

Meeting of Superintendents, National Lead Company, Chicago, Dec 7,
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ADDRESS OF DR. ALICE HAMILTON.

I appreciate very much the opportunity of talking to the men engaged in the White Lead industry in this country, and am grateful to Mr. Tolman for arranging that I should talk to you. For the last nine months I have been visiting white lead factories, and though naturally I do not know much about the technical side of the business, I am very much interested in the hygiene of the trade.

This last summer I went to England, and over on to the Continent to try to learn what I could of the conditions there. I had no difficulty in England in getting access to the factories. Perhaps you, yourselves, have experienced the same difficulties that I met on the Continent. In France I could not get admission anywhere at all, and in Germany I only gained admission to two places. One of these was a lead melting establishment, so that I only saw one White Lead factory in Germany. They are very jealous of their trade secrets in Germany and France.

I made the mistake of trying to get my introductions through the American Consuls. It seems the American Consuls and a class of men are very much disliked and the objects of suspicion to the Manufacturing Class, so that it was only through the personal influence of an acquaintance that I succeeded in gaining admission to one place in Cologne.

I saw a good many in England, and saw a very good one in Brussels, and in this way I was able to study the differ-

of the effort to do away with the dangers inherent in the work and here Cookson's lead the way. In fact, the Home Office rules of 1893 were modelled largely on the practice obtaining then in Cookson's plants. That seems to me a very proud record for a commercial house.

The study of the past 30 years has shown that lead enters the body through inhalation and swallowing, not through the skin. The English lay more stress on inhalation than the Germans, claiming that lead is absorbed by the blood vessels of the lungs, while the Germans think that that what is breathed into the mouth is swallowed.

Of course the methods of protection are founded upon these facts and resolve themselves into suppressing the dust and seeing to it that the workman is free from white lead when he eats his lunch and when he goes home and that he does not carry it into his mouth while at work by chewing tobacco.

The abolition of dust I have already described. The care of the workman's person consists in supplying, washing and mending working clothes, supplying head-covering and sometimes shoes. At Leyendecker's all the men wear wooden shoes while at work, which is a splendid protection against the damp cold floors.

Everywhere the men are provided with proper washing facilities and, not only that, but they must, by law, be given sufficient time to wash up, and all of those who are engaged in the dustier processes must bathe every day. There is a bathing record kept, and it is a case of no bath, no pay. A man must show his bath receipts, so to speak, before he gets his wages. In the dustier processes, he must bathe.

once a week. Washing arrangements there, as I should say, were not as luxurious as they are here. On the other hand they are very much more carefully planned. The Englishman does not waste his money on luxuries, but the Home Office sees to it that he gives the employees what they need. So you will not find as beautiful sanitary equipment there as you may find in this country.

The men have usually individual towels, numbered with each man's number. There are long, porcelain lined sinks with no stoppers, so that a man must wash in clean running water. Usually big cans of soft hand soap are provided. There are sprays for the head attached over the sink, and long nail brushes are fastened into the wall just above the basins. Numbering the towels prevents their being stolen, and the arrangements for nail-brushes and soft soap provide against stealing. The lunch rooms are not at all luxurious, but there is always provision for heating food. Europeans insist that it is very important in white lead factories that the men should not work on an empty stomach, for nothing so favors lead-poisoning as that, and there is no better safeguard against it than the presence of food in the stomach. So that we find always a half hour given in the morning for breakfast. I think that you will find that your foreign born workmen, and so many of them are foreign born, need that pause for breakfast, for they are not accustomed to the hearty breakfast that fits the American workman to keep at work till noon. Another thing that struck me over there was the strict

prohibition of tobacco chewing. Whenever I have been in this country in white lead or red lead, or dry color establishments, or paint factories, I have asked the foreman whether he encouraged tobacco chewing among his men; and I think there has hardly been more than one or two exceptions to an affirmative answer. Many a time the foreman says that he teaches his men to use it. I find also that it is the opinion held by practical painters that the constant expectation keeps the mouth cleared of lead dust. Tobacco chewing is forbidden in Europe and in England because they say that the plug of tobacco is carried in a man's dusty clothes, his working clothes, and that it is taken out with lead smeared fingers and passes into his mouth often through a smeared mustache. It is really so strictly forbidden that I was impressed by it. I was in one lead establishment with an inspector from the Home Office, and he wanted to test a certain exhaust and asked for a match. The foreman had none, but one of the workmen had. The inspector told me later that as he was on a visit of courtesy he did not follow up the match episode. I asked him what he meant, and he said any workman who had a match about him no doubt had some tobacco too, and that he always investigated such incidents.

Medical inspection is required by law over there. I do not know when I have been more gratified by anything than by the information I received from Mr. Cornish that the National Lead Company intends to have medical inspection in all of its plants. I wish you could see your way to carry it one step further. The next logical step, as it seems to me, is

that your medical inspector shall be told to weed out the men who are unduly susceptible to lead poison. You know there are a certain number of men who cannot stand lead. The susceptibility of individuals varies very much. Also I wish that you would try to establish the rule that a man once really leaded shall not return to a dangerous part of the work. That is a universal rule over on the other side. Here, I find, in a great many places, that the man drops out, and goes home or to a hospital, and when he has recovered he has not sense enough to quit, but goes back to exactly the same sort of work.

