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BASUTOLAND

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**ANNUAL REPORT**

OF THE

**DEPARTMENT OF AGRICULTURE**

FOR THE YEAR 1951

# ANNUAL REPORT OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR 1951

## SECTION I

### REVIEW

#### INTRODUCTION

1. Basutoland is a country virtually without industries and a Geological Survey conducted in 1938-1940 made it clear that there is little chance of any mineral development.

The economic future of the country must then depend mainly on agriculture and stock raising.

2. The year 1951 has been one of consolidation and development and steady progress has been made despite adverse agricultural conditions which resulted in a poor grain harvest.

3. There were signs of food shortages in some areas but these were overcome by increased imports of maize and maize products from the Union of South Africa, mainly during the months from August to December. Prospects for the new season's crop are poor on account of drought during November and December over a large part of the Territory.

4. Despite adverse agricultural conditions, the difficulties in obtaining suitable staff and the long delays awaiting plant and equipment from overseas, the work of the Department has gone ahead satisfactorily and plans have been drawn up for the next phase in agricultural development. The main points of interest are :

(1) *Wool and Mohair Improvement Policy.* During the year a great deal of attention was given to improving these valuable export commodities. Plans have been made to ensure a regular supply of improved rams, to improve the standard of classing, and to ensure that only wool and mohair which has been properly classed can be exported. New wool and mohair marketing regulations have been drawn up, with the help of the best professional and trade advice obtainable.

(2) *Hide and Skin Improvement.* Agreement has been reached with the authorities in the Union of South Africa for the export in bond to overseas markets of shade dried hides, known in the trade as "Maluti" hides. A limited liability company is being formed to handle these, and the enhanced prices which properly processed hides will fetch should be a great boon to the Basuto.

(3) *Soil Conservation.* The scope of soil conservation work has been enlarged by a further grant of £122,200 from the Colonial Development and Welfare Fund (Schemed 603 B). This has enabled existing work to be speeded up, new works to be commenced and additional implements to be bought. During the year a further 22,000 acres were terraced in the lowlands and 33 dams were constructed.

(4) *A Pilot Project.* A Pilot Project which includes a demonstration valley and mechanised cultivation trials on a co-operative group basis has been approved in principle. It is intended that this valley shall be not only a large scale demonstration area for all aspects of betterment work in Basutoland, but that lessons learnt there should be disseminated throughout the Territory by members of the Agricultural Department's staff sent there to assimilate what is being achieved.

(5) *A Veterinary Assistants' Training School.* A Veterinary Assistants' Training School was established in August and has twelve students. The course, which will last a year, is designed to give the students instruction in simple veterinary measures. At the end of the course they will each be posted to a district where they will be responsible to the Principal Veterinary Officer for all veterinary matters.

(6) *Honours*. During the year His Majesty the King was graciously pleased to confer on Mr. L. H. Collett, M. B. E. Soil Conservation Officer, the honour of O. B. E. (Civil Division) in recognition of his outstanding work in the field of Soil Conservation.

## AGRICULTURAL POLICY

5. The aims and ideals to which agricultural effort should be directed have been given in detail in previous annual reports and in the Report on the 10 Year Development Plan for the Territory which, having been accepted by Government, is being implemented as circumstances permit.

6. A summary of the main lines upon which agricultural policy continues to be directed is given below :

(1) To prevent the exploitation of the soil and to endeavour to improve its productivity under agricultural management whether it be arable or grazing, and to improve, wherever possible, the water supply for both humans and livestock.

(2) To encourage the production of food crops bearing in mind the importance of health-giving food crops both for humans and for livestock, to supply improved planting materials and to advise upon methods of production.

(3) To encourage the maintenance of livestock of improved productive capacity, in the interests of the people and of soil fertility. Better animal products are required for nutritional purposes and for sale, i.e. milk and meat — wool, mohair, hides and skins. More manure is wanted to maintain soil fertility.

(4) To carry out, by field trials, investigations designed to expand the range and improve the quality of economic crops both for export and local consumption.

(5) To encourage a healthy outlook on agriculture as an occupation by expanding vocational education in agriculture and by creating an informed extension service.

- (6) To stimulate co-operation amongst agriculturalists with the object of obtaining co-operative or group production, co-operative marketing and provide a channel for the granting of financial assistance to productive enterprises.

## STAFF

7. Dr. P. H. Brown was appointed as Veterinary Officer in March, and on the resignation of Mr. E. T. Fern in July became acting Principal Veterinary Officer.

Mr. G. L. Hunter accepted appointment as Agricultural and Livestock Officer in January, but resigned the service in August to take up a post-graduate scholarship at Cambridge University. Mr. R. F. S. Heering retired on pension after 21 years of loyal service to the Basutoland Government, Mr. C. W. R. Mackay taking his place in the Accounting Section of the Department.

In accordance with the policy of Africanisation where circumstances warrant, Messrs E. G. Ntšasa and A. Mohasi were promoted to the posts of Assistant Agricultural and Livestock Officers, and posted to sections of the Maseru District.

