THE WORK OF THE ANIMAL HUSBANDRY BRANCH OF THE DEPARTMENT OF AGRICULTURE*

THERE have been considerable advances in Government activities designed to develop the breeding of livestock during the past 10 years and these advances have entailed considerable alteration in methods and organization.

It will, therefore, be profitable in order to obtain a better understanding of the present position to review quite briefly the more important changes which have taken place since 1930.

In 1930 both the Agricultural and Veterinary Departments were concerned with livestock development work to some extent. There was no clear division or allocation of work between these two Departments, and speaking generally the Agricultural Department was mainly concerned with plant crops and the Veterinary Department with disease problems.

Animal Husbandry work was done by both Departments and undoubtedly suffered from lack of co-ordination of effort. The problem of which Department should be responsible had arisen in many other countries. In some it was dealt with by putting the responsibility entirely on the Agricultural Department, in many others the Veterinary Department was made responsible, while in others the method adopted was to amalgamate the two Departments. The third method was eventually adopted in Ceylon, and that is how the matter stands to-day. In 1930 between the two Departments we found the following livestock stations :—

The old Veterinary Department had in its charge the Government Dairy at Colombo whose main function was, and is to-day, the supply of milk to Government Hospitals in Colombo, and a branch farm at Ambepussa used mainly as a feeder to the Government Dairy by rearing young heifers until they were old enough to take their place in the milking herd at Colombo. The farm had no goats and no poultry. Under the Agricultural Department there was a small dairy herd of Scindi cattle at Peradeniya, a small herd of Sahiwal cows at Labuduwa, and two small herds of Kangayam cattle, one at Wariyapola and the other at Peradeniya.

* A report read at the meeting of the Central Board of Agriculture held on March 18, 1940.

The only poultry in either of the Departments were a few pens at Peradeniya.

At that time rinderpest was widespread throughout the Island. This terrible scourge of cattle had been in existence in Ceylon for as long as records exist and had been cited by various committees of enquiry as the greatest obstacle to the development of a dairy industry in Ceylon.

Imports of livestock and livestock products at that time included such items as the following :—

Live poultry to the value of over Rs. 300,000, eggs to the value of over Rs. 500,000, and sheep and goats for slaughter to the number of 90,471 valued at over Rs. 1,000,000.

To-day the Agricultural Department has livestock and poultry to the number of :—

Cattle 1,017 (exclusive of draught cattle),
Buffaloes 373 (exclusive of draught buffaloes),
Goats 630,
Poultry 2,840,
Pigs 40,

distributed over the following farms and stations :—

The Government Dairy, Colombo, Ambepussa Farm, Peradeniya Farm School Dairy, Wariyapola Experiment Station, Labuduwa Experiment Station, Kilinochchi Station, Jaffna Experiment Station, Polonnaruwa Cattle Farm, small breeding centres at Nikaweratiya, Murunkan, Pottuvil, Akkaraipattu, Veyangoda, Karagoda-Uyangoda, and Practical Farm Schools at Karadianaru, Wagolla and Horana.

Rinderpest has been completely eradicated since 1929. No live poultry are imported for food purposes to-day and imports of eggs have declined almost to vanishing point. Last year only Rs. 1,982 worth was imported and as an offset we exported eggs to the value of Rs. 47,099 as ship stores. Imports of sheep and goats have been progressively reduced. Last year instead of over 90,000 as in 1930 we imported only 21,000, or to put it another way, in 1931 local production was only able to supply some 50,000 goats to the local slaughter-houses, while last year the local supply had increased to some 80,000. Translated into cash that means that, while in 1930 we were spending over Rs. 1,800,000 for foreign fowls, eggs, and goats, last year we spent only about Rs. 300,000.

This brief comparison serves to illustrate what progress has been achieved ; it will now be useful to study for a few moments the methods by which these results have been achieved, to review our present organization and to consider plans for continuing and developing this work.