It may be asked what is the result of all this elaborate regulation in England and Europe. I have been told by American manufacturers that there is actually less lead-poisoning here than in Europe. Well, it is possible to answer that quite definitely. In Cookson's plant in Newcastle where 162 men are brought in contact with white lead, the most rigid weekly medical examination did not reveal one case in the year 1909 to 1910. In Locke Lancaster's place there was not one case among 90 men for the five years between 1903 and 1908, there was one in 1909.

Let us look at our factories now, I can give partial statistics of six places which manufacture white lead, and when I say partial I mean that in none of these factories is the whole truth about the men known. Three of them examine all of the men employed in handling lead, but do not follow up those who quit work - the English and German laws require this to be done - a third factory has a physician

see only those men who complain or whom the foreman suspects of illness, the other two have no medical inspection and the only way I have been able to find any cases has been through hospital records, which means that I have only the severe cases of plumbism occurring in men without families.

These are the statistics:

In No. 1 medical examination showed 1 man in 3 to be at the time suffering from plumbism.

In No. 2 one man in 9.

In No. 3 28% of all employees have been leaded.

In No. 4 where medical inspection is only on complaint, 25 cases occurred among about 200 men, or 1 in 8.

The two factories which have no medical inspection are sending to the Cook County Hospital three cases and four cases respectively a month. This would mean 36 cases for one during the year and 48 for the other, but we know that not one-half of the leaded men go to the County Hospital and that the actual figures would be much larger.

This means that all the factories in Illinois and St. Louis are so dangerous to their workmen that they would be closed by law in any European country. Please do not think I am exaggerating, for I am not. My figures will bear a very close scrutiny.

Evidently the protection of the men in American factories is very far from satisfactory even in the very best and cleanest factories, where machinery is used to the utmost extent.

and where there are good wash rooms and good lunch rooms. This is because of the difference in the process over here. Dry stripping the stacks, dry separating and handling of the dry returns, emptying the drying pan, barrel packing and heading up of the barrels and in some cases filling of the chasers, -all these are dusty and dangerous processes. Moreover we do not keep down the dust as they do over there. We never keep the floors flushed. Dry sweeping is the rule and wooden floors. We have not as good means of keeping the men & persons clean. Overalls are not provided and washed for the men. There is no compulsion as to washing. The very best wash-room will fail unless the men are obliged to use it.

Of course in many ways it is much easier to manage men of the same nationality as their foreman, who speak the same language. On the other hand I was told that the Italian help employed in one English factory were more docile than the English men, who are more sensitive about their individual rights and do not like to be bossed at all, as far as personal habits go. I think it would be possible to make our men as amenable to discipline in the matter of cleanliness as in the matter of other factory rules. At any rate it seems to me that it is a matter of factory discipline and that perhaps a factory may be considered to have failed in its discipline if it cannot force its men to keep clean.

I should suggest, if I were to be allowed to suggest anything, that the American factories in the first place, should have cement floors kept wet; second, if the present methods cannot be abandoned, if we must have dusty work, then

make the men employed in the dusty work use respirators. I do not mean only the ordinary rubber respirators with sponges in them. I did not see one of those abroad. What they use are plain muslin bags with two tapes fastened to the edge, which slips over the nose and mouth, the tapes tying behind the head. They do not cost anything and the men do not object to them, as they are easy to breathe through.

Overalls and caps should be provided for the men engaged in any dusty process, but the effort should be made to have as few dusty processes as possible.

When I was down at St. Louis just recently, and visited the Collier Works, Mr. Worrall called my attention to the long handled shovels used in the drying room, and I noticed that the men did not throw the white lead, as I have seen it done usually, into the trucks, but put the long handled shovel down until it reached the truck, and then turned it over

I wish very much that the change could be made of melting the dry returns and not using them to set the stacks. Perhaps that is not practical. Perhaps none of these things are. They are simply the suggestions of a layman.

If the barrel packing could be done as carefully and as neatly as it was at the old Shipman plant, I think it would be an excellent thing. I think the man who did that there ought to be sent around as an expert to teach the other factories how the barrelling should be done. I am not familiar enough with the process of packing barrels to know why he did it without dust and why everybody else

does it with dust.

I think it is very good of you to let a layman talk to you about something she only partially understands. It may be very many things I have suggested are not applicable to American industry, but if they are I hope the National Lead Company will consider adopting them, just as Cookson's in England led the way for the reform in the hygiene of the white lead trade, so that when the laws in 1883 were passed they were practically Cookson's rules, only not quite so strict; so I think the National Lead Company could do the same thing in this country. We are told that the advantage in great industrial combinations such as yours represents, is that there can be concerted action; there can be brought about improved methods, and the improvements can be known by others, and followed, and I hope very much that through the action of the National Lead Company the hygiene of the white lead trade will be greatly improved. I am very much obliged to you. (Applause).