated by stoves or by steam cylinders?—In one house by stoves, and in one house by heating a flue, in the manner in which it is done in hot-houses.

Have you found it necessary to attend to the construction of the stove, to prevent the air contracting a bad smell?—I have perceived in stoves that have been heated too hot that there has been a smell of the iron, but never in those that I am speaking of; they are never heated to that degree.

It is necessary, probably, to have the stoves of sufficient size that it never should be necessary to have too intense a heat?—It is better so.

Would not a mischief accrue if the stoves were so small that, to procure the necessary quantity of hot air, the stove must be violently heated?—I have understood that it is not so wholesome; the air is injured by a great heat.

Have not great improvements been made in the methods of heating factories of late years?—I think a great deal of attention of late years has been paid to the manufactories; improvements are constantly making.

You have mentioned improvements which you have made in the ventilation of your mills; have not you experienced very good effects from those improvements?—They have been made a long time, and they are gradually making, but I cannot say that I have perceived any effects; the work-people have been in good health a long time, and I do not know when those effects began to operate.

Is your cotton cleaned by the hand, or by the machine?—By a machine.

Is the dust from the cleaning of the cotton ever found troublesome to the persons who work the machine?—No, there is no more dust where that cotton is cleaned than there is in this room.

Are there particular contrivances to prevent dust in the mode in which you clean your cotton?—Yes.

Have you reason to think that peculiar to yourself, or is it known to the other factories pretty generally?—It is known to a great many, and the same principle nearly is applied by others.

Were they introduced in your time, or previously?—Great improvements have been made within these very few years in that respect.

And very good effects have followed?—Very good; and I should think every body will adopt something to get rid of their dust.

Then you esteem it to be very practicable?—Yes, very practicable; it is to be done in many ways, and is now done in most well regulated factories.

Are there any Sunday-schools at Cromford?—Yes, there are several schools; at Cromford there are two.

Do many of the factory children attend them?—There are 225 attend at this time at all the schools; of these 131 at Cromford.

Is not that nearly all you stated to be of the ages between ten and eighteen?—Yes, but there may be some above eighteen, who attend to learn to write.

Do you use any particular means to procure their attendance?—No, I do not know of any particular means.

Is that a school at which they are taught gratis?—I pay for the school.

And they are taught gratis?—Yes.

You spoke of a very beneficial regulation in requiring children to read before their admission into the factory; could you specify what degree of reading; for instance, their ability to read a verse in the Scriptures off?—The person appointed to that office would take them if they could read at all.

That is, read very small words without spelling them?—Any small words: And in general the parents are so anxious to get their children to work, that the man appointed to hear them read will sometimes examine them very little, and probably they can scarcely read; that is a matter that has been obliged to be attended to sometimes, to make them adhere to the rules.

You mentioned the allowance of half wages to sick children during their illness; has that always been the regulation at Cromford?—Not always.

How long has it been introduced?—I cannot speak to years; it is a long time since.

You no doubt have observed that it has given great satisfaction to the children, and their parents?—Of course.

Do you think that the dust in those mills, where no precaution is taken against it, is productive of any serious inconvenience?—Great inconvenience, certainly, and it is very disagreeable.

To the children employed?—There are very few children employed in that operation; none, I should think. I have not seen any. I have not seen any of the ill regulated mills.

Have

Have you any reason to believe that the hours of work are fewer in those mills of which you have been speaking, where none of those precautions are taken?—I should think not.

*R. Arkwright,
Esq.*

[*Mr. William Taylor delivered in the following Paper, which was read :*]

“ AT the annual General Session of the Peace held at the new Court House in Preston, in and for the County Palatine of Lancaster, the 29th day of June, in the 55th year of King George the Third's Reign,

Before *William Robert Hay*, Clerk, Chairman.

<i>Richard Atkinson,</i>	}	Esquires.	<i>Wilm^m Hinde,</i>	}	Clerks.
<i>John Bradshaw,</i>			<i>George Williams,</i>		
<i>W^m David Evans,</i>			<i>John Pedder,</i>		
<i>James Frazer,</i>			<i>James Penny,</i>		
<i>Samuel Horrocks,</i>			and		
<i>Joshua Hinde.</i>			<i>Jas Stainbank,</i>		
			Justices of the Peace, &c.		