We have succeeded in eradicating rinderpest, the most serious of all cattle diseases in Ceylon. The methods which achieved this end were briefly: first a complete embargo on import of cattle from Asiatic ports. This was necessary as the existing arrangements for quarantine were so faulty that they repeatedly allowed the introduction of fresh infection. The complete stoppage of importation gave us a breathing space and allowed us to concentrate on eradication without the heart-breaking experiences of having all our efforts frustrated by a fresh wave of infection starting in Colombo and spreading throughout the Island.

Once importation was stopped it was not long before Colombo and the adjoining areas were free, and the more formidable task of dealing with the disease in such difficult districts as the North-Central Province and the North-Western Province, could be taken up. Fortunately about that time a new method of vaccinating cattle against rinderpest was developed by workers in East Africa and the Philippines. It was found possible to prepare the vaccine in the field in Ceylon. A travelling laboratory was borrowed from the Medical Department and moved from place to place as required in the North-Central Province and North-Western Province preparing vaccine for use by the field officers. These efforts proved successful and by the middle of 1934 we were in a position to state that the whole Island was free from rinderpest. That freedom has been maintained until to-day.

To safeguard this freedom it was necessary to maintain the embargo against import of cattle from India *viâ* Colombo. This of course had the disadvantage that cattle breeders who wished to improve their stock by introducing good cattle from India were unable to do so. To overcome this a new quarantine station was built in Colombo, and was opened early in 1938.

The new quarantine station has the great advantage over the old one that it is situated on the edge of the lake in Colombo and cattle go straight from the ship into the Quarantine Station, without having to be walked or transported through the streets. The new station is used only for cattle imported for breeding purposes (no cattle for slaughter are imported). Since the new station came into operation at the beginning of 1938 one outbreak of rinderpest occurred in cattle which were undergoing their period of detention. It is satisfactory that the disease did not spread outside the station.

To come now to the manner in which the reduction in imports of live poultry and eggs has been brought about.

The egg problem as we saw it in 1930 was as follows :—

The price of eggs in the market was low and there was little likelihood of a rise. Indeed a rise in price was likely to result in a fall in demand. Cheap eggs were being imported in considerable quantities.

The price which the consumers were able to pay was so low as to make it unlikely that the production of eggs on large scale poultry farms would be a success. There was a limited market for special quality eggs at a higher price but it was obvious that the largest market was for a cheap egg. The egg required was a fresh egg, but large size was not so important. It was concluded that this market would have to be supplied by people who could produce eggs at low cost, in other words the villager, the small-holder and people who could give their bird free range and so cut down the cost of purchased food to a minimum. The next consideration was what type of fowl was likely to be most suitable for such conditions. The village breed of hen had the advantage that it was well adapted to village conditions and was an excellent forager capable of finding its own food to a very considerable extent, and the hens were good sitters and excellent mothers for chicks. Their disadvantages were the small size of their eggs and the low annual production. It was concluded that the village breed of fowl would make excellent foundation stock for our purpose and that their egg-laying capabilities and the size of egg could be considerably improved, without losing their valuable characteristics of hardiness, etc., by crossing with such improved breeds as the R.I.R. and White Leghorn. The following steps were taken to develop this village or small-holder's type of poultry breeding :—

Stocks of poultry of good imported utility types, mainly R.I.R. were started on Departmental farms for the production of cockerels for crossing with villagers' hens. The first farm which was started was at Ambepussa which is still the largest R.I.R. farm in the Department. In addition to flocks of birds in our large farms and stations small centres in rural areas were started. These were intended to become demonstration centres and to supply cockerels and hatching eggs to the villages in their vicinity. Typical examples of such small centres are those at Veyangoda, Murunkan, Nikaweratiya and Akkaraipattu.

A leaflet dealing with simple methods of poultry breeding was prepared and distributed through the Co-operative Department. It soon became evident that the methods outlined above would succeed in producing cheap eggs of reasonable size and quality but that existing marketing arrangements did not give sufficient encouragement to producers.

The largest market was in Colombo and dealers there could get regular bulk shipments of imported eggs at a low price. So long as these imported eggs were available on their doorstep, as it were, the dealers were not interested in developing an organization for collecting eggs from small producers in the rural areas.

