NECESSITY FOR A STANDARD OF CLEANLINESS IN ALL MILKING COMPETITIONS AT AGRICULTURAL SHOWS.

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(MEMBER.)

THE extent to which cleanliness is insisted upon by judges and practised by competitors at the leading agricultural shows affords a good illustration of the progress made in this country towards providing clean milk for the public. Competitors would naturally use every endeavour to favourably impress the judges under such conditions, and one would naturally expect that those who are chosen to adjudicate in such competitions would insist upon—(1) Cleansing of the teats; (2) The wearing of clean linen overalls, &c., by competitors; (3) The cleansing of the hands; (4) The rejection of the first flow of milk.

Last year the writer attended the daily milking competitions at one of the leading agricultural shows in the country with the view of ascertaining the conditions obtaining at such competitions.

The first day was devoted to competitions for women over eighteen years of age. Even the idealist or hygienist might be forgiven for overlooking some faults in the methods of such charming competitors as were on view on that occasion. They certainly looked dainty enough; this naturally intensified the unfavourable impression made by the cows owing to their ungroomed condition. With one exception the maids carried clean damp cloths for cleansing the cows' teats, but their ideas of bacterial cleanliness were certainly primitive. Only one rejected the first flow of milk. The others had evidently been brought up on strictly economical principles.

After starting to milk, one maid coaxed the cow by patting her ungroomed flanks with her left hand, thus innoculating the milk with *bacillus coli*, which had there been preserved in dry culture from time immemorial.

Another fair maid found that the cow's droppings soiled her pail, so the offending particles were first removed with the damp cloth from the

outside of the pail and then from the inner surface, and finally her hands were further cleansed. However, by this time the cloth was somewhat greenish in colour.

Each competitor had to milk two cows. The calculation of the number of bacilli per cc. present in the milk from the last cow of a herd milked under such conditions would require the use of logarithms.

The competition on the last day of the show was open to lads and lassies under eighteen years of age. An opportunity was thus afforded of judging the standard of cleanliness of the rising generation of milkers and of the progress made through the efforts of rural sanitary authorities.

Some of the maids wore linen aprons or pinafores, and some provided themselves with clean damp cloths, but the lads scorned such paraphernalia. Each competitor had a stool, but some of these were cleaner than others and *less* likely to soil the milkers' hands.

It is to be hoped that all competitors had recently washed their hands; certainly there was no opportunity of doing so within the arena, and unless the judges had occipital eyes they could not have seen whether a couple of late-comers had taken that precaution.

One lad wore a linen overall. Three of the maids went through the process of wiping the cow's teats; but one of them laid down the cloth on the well-used straw at her feet and carefully picked it up afterwards in order to clean the second cow's teats. Not one of the competitors rejected the first flow of milk. Why should they? when the results depended partly upon the quantity of milk submitted for the judges' inspection.

One competitor was introduced to his second cow by a judge. With the assistance of his foot he made the cow stand to attention. The udder had just been resting upon an excellent culture of the organisms found in bovine dejecta.

The first cow had not parted with her milk very readily, so the lad was in a hurry, and without any *unnecessary* delay on his part he forthwith started filling his pail, not with milk only though, for he had no time (?) to turn the deep end of the pail towards the posterior aspect of the cow on a certain occasion. Besides, he had noticed that the judge had weighed the contents of his first pail without apparently deducting anything for foreign matter.

The crowd of onlookers were apparently either blind to these details or they recognised them as normal, for their whole attention seemed to be fixed upon the rate of the flow of milk into the pails, the weight produced, and the time taken by each competitor.

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It is to be hoped that the judges paid attention to the standard of hygiene of the milker, primitive though it was. From a perusal of the list of prize winners it was evident, however, that the competitors on those days were considered worthy of first, second, third, and even fourth prizes. Some of the milk thus obtained was sold at the official milk stall at the show.

The above facts clearly prove that there is a decided necessity for promoting a higher standard of cleanliness even among the educated milkers of this country, for many of the competitors referred to were ex-County Council pupils.

I therefore move that the Council of The Royal Sanitary Institute be asked to draw the attention of the leading agricultural societies and show committees to the necessity of insisting upon a proper standard of cleanliness in all milking competitions with the view of providing the public with cleaner and more wholesome milk.

DR. T. EUSTACE HILL (Durham C.C.) seconded Dr. Howard Jones' motion that the Council of The Royal Sanitary Institute do draw the attention of the leading agricultural societies to the necessity of requiring cleanliness in all milking competitions, and thought that if this were done, and the allocation of the prizes depended on reasonable hygienic precautions being observed by the milkers, more good would be done and more practical education in this important matter afforded to those engaged in the dairy trade than by county council classes or any other means yet devised.

MR. WILLIAM A. DELLAGANA (Southampton) said too much attention had in the past been devoted to the condition of cowsheds and milkers to the neglect of the cow herself.

The cow was undoubtedly the dirtiest animal of the farm; she was generally kept under the most insanitary conditions.

