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## Methods of Improving the Milch Cattle of India.

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When the Secretary of the Madras Agricultural Students' Union asked me whether I could read a paper at this conference, it struck me that I might take this opportunity to place before you all a few facts for consideration about the 'Improvement of the milch cattle of India', which I daresay is nothing new to those who are attached to the Agricultural and the Veterinary Departments. I am aware of my limitations and of the scantiness of material that I can furnish at present, and yet I have chosen this subject for its extreme importance to ryots and to other classes of men as well. Some of the statements below have been made from memory of what I had read or heard long ago. Their inaccuracies, if any, would not, I believe, affect the main arguments.

Agriculture has been said to be the backbone of India, and in fact it is the backbone of the world, since its function is no less than that of feeding and clothing the world. It is the only primary productive

industry and almost all other industries and commerce are mere processes of transformation, transference, or distribution of wealth produced by it.

The mainstay of such an all-important industry as Agriculture is cattle in India, though tractors, engines, and horses to a lesser degree, are doing their work in other countries. Apart from their value as a prime motive power, they are invaluable in producing milk —the life sustenance of millions and millions of infants, and of adults as well to a lesser degree.

The people are getting more and more used to consume milk in many ways, and the supply is very inadequate to meet the increasing demand. Consequently, the price of milk has risen and adulteration has become very common. This could be effectively checked chiefly by increasing the milk supply of the country.

There are few definite recognised milk breeds in India, and they are found in places where natural conditions are favourable. In other parts of the country, a few good milkers may be seen with particularly careful ryots. All other animals are very poor milkers and in most cases it does not pay to maintain them properly and they are consequently neglected.

Good milch cattle could be evolved in either of the following ways:—

(1) The local cows could be crossed with sires of the highly developed milk breeds of the European countries, as the Short-horns, the Ayreshires, and the British-Friesians and the progeny could be carefully reared to good milking animals. In the course of a few generations, the local cattle could be graded to very high class animals by crossing the progeny of the successive generations with sires of the same milk breed that was used in the first generation for crossing. This system of grading cannot be of universal applicability and can be confined only to the evolving of a few good milch cattle.

(2) The cows could be mated with sires descended either from good local milkers or from good milkers of recognised milkbreeds of this country. This system of improving the milkers is likely to be more widely applicable.

There are many difficulties in introducing the former system of grading. The Sires have got to be brought from foreign countries at prohibitive prices. When such animals land in India, they are not able to stand the heat of the country and they fail to thrive. They also become impotent. I believe that 3 Ayreshire bulls at Rs. 30,000 were got for Madras recently. One of them died prematurely. (Such was also the fate of rams imported from England for breeding in the sheep farm at Bantanhal). The other two bulls were not serving the cows properly in Madras and they had to be taken either to Bangalore or Ooty to get them fit for service. It would be very difficult to get on with such a system of breeding.

Even granting that the aforesaid difficulties could be overcome, the pure English, the three-quarter, the half, and the quarter breds are easily susceptible to the contagious diseases prevalent in India. The percentage of animals that are attacked when there is contagion and the rate of mortality among the attacked are frightfully high. Such virulent diseases as Rinderpest may prove the death of whole herds. It may be said that these animals could be protected by the use of serums, vaccines, and other prophylactics ; but it will be next to impossible to protect the very large number of animals that may be scattered in the country when such a system of grading is followed in any degree.

Next, let us consider the less virulent diseases as the foot-and-mouth disease. This disease makes its appearance not infrequently once or even twice a year. During an out-break almost all the pure English and the half-breds take the disease and a large number of them die, whereas among the local animals all are not attacked and disease is very rarely virulent among them. Only a few suckling calves and weak animals die of the disease. It is not possible either to prevent the appearance of the foot-and-mouth disease or to immunise the animals against attack by any method as far as is known to me. At least such a susceptibility of the pure and the half-bred English animals as a whole and their high rate of mortality when attacked by the contagious diseases ought to act as deterrents to the introduction of exotic animals, and the advantages that the introduction is likely to confer do not outweigh the disadvantages.

Dr. J. Mollison, M. R. A. C. formerly Inspector General of Agriculture for India, is a great lover of cattle and his opinion on the introduction of English animals may not be out of place here. He has said in his text book on Indian Agriculture (see Vol. III p. 6) that "violent crossing must be sedulously avoided, males and females widely divergent in type and breed should not be mated. The offspring of such a union is at the best a half-caste and is often a mongrel. .....English bred bulls are now and again imported into India with the object of improving the indigenous breeds. Fortunately the indigenous cattle have been only sparingly tainted by the exotic blood. The two types are so different and the purposes for which they are bred are so divergent that it is impossible that the English and the Indian cattle can be crossed with advantage."