Another important factor in the situation was the importation of serious poultry disease by the live poultry imported. It was proved that consignments of live poultry quite frequently arrived affected with Pseudo Fowl Plague. This was such a serious obstacle to the development of the poultry-rearing industry in Ceylon that it was necessary to prohibit importation of live poultry from Asiatic ports in 1930. That prohibition continues in force to-day. It has definitely helped to reduce the incidence of Pseudo Fowl Plague and has of course been a stimulus to the local poultry breeders.

Although progress was being made and local production was increasing, the presence of the imported eggs on the market slowed up the pace very considerably. To assist the local producer an increased import duty was placed on imported eggs in July, 1934. Following this local supplies quickly increased, and considerable assistance was given to the growing industry by the Co-operative and Marketing Departments.

The position to-day is that the market is being fully supplied by locally produced eggs and poultry and there is a small export trade in eggs as ships' supplies.

Future developments depend upon an increased utilization of eggs and poultry by the mass of the population, extension of the trade in supplying to ships at Colombo, and a possible export trade. The number of people in Ceylon able to pay a special price for large, best quality eggs and specially-prepared table birds is comparatively limited. But such a demand does exist and the needs of that market can be met by the larger scale poultry farmer. A certain number of larger poultry farms are in existence especially on coconut lands. At present, so far as one can see, the prospects of development of this large scale poultry farming are not so good as in the case of the small producer with his lower overhead charges and costs of feeding.

So far as the breeding of sheep and goats is concerned there is a much bigger demand in Ceylon for goat mutton than for sheep mutton and the climatic conditions and vegetation are in most parts better suited to goats than to sheep. For these reasons chief attention has been devoted to goats.

The biggest market is Colombo, and in 1930 the requirements of Colombo were being met almost entirely by goats imported mainly from South India but also from Africa. The number imported was over 100,000 a year in the boom years.

The imported goats were preferred by the dealers in Colombo because they were bigger than the local ones—most of the males were castrated and the dealers did not have the trouble of sending their agents out into the country to buy. These imported goats very frequently developed Anthrax during their period of quarantine and sometimes Pleuro-pneumonia. If goat-rearing was to be encouraged in Ceylon it was most undesirable that unrestricted importation should be allowed with its attendant risk of introduction of disease.

The goat population of Ceylon was not at that time adequate to supply the full requirements of the market. The situation was dealt with by imposing a quota on imported goats.

This quota could be varied as local supplies increased. The scheme was started in December 1932, with the quota fixed at 6,000 per month and since then the quota has been reduced from time to time as local supplies became available and to-day it stands at 2,000 a month. This quota scheme assured a market for increased local output and put us in a strong position in advising people to take up this branch of livestock breeding.

Special attention was devoted to those areas where the climate and soil were suitable and sufficient area of scrub jungle land was available. Here I would like to point out that heavy dense jungle is by no means ideal for goats. A leaflet in simple language was prepared which pointed out the market which existed and laid down simple instructions for breeding, management, feeding, prevention of disease, etc. The object was to stimulate the breeding of goats by villagers and small-holders in suitable areas.

To improve the size of the goats castration of surplus males at an early date has been advocated and the use of the Burdizzo instrument demonstrated. Crossing the local breed with a large type has also been experimented with. Here it was necessary to proceed with more caution because goats are very liable to be adversely affected by a change of environment. Because a certain type of goat thrives and attains a large size in its native place it by no means follows that it will do likewise in a different area.

In our search for a suitable type to cross with the local goat we have tried the Anglo-Nubian from England, the Bangalore goat, the Scindi goat, the Aden goat, and the Jamnapari. Of these the Anglo-Nubian has proved definitely unsuitable for our purpose. In Ceylon its only value is as a milk-producing goat kept under good conditions and more or less stall fed.

The Aden goat has not been a success being very susceptible to pulmonary diseases during the rainy season. The Scindi seems to feel the heat too much on account of its long heavy

coat of hair. The Bangalore and Jamnapari types seem to be the most promising. We have established a fairly large flock of Jamnaparis at Polonnaruwa. From this flock we supply breeding stock to our smaller centres and at present sell young stock to breeders. Before long the stage will be reached where sales to breeders will not be sufficient to absorb our surplus and then distribution of males on loan to smaller breeders will be started.