Milch cows should be groomed daily and occasionally washed, as became necessary, so that the best hygienic conditions prevailed at the time of milking. One of the chief difficulties appeared to be the contamination of milk by faecal matter. He would therefore suggest that, if possible, the cow be made to evacuate the rectum immediately before milking. If this Congress be instrumental in drawing attention to the prevailing want of veterinary jurisprudence in cowsheds, much could be done to rectify the present unfavourable conditions under which dairy cows were kept in this country.

MR. A. F. SOMERVILLE (Somerset C.C.) welcomed the calling attention of agricultural societies to the necessity of conducting milking competitions under such hygienic conditions as would educate the public watching them in the proper way of milking cattle. The agricultural society complained of was

not altogether responsible; the cows were sent by a contractor who took the milk away, none of it being sold in the yard, and the society had no control over it. Under those circumstances the writer of the paper ought himself to have looked after this milk which was taken into his district to be consumed there. There was further great difficulty in getting a sufficient water supply for the place where the competition was carried on.

An important feature in the milking competitions was to insist on milking with dry hands; to allow milk to flow over the hands must pollute the milk.

He promised to bring the matter before the notice of the society in question at the next meeting of its council, and impress upon them the necessity of observing the best possible hygienic conditions in conducting the competitions.

DR. HERBERT WILLIAMS (City of London) said that Dr. Howard Jones had done a public service in relating the results of his personal observations at a public milking competition. The point was that if a higher standard of cleanliness was not observed in milking competitions at agricultural shows, where else could you expect to find it? Certainly not in the small dairy farm in country districts, where the process of milking was done without the restricting influence of observation by the public. It was the experience of all London medical officers of health that milk, as it arrived in London, frequently contained quantities of filth, resulting from want of ordinary precautions during the process of milking.

MR. C. J. WATERFALL (Bristol) said that more attention should be paid by the public health authorities to the bacterial pollution of the milk supply. The laboratories of our great authorities dealt too greatly with the amount of fat and total solids in the milk, and to a very infinitesimal extent with the bacteriological and pus conditions that obtained; yet the latter were the most important.

DR. EDMUND SMITH (York) suggested that the Council of The Royal Sanitary Institute should urge the agricultural societies to include the hygienic character of the process of milking amongst the conditions upon which prizes were given in milking competitions at shows.

DR. J. H. WILLIAMS (Denbigh) said that the difficulty in securing clean milk in the rural districts arose partly from the reluctance of the magistrates to convict when dirt only was reported to be present. Perhaps the best way would be for the county council to devise means of publishing locally the results of the different milk analyses, with special reference to the amount of dirt present.

DR. J. SPOTTISWOODE CAMERON (Leeds) said that recently in Yorkshire an important inquiry had been undertaken by a conjoint committee appointed by the County Councils of the East and West Ridings, and of the cities and County Boroughs of Bradford, Hull, Leeds, Rotherham, and Sheffield. Their report and

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that of their bacteriologist were now published, and could be obtained from the clerk to the East Riding County Council. The bacteriologist found that in specimens of milk collected at the farm and put into ice there was an average of 80,000 colony-producing bacteria. The number of colonies varied from 5,000 to upwards of 1,000,000, and the average was 75,000 in the colder, and 88,000 in the warmer months. For convenience Dr. Orr, in his report to the committee, divided the milks into four classes, those whose bacterial content was less than 15,000, those between 15,000 and 50,000, those between 50,000 and 100,000, and those above the last figure. Grouping the first and second classes and the third and fourth together, it would be found that of the milks where the collector had reported the udders of the cows as clean, 72 per cent. came into the group with bacterial content of less than 50,000, while 28 per cent. only came into the dirtier group. On the other hand, of the cows with dirty udders, 34 per cent. only came into the first group, while 66 per cent. belonged to the dirtier group.

An important part of the investigation, however, was that in which experiments in clean milking of clean cows were made. Dr. Orr found that, employing ordinary farm hands for the purpose, after showing them how to cleanse the cows by proper grooming and then washing the flanks and udders, but leaving them wet, and using properly sterilized milk vessels, the ordinary farm labourer could produce a milk containing only 5 per cent. of the bacterial content of the milks sent to him from farms. He argued that 95 per cent. of the contamination at the cowshed was due to dirty cows, dirty milking, and unsterilized milk cans.

In answer to a question from a member, Dr. Cameron added that the milk taken directly from the udder contained bacteria, especially in the first 25 c.c. drawn.

DR. J. HOWARD JONES (Newport) said that Mr. Somerville's suggestion that the milk in question should have been seized was, of course, intended as a joke, for medical officers of health had experience of the difficulty of obtaining convictions in prosecutions under the Cowsheds, etc., Regulations.

Not long after the above incidents, prosecutions were instituted against dairymen under the above regulations; the teats of the cows and hands of the milkers were wiped with clean linen cloths; these cloths became filthy in consequence, but even such a practical demonstration was not sufficient to procure a verdict, and the cases were dismissed.

It had been suggested by Dr. E. M. Smith that the rules of cleanliness be added as a rider to the resolution proposed, but personally he preferred leaving the details to the Council, who were quite competent to deal with the matter.