“ A Bill now depending in Parliament, to amend an Act passed in the Forty-second year of His present Majesty's Reign, for the preservation of the health and morals of apprentices employed in cotton and other mills, being read ;

“ Resolved, That (except as to the Regulations respecting the working in the night) the same will be inefficient, and incapable of producing any salutary effect.

“ **GORST.**”

Thomas Oldmeadow Gill, Esquire, called in, and examined.

WHERE do you reside?—In the neighbourhood of Manchester.

How long have you resided there?—Upwards of fourteen years.

What is your occupation?—That of a merchant.

A merchant in what line?—In manufactured goods.

Do you mean in the exportation of the manufactures of Manchester?—I have no establishment in Manchester for the purposes of trade?—I have a warehouse in London.

But you trade in Manchester goods?—Yes.

Are you one of the general visitors of the Sunday schools of the Established Church in Manchester?—I am.

Have you been long so employed?—From the time, I believe, when general visitors were first appointed, which I believe was ten years ago.

Have you been constant in your attendance on those schools?—Pretty generally.

What observations have you made in the course of those visits?—I have thought that those employed in cotton factories appear the most unhealthy.

How did you ascertain whether those children who appeared to you to be unhealthy were workers in factories, or not?—A short time since, on the 19th of May, several gentlemen went through the greater part of the Sunday schools in Manchester and Salford ; I visited seven myself, with two other gentlemen. The number of scholars we found present were 1381 ; out of those 255 appeared very young—of those we did not ask any questions ; 133 appeared to us to look very sickly, which induced us to ask what was their employment in the week-day, and 95 out of that 133 answered that they worked in factories, leaving 38 only in all other employments ; and it is to be observed, that not one-third of the Sunday school scholars work in factories.

How long have you ascertained the latter fact?—A few weeks since an account was taken of the scholars in all the schools, at which time 11,063 were present, and they were asked their different employments ; and 3,317 out of that number only answered that they worked in factories.

Are you connected with the Manchester Infirmary?—I am, as one of the Deputy Treasurers.

In consequence of your connexion with the Infirmary, have you had any opportunities of consulting medical men respecting the effect produced on young children by working in factories?—I have ; particularly two very respectable ones, whose opinion is, that working young children so many hours in cotton factories checks their growth, promotes scrofula, produces debility, and tends to premature death.

*Thomas Oldmeadow
Gill, Esq.*

my answer is, that the expence of the education, as well the building of the school as the subsequent annual and other expenses attending it, are dependent upon subscriptions, to which you and your son have lately added your names. The proceeds, however, of these subscriptions have proved by a great deal too little to provide for the expenses which have been incurred; it was on this account that I took the liberty of making application to you and to your son, and I only regret that your restriction has prevented me from making a public acknowledgement for the liberality with which my application was treated. From the interest and active part which I see you now taking to render a service to the children of the poor, you will excuse me if I again press on your recollection the protection of the institutions to which you have so liberally subscribed; and here I must also bear testimony to the friendly support which this institution [the R. C. Sunday and day-school] has received from the numerous Protestant heads of the manufactories in this neighbourhood, at the head of whom I find Mr. Horrocks, the member for this place, and a long list of other respectable names.

" 7th.—With regard to the seventh question, it is my opinion, that a high degree of credit is due to the owners of the factories for their attention to the particulars therein mentioned, and amongst ourselves the best endeavours are used to assist them in those ends by collections, for the purpose of providing clothes for the children; and I apprehend that a strict adherence to any one of these branches must almost inevitably secure the other three. As, however, this is a considerable object, the ends of which can hardly be perfected even by extraordinary liberality amongst so few, the assistance of any out of the many opulent will be a grateful consideration.

" 8th.—With regard to their morals, I must say, that in consequence of the very particular attention which is always paid to this particular, both by the clergy and many others by whom we are assisted, we can bear testimony to the good conduct and morality of by far the greater part of such children, and by vigilance and otherwise the evils resulting from an indiscriminate association are in a great measure done away with.

" I subjoin and enclose a statement of the school under the charge of the Catholic clergy, a copy of which Mr. Horrocks has taken with him to London.

" With great respect,

" I am, Sir,

" Your most obedient Servant,

" Jos. Dunn."

George Benfell Strutt Esquire called in, and examined.

ARE you one of the proprietors of the cotton works at Belper and Milford in Derbyshire, of which a written account was delivered here by Mr. Hollins?—Yes, I am. *G. Benfell Strutt, Esq.*

The hours of labour at your works are stated in that return to be twelve?—They are.