Nextly, let us consider the other method of improving the milkers i. e., by mating the cows with sires descended from good local milkers or from good milkers of milk breeds of this country. In these cases it is very desirable that prepotent sires should be selected.

It is true that the various tracts have got their own environments that have fixed the characteristics of the breeds that are found there. Transference of sires from one tract to another should be guardedly done. The tract to which the sire is taken should not be widely divergent in its environments and climatic conditions from the original home. Also the cows and the sires chosen to be mated should belong to the allied types nearly. I use the words 'allied' in the same sense as when I say that the Kangayam and the Ongole breeds are more allied to one another than either of them are to the Alumbadies. In fact the Alumbadies form a distinct type.

The cattle of India may be roughly divided into three distinct types—(1) the Ongole type (2) the Alumbadi type and (3) the Guzarati type. All the Indian breeds may be placed roughly in one of these three big groups and mating of animals belonging to different groups is not advisable. There are good milk breeds in the Ongole and the Guzarati types. The Ongole and Sindh animals are instances of milk breeds of the Ongole type and the Gir breed is an instance of milk

breeds of the Guzarati type. The Ongole animals give 16 to 20 lbs. of milk per day, the Sindhis give 30 lbs. and more, and the Girs give up to 24 lbs. These are promising materials with which work can be started. The impressions that I received as a student, at the Agricultural College, Saidapet, in 1882, were that the original English breeders of Short-horns started their work with less promising material. I do not know whether it is the same with the Ayreshires and the British Friesians also. Anyhow the Short-horns, Ayreshires, and the British-Friesians were not dropped from the heavens in the present state of excellence and the English breeders concerned had them not for the mere picking. If it was possible in England to raise the cattle to the present state of excellence, it ought to be possible in India also to a greater or lesser extent. It is the systematic selection of good dams and sires for mating coupled with the careful rearing of the progeny for a number of generations that has produced a British-Friesian Colantha —a cow that completed here 3,000th gallon in less than 10 months. Let us hope that we will with persistency and unwavering aims in breeding be able to produce Colanthas in India, Colanthas innumerable, and Colanthas as divergent in types as the Ongoles, the Guzaratis and the Alumbadis—the three repesentative types of India.

What has been said of the improvement of milch cows applies equally to the milch buffaloes. The ordinary buffaloes give not infrequently 15 lbs. of milk per day. There are very good breeds of buffaloes as the Gir. They give 30 to 40 lbs., of milk per day which is equivalent to 60 to 80 lbs. of milk of European cows from the point of view of a dairyman so far as butter production is concerned. These breeds could be compared with great advantage to the best dairy breeds of Europe.

The above paper was read on the 16th by Mr. T. V. Raja gopalacharya in the absence of the writer.

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**Discussion:—**

*Rao Bahadur J. Chelvaranga Raju*, referring to the importance of the subject dealt with in the paper, said that he was proud to state that the author of the paper was an old friend of his and one of the "Old Boys" of the Saidapet Agricultural College. Mr. Mudaliar, he said,

had entered the Veterinary Department and after a long service had retired as Deputy Superintendent of the Veterinary Department. The audience, he added, would be interested in hearing that he had, after retirement, taken to Cattle-breeding and was doing very good work in this line in Tinnevelly—his native district.

*Mr. Vellingiri Gounder* M. L. C., remarked that he expected practical instruction on these lines from the officers of the Agricultural Department.

*Mr. A. M. Richards—Veterinary Assistant*—said that work on the lines of improvement of the milk yield was being done at the Central Farm at Coimbatore and that so far only three generations had been kept under observation. The results obtained thus far had been very interesting, but at the same time had proved that the results of selection and breeding were by no means as simple as they were usually supposed to be. The daughter of a cow with a good record had in many instances shown a diminution in yield, while the granddaughter on the other hand had shown a remarkable rise in yield of milk. He said there was no doubt that a heavy yielding breed can be built up by scientific breeding, though it would certainly take a long time. He further remarked that so far the aim of the cattle breeder in Coimbatore was not a heavy production of milk but the creation of good work animals.

*Mr. K. Unnikrishna Menon* remarked in this connection that one of the aims of the breeder in this direction ought to be the shortening of the dry period of cows.

## Prevention is better than Cure.

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This is a maxim well-known to everybody, though only very few people act up to it. It is often quoted in reference to human ailments but it is more applicable in the case of plant diseases because their treatment is more of a preventive than of a curative nature. In human illness medicinal means are often resorted to to effect a cure.