

4. Do you find that anything which the Health authorities suggest the factories are quite willing to adopt in connection with mitigating any nuisance which may arise in connection with waste water from the factories?—As a general rule, we find no difficulty in getting the dairy factories to carry out suggestions we may make in connection with drainage or sanitary arrangements. They seem only too pleased to carry out any suggestions.

5. *Mr. Nathan.*] Before a cheese-factory can start work it has to apply for a certificate from your office?—Yes.

6. And when the officers inspect a factory it is usual for them to see that proper provisions are made for drainage?—Yes, that is one of the main points.

7. The reason that we are trying to get this Bill through for dairy factories is the fact that at times there are some people who threaten the factories with an injunction, and may stop the industry?—Yes.

8. Do you ever find the dairy factories averse to carrying out any suggestions of the Department for the proper drainage of the factories?—No, I cannot say we have.

9. You have found them at all times amenable to reason in that respect?—Yes, that is so.

10. And has your Department at any time had any complaint from settlers that the drainage from a butter-factory is doing the stock any harm?—No. We have had complaints from people who objected to the dairy-factory drainage passing their dwelling, but that was probably due to the fact that the drain was not properly looked after.

11. And provided the dairy factory puts in a sump of proper proportions and then runs the effluent over it there should be no difficulty?—That would intercept the great bulk of the solids. I should just like to mention this point, that I think in regard to this Bill the definition of “waste products” is a little too wide. I think if it went through in its present form and became law it might be a great disadvantage to some of the dairy companies.

12. *The Chairman.*] Will you explain?—Clause 2 reads, “‘Waste products’ means the waste products of any butter-factory, cheese-factory, flax-mill, or sawmill, and includes refuse and chemicals.” That is too wide, to my way of thinking. I do not think that refuse should be allowed to pass into any stream if there are any means by which it could be stopped.

13. Well, the presence of that word in the interpretation does not mean that refuse should be allowed to pass; it merely means that this Bill deals with refuse?—Yes, I follow you.

14. It does not mean anything else than the items that are designated there. If I have a factory dealing with sheep-skins, or something like that, the Bill does not touch that?—No.

15. It touches only what are mentioned in the Bill?—Yes, I see.

16. Now, we have had in evidence, Mr. Cuddie, what happens at a factory which is unfortunately distant some eight miles or thereabouts, following the only method by which they can get their effluent or the washings of the factory to the nearest stream?—Yes.

17. And the factory people admitted that a stink arose from the washings that are carried along this drain?—Yes.

18. Well, we need not dwell upon the importance of dairy factories, but we want some means by which that cause of complaint can be got over either chemically or mechanically or in some other way. In the course of your duties those things have come before you?—They have frequently.

19. Well, we want help from you as the head of the Dairy Department?—Well, as a general rule, the drainage from dairy factories is discharged into a running stream where it is said to do no harm at all, and we always recommend that to be done where it is possible; but where there is no such outlet it is a very difficult matter to deal with dairy-factory drainage. It becomes very foul and stagnates. The only way to modify it seems to be by filtration, and a very good plan is to build two tanks, 10 ft. long, 6 ft. wide, and 4 ft. deep, fill the tanks with coke, and place the bottom of one over the top of the other, and allow the drainage to filter through. I believe that is a very effective method. That coke can be removed when it blocks up, and can be burned. A fresh supply of coke is put into the tanks, and that will run for a fairly long time with a moderate-sized factory.

20. In what factory is that plan carried out to the best advantage, in your opinion?—We have not been successful in inducing them to adopt it, although we have been recommending it; but it is unusual for factories to have much trouble with the drainage.

21. *Mr. Nathan.*] We adopt that method to a larger extent at Bunnythorpe. We have nine concrete tanks there, and they are all filled with coke?—I did not know that.

22. *The Chairman.*] And you think that by that means, Mr. Cuddie, all cause of complaint, even in the case of a factory eight miles distant from a stream, would cease?—I think it would be greatly reduced. I do not think you are going to get rid of the complaint entirely. There is such a large body of water to handle from a dairy factory that it is difficult to treat it satisfactorily and purify it so that it would not give rise to any complaint.

23. Do you know the proprietary factory at Featherston?—Yes.

24. I was speaking to the manager, and he described his practice to be two open drains from the factory half a mile long, discharging into a stream that passed through Featherston. He uses one of the two drains for a while only. As soon as it begins to give the usual indications he then turns the effluent into the other drain; and, although that is close to the Town of Featherston, as you know, there have been no complaints?—No. I have been to Featherston and seen the place, and there seems to be no trouble in connection with that system. During my visit to Denmark some years ago I came across a very good system to get rid of the drainage. The sewerage was run on to a piece of land about 6 acres in area, but the situation of the factory, of course, happened to be suitable. The land sloped right away from the dairy factory. The drainage was carried first of all into a tank to settle or get rid of the solids as much as possible, and the overflow ran into a channel at the head of this piece of land. Down through the centre