To come now to our work with cattle. In the nature of things results with cattle must be slow. The improvement of cattle in Ceylon is not one problem but really several separate and distinct problems needing different methods of approach. There is the purely dairy type of cattle; the type of cattle suited to the needs of the villager and the small-holder; the purely draught cattle; and buffaloes for either milk or ploughing.

It is also very necessary to have a clear idea of what benefits we expect to follow from an improvement in our cattle. As you all know cattle have played and still play a comparatively minor part in our agricultural practice in Ceylon. The points which we have got to bring home to people before they can be expected to take a greater interest in their cattle are the following :—

(*a*) The great value of cattle manure and compost as a fertilizer of the soil.

(*b*) The improvement in tillage which will follow the use of better ploughs and other agricultural implements and the fact that in most cases these improved implements require bigger and stronger cattle to work them.

(*c*) The great value in human nutrition and prevention of disease of those foodstuffs which cattle can produce such as milk, curds, and ghee.

(*d*) The possibilities of cattle as a source of additional cash income.

Propaganda on all these subjects is a necessary preliminary foundation for our work, and an increasing volume of propaganda is being disseminated. There can be no doubt that the importance of cattle is to-day much more generally realized than it has been in the past. Our propaganda or educational work has been greatly assisted by the work of the Medical Department on human nutrition, by the Marketing and Co-operative Departments, by the Cattle Breeders' Association through their Shows, and by the Education Department through their Rural Schools.

We have no one all-round remedy to offer and our work is divided into various sections.

For example we see two ways in which the cattle of the villager may be improved. As regards these cattle we have

to bear in mind that the basic causes of their small size and low milk yield are inadequate food and a very low standard of cattle management. Improvement of the food supply can hardly be looked for along the lines of greater use of concentrate foods which have to be purchased because of the low level of purchasing power of the villager, but without any great expenditure in cash, food supplies for cattle can be increased by extension of the practice of growing fodder grasses, and greater realization of the value of such crop residues as straw and the need to collect and preserve them. The level of management can be improved in such simple or elementary ways as housing and kraaling at night, handling of calves from birth onwards so that they are docile when they grow up, decrease of the practice of branding, castration of surplus bull calves, reduction of tick damage by use of cheap repellants, etc. As improvement is brought about along these lines the work of improving the type or breed of the cattle is taken up.

Improvement of type can be effected by crossing or grading up by means of bulls of better types. The selection of the type to be used for this purpose is an important matter. For village cattle improvement we consider the Scindi to be the best suited. The reasons which have influenced the choice are the fact that the Scindi is not a very big breed, it is a very useful milker, the bulls are useful draught cattle, and it is adapted to tropical conditions of climate and resistant to tropical diseases.

Our policy, therefore, is to provide a supply of stud bulls of this breed. Our main source of supply will be the Polonnaruwa Cattle Farm. Here we have already a herd of 193 head of Scindi Cattle. We have smaller herds at Peradeniya, Nikaweratiya, and Veyangoda, and stud bulls of this breed are stationed for service at our farms, dairies and smaller centres.

Along with improvement of the village type by crossing, an attempt is being made to establish a better type of the pure village breed. This is of course a very slow process. The idea behind this work is that, for the villager whose resources of land, etc. are very limited, a small cow is required which can produce up to 4 bottles of milk a day for the use of the family and breed a useful type of active draught bull and do this on such foodstuffs as are within reach of the villager. We consider that for such work an improved type of the local village breed would be ideal. This work is in its very early stages. The possibilities are considerable as our preliminary work with a small pure herd of these cattle first at Peradeniya and later at Karagoda-Uyangoda in the Matara District has shown. The Cattle Breeders' Association is giving encouragement to this work. It has drawn up a standard for the breed and offers cups and prizes at its shows.