Have you found the children tired after working those hours?—I have not found them so; I think they are not.

Have you had any medical gentlemen at your works to examine your plan of warming and ventilating them, with a view of introducing that plan into the infirmaries or hospitals in your neighbourhood?—Some years ago a Doctor Storer from Nottingham came to Belper to examine the state of the health of the people employed in the mills, in order to judge how far it would be advisable to adopt the same mode of warming and ventilating the infirmary at Nottingham.

What were Doctor Storer's observations respecting the health of the people?—He expressed himself so satisfied with the health of the children, that he recommended the same means to be employed at the infirmary at Nottingham; and, after some short period, they requested us to send a man over to erect such stoves.

How are your works warmed and ventilated?—They are warmed by means of a large quantity of air passing over an extensive surface of sheet-iron, in the form of a stone or cockle, and then it is conducted up funnels or chimneys into the rooms, and from

G. Benfell Strutt, Esq. thence conveyed, at the greatest possible distance, out of the rooms. There are outlets, as well as inlets, and those are at the greatest possible distance from the inlets.

You have found of course that your rooms are well aired and warmed, whatever may be the state of the weather?—Yes; in hot weather we cannot keep them so cool as we could wish.

Is there much dust in your spinning-rooms?—Very little in the spinning-rooms.

Is there more in your carding-rooms?—Yes, something more, especially at what we call the breaking-cards; the first carding is more dusty than the second carding; we card twice.

Is there much dust in the room where your scutching machine is at work?—None at all.

Which room do you consider the most free from dust?—I consider the scutching room to be most free from dust.

Does the nature of the machine used for scutching at your works prevent the dust from flying about the room?—Perfectly.

Have you understood from proprietors of cotton mills, or do you know from your own experience, that the room in which the scutching machine is worked is in general the most dusty and unpleasant place in the works?—I have understood from the proprietors of works, and I know from my own experience, that formerly it was the most dusty of all the rooms: it was excessively dusty.

Will you explain how your machine produces an effect so different from most others?—The difference consists in drawing the air of the room through the machine by means of a fan, when it is conducted by a chimney or funnel to the outsides of the building: but as the idea originated with Mr. Arkwright, and as I expected to be asked some questions about this machine, and as he made the first machine upon this principle, I have requested him to explain it, and have received this Paper from him.

[It was delivered in, and read as follows:]

“ The scutching machine most in use is a machine for cleaning cotton from the seeds and other impurities, and is in principle similar to the thrashing machine. The cotton passes through a pair of rollers, and is struck by bars of iron or steel called beaters, which revolve with great velocity, striking the cotton with considerable force over a number of parallel bars so placed as to allow the seeds to fall through, the current of air passing over the bars, and carrying the cotton fly and dust forward into an apartment called the cotton chamber. It is necessary this air should be got rid of, and it is effected by a large opening, in which is placed a fine wire grating; the air either returns into the room or is suffered to escape externally. But even by this latter mode considerable inconvenience arises to the persons employed, from the dust and fly, as it is impossible to close up every aperture and crevice so as to prevent some portion of it from coming into the working-room. This inconvenience is now completely remedied, by the adoption of a very simple plan: a fan is placed on the outside of the wire-grating before-mentioned, which by a quick rotary motion rarefies or exhausts in some degree the cotton-chamber; consequently the air in the working-room presses in at every opening to restore the equilibrium, carrying with it all the fly and dust created by the working of the scutcher.

“ 10th June 1816.

“ *Richard Arkwright.*”

Have you seen this improved scutching machine at work at Cromford?—I have. Mr. Arkwright has showed it to my brother, and myself and my two sons; and I believe any respectable person who wishes to see it may.

And

And the room is perfectly free from dust?—Perfectly free.

*G. Benfell Strutt,
Esq.*

Have you seen this machine applied to assist the purposes of ventilation?—I did, about nine months ago, at Cromford.

What is the effect of it in cleaning a carding-room from dust?—There is so little dust in the carding-room, I could not judge in what degree it would clear it, but the air being drawn out of the room by this machine, if there was any dust it must pass off with that air; it acts so as to take away whatever little dust there is in the room with the air; that must be the effect of it.

Does Mr. Arkwright make any secret of this scutching machine?—Not that I know of: I believe not.