Another breed with which we are working is the Sahiwal or Montgomery. These are considerably bigger cattle than the Scindi, they are admitted to be the best dairy breed in India. Their considerably larger size is perhaps a handicap as compared with the Scindi for the purpose of improving village cattle. To get the best out of this breed they will require feeding on a higher scale than the Scindi or the Scindi cross. They should prove a suitable breed for dairymen in the low-country.

We have a growing herd at Labuduwa near Galle which has been increased last year by purchases from India.

The Jaffna Peninsula presents us with a problem peculiar to itself. For very many years it has been the practice of the Jaffna cultivators to go each year to South India to the large annual cattle fairs. There they purchase cart and plough bulls which are imported *viâ* Kayts. The numbers imported each season are quite considerable varying from about 500 to as much as 1,000. The existence of this trade necessitates the maintenance of a Quarantine Station on the Island of Kayts and is of course a weak point in our defences against Rinderpest.

The cattle imported for this purpose are of the Mysore type, that is they are purely draught cattle especially selected for fast work whether in cart or plough. From all points of view it would be preferable to breed these animals at home if that can be done. To test the possibilities we have started a small herd of this type of cattle at Kilinochchi. They have been there nearly a year and so far seem to thrive. We propose to increase the herd by further importation from India this year.

The European Dairy type of cattle presents a separate problem. As you all know cows of this type have been bred up-country for many years. They are the main source from which the town dairymen draw their requirements. They are therefore a very valuable asset to the country. Unfortunately in recent years very few cattle of this type have been imported either from Europe or Australia. The reasons appear to be high freight charges, increasing use of artificial manures, and the change over from privately-owned to company-owned estates.

The lack of importations of fresh blood is bringing about a deterioration in the standard. To obviate this it is planned to start a farm up-country which will be stocked with cattle imported from Great Britain and whose function will be to provide a supply of well-bred bulls for use in the up-country areas. Work on this project has already been started at Bopatalawa. It is expected that when this farm gets under way the deterioration in the standard of these European cattle will be checked and the town dairymen will be able to get the type of cow which they require and to which they have been accustomed.

A greater use of ghee in the diet of the people is advocated by the Medical Department. Local production of ghee is small in quantity. The Indian milch buffaloe stands alone as an economical ghee producer. A very marked increase in our local production of ghee is necessary.

There are areas in the country where buffaloes are regularly milked and their milk used for preparation of curds and ghee. The possibilities of extension are considerable. To improve the milking capacity of the buffaloes in these areas we advocate crossing with Indian milch buffaloes. To furnish a supply of crossing bulls we have established, by importation from India, a herd of Murrah buffaloes. This is considered to be the best milking breed of buffaloes in India. Already our herd numbers 226 head. They are at Polonnaruwa and so far have adapted themselves very well to our conditions.

To sum up, our work with cattle consists of:—

(*a*) control of infectious disease and prevention of importation of infection from outside. For this work we have our staff of Veterinary Officers, our small research laboratory and two Cattle Quarantine Stations, one at Colombo and the other at Kayts.

(*b*) education of the cattle owners on better methods of feeding and management. This is done through our Propaganda branch and by our field officers, and is greatly assisted by other bodies such as the Co-operative Department, the Cattle Breeders' Association, and the Education Department with its Rural Training Schools; and

(*c*) providing and supplying of improved breeds of stud bulls. For this we have breeding farms and smaller centres where the stud bulls are stationed.

There is another important branch of our work which I have not mentioned. That is the need to provide facilities for young men to learn improved methods of livestock management.

There are different types of young men with different needs. We have the young man of the land-owning class who will run his own farm or estate. It is for this type that the Peradeniya Farm School caters with a two-year course in general agriculture including dairying and poultry breeding.

Then there is the type which seeks employment as a skilled cattle man or milker in a dairy. For this type we have a practical apprenticeship course of one year's duration at the Government Dairy.

Then there is the type equivalent to the conductor on a tea estate who will seek employment in charge of the cattle, poultry, or goat breeding sections of large estates. For this type we project a school at Ambepussa. The Ambepussa School will be started with a course suitable for such young men but will later be developed to provide a more advanced and complete courses of instruction.