He is rather anxious to communicate the improvement?—From what I have heard him say, I think he is rather anxious to communicate it to any respectable person who applies for that purpose.

Have you known of any cases of scrofula at your works?—We have some scrofulous children, but I think but few; there are some scrofulous families in the neighbourhood, and have been from the time I first went to Belper, when there were very few persons employed in cotton mills. It does prevail in some degree, but not more than in any other place that I know of.

Have you any mule-spinning?—We have not; we had some years ago, not at Belper but at Derby.

Is the employment of persons employed in mule-spinning different from that of persons employed in water-twist mills?—It is very different.

Nearly as different as mule-spinning is from weaving?—Yes, I think it is, in the spinning part.

Mr. John Busb called in, and examined.

WHERE do you reside?—At Bradford in Wiltshire.

*Mr.
John Busb.*

What is your profession?—I am a solicitor.

What is the paper you produce?—It is an abstract Statement of the number of persons employed in the principal woollen manufactories in Wilts, and part of Somerset; distinguishing those above eighteen, above ten, and under ten; those who can read, those who can write, and those who can neither read or write; the hours per day, the labour, the hours for meals, and the number of persons ill at this time.

[It was delivered in, and read as follows:]

Do you know the hours of working in this factory?—I believe them to be from six to twelve, and from one to seven.

Do you know how long that has been the practice?—I have no doubt for a number of years.

Have you any other report?—I have an account from Messrs. W. G. and J. Strutt, of Belper and Millford.

Do you know the hand-writing?—It was delivered to me by Mr. Strutt.

[It was delivered in, and read as follows:]

“A REPORT on the State of the Cotton Works at Belper and Millford, in the parish of Duffield and county of Derby, as respects the health, instruction, and morals of the persons employed therein; from January 1st, 1815, to January 1st, 1816.

Number of Persons employed, of every description - - - 1,494; all English.

	Time lost from Sickness only.	Number who have made proficiency in reading.	Unable to read.	
Of these under the age of 10 years, - 100	50 days, equal to 6 hours each - - }	92	8	
Above the age of 10, and under 18, 612	619 days, equal to 12½ hours each }	604	8	{ 4 of these deficient in intellect.

“Average weekly earnings of each child under ten years old, 2s. 6d. The average size of the rooms is from 100 to 150 feet long, 30 feet wide, and 9 feet high, and the number of cubic feet of space for each person is 1,104.

“Pure air (warmed when necessary) is transmitted into every room constantly, at the rate of upwards of 100 gallons per minute for each person.

“No apprentices (except as mechanics) are employed, and they reside with their parents, and receive weekly wages.

“The working hours are twelve, six before dinner (which is from twelve to one), and six after; each of which six hours includes the time for breakfast and tea. This has been the invariable practice at the original silk mill in Derby, in this neighbourhood, for more than a hundred years.

“In complexion and general appearance, the persons employed here are not at all inferior to those whose occupations are in the open air, being without the paleness which generally accompanies sedentary employment, better fed, better clothed, and accustomed to habits of much greater regularity than persons whose trades do not require attention at regular and stated periods; their health is more vigorous; and in consequence of the good condition of their houses, and the invariable practice of frequently white-washing them, infectious diseases very rarely occur.

“The number of children instructed at day schools at the expense of the proprietors - - - - - 64

“The number of children instructed at Sunday schools at the expense of the proprietors - - - - - 650

“The number of children instructed at day schools by their parents - - - 700

“The number of children who attend other Sunday schools - - - 700

“The proprietors of the works are now erecting Lancasterian schools for 500, which are nearly completed; after the establishment of which, it is their intention not to employ children that are unable to read.

“It is well known in this neighbourhood, that before the establishment of these works the inhabitants were notorious for vice and immorality, and many of the children were maintained by begging; now their industry, decorous behaviour, attendance on public worship, and general good conduct, compared with the neighbouring villages, where no manufactures are established, is very conspicuous.

“JEDIDIAH STRUTT maketh oath, That he is a principal superintendent of the above Works; that he has carefully examined the above Schedule or Statement, and that to the best of his knowledge and belief it is a faithful and correct report and statement of the matters and things therein contained and set forth.

“Jedidiah Strutt.”

“Sworn this 3d day of May 1816, before me,

“R. F. Forester, One of His Majesty's Justices of the Peace in and for the county of Derby.”

Mr.
Henry Hollins.