Five European and two African Development Officers were appointed on contract terms to assist with the increased development programme. Subsequently two Development Officers relinquished their posts, each after a few months of service.

In April the boundaries of nine agricultural districts were changed to coincide with the Administrative or political boundaries. While convenience from a topographical viewpoint was sacrificed in some districts, rendering supervision more difficult, the advantages of the change far outweigh the disadvantages, as it is now possible to plan and organize the agricultural work on a district basis and for its execution to be dealt with by District Teams. The change called for a complete re-organization of the district staff. The present strength and disposition of administrative and executive field staff are given in Appendix I.

## WEATHER CONDITIONS

8. The planting period for the major crops is, normally, late September until early in December. Moisture conditions during the latter part of 1950 were not good, suitable planting rains not

arriving until late in November. Consequently all crops were late, and yields were further depressed by an unusually early lowland frost in April. The winter months were excessively dry and cold, but good rains in late September and October gave promise of a better crop year for 1952. Less than two inches of rain for both November and December was recorded, however, and at the end of the year crop prospects are more unsatisfactory than they have been since the 1933 drought. Monthly rainfall figures are given in Appendix II.

## AERIAL SURVEY AND MAPPING

9. The difficult topography of the mountain area of the Territory has led to unforeseen delays in the completion of the ground control triangulation, and it is now anticipated that at least another 12 months of field work will be required. The completed map will consist of 60 sheets, on the 1 : 50,000 scale, and of these six have been received from the Directorate of Colonial Surveys, for insertion of place names and return to London.

Two matters which have presented difficulties delaying the progress of the Survey Party are the plane tabling of the Orange River basin, where very accurate contouring is required for further consideration of hydro-electric potentialities, and the training of reliable Basuto heliograph operators for triangulation observations.

## SECTION II

### AGRICULTURE

#### A. CROP PRODUCTION, YIELDS AND FOOD SUPPLIES

##### 10(i) *Maize and Kaffir-corn.*

Planting rains in November and December 1950 were late, and with the exception of the Orange River valley, where average crops of maize and kaffir-corn were harvested, most fields were badly damaged by an early frost in April when they were in the dough stage. Yields and quality of both crops were generally poor. Reference is made later in the report to the quantities of maize which were imported from the Union

to supplement the meagre crop, and estimated territorial yields are tabulated at the end of this section. The crop to be harvested in 1952 will be extremely poor. A considerable area was planted after the rains in October, but owing to the hot dry weather in the following months the early sown crops have dried out completely. Only in certain villages in the foothills, which are cooler, and in the two north western districts, which had a little more rain during November and December will there be any harvest worth considering.

(2) *Wheat and Barley.*

- (a) Lowland crop, harvested in January and February. This crop suffered severely during the growing months late in 1950, when rainfall was inadequate. The crop is mainly sown in the south western districts, and is only of minor importance.
- (b) Lowland crop, sown in May. This crop only gave patchy returns and it is feared that it will thresh out indifferently, with badly filled grain.
- (c) Mountain crops, harvested in March and April. This crop was fair to good, but also very patchy. Considerable losses occurred during the rains of February and March, when many stacks sprouted while awaiting threshing. Covered smut is increasing.
- (d) Mountain crop, to be harvested in March and April 1952. Over a considerable section of the mountain area no wheat was planted on account of the virtual absence of rain during the last 3 months of 1951. In this regard the rainfall figures given in Appendix II are apt to be rather misleading, as the nine stations from which the average is taken include two mountain stations, where rainfall in October was insufficient for ploughing and planting. Prospects for this crop are in general very poor indeed, with a few notable exceptions in the foothills and those mountain valleys which had the benefit of the few isolated showers which fell during the growing months. The above remarks apply equally to barley, but barley grain is only of very minor importance in the territorial economy.

(3) *Peas.* Isolated lands are sown in the Lowlands to peas in May for harvesting in the following December. These give

such a small proportion of the territorial pea crop that a separate report is not warranted.

- (a) Mountain peas sown in October 1950 gave a very good return, but were badly damaged by the rains during harvest early in the report year.
- (b) The growing crop of mountain peas is likely to give very poor yields, for the same reasons as given for the standing crop of mountain wheat.

(4) *Oat Forage.* The usual small acreage of oats for forage was planted, with excellent yields in February and March of the report year.

(5) *Crop Yields.* Estimated yields of all crops, with estimates for the previous year are as follows :

<i>Crops</i>	1950 (Bags of 200 lbs)	1951
Maize	2,345,100	700,000
Sorghum	543,100	200,000
Wheat	548,500	300,000
Other Crops (peas and barley)	136,400	110,000

(6) *Exports and Imports of Foodstuffs.* Permits were issued during the year for the export of produce to the Union of South Africa as shown in the table below. Permits issued for the previous year are given for comparison :

<i>Produce</i>	1950 (bags of 200 lbs)	1951
Wheat and wheaten meal	23,592	53,977
Peas and beans	46,369	32,511
Kaffir-corn	37,504	21,769

The quantity of maize imported during the year from the Union of South Africa reflects the poor maize harvest in the Territory. 172,190 bags of maize or maize meal were imported, of which upwards of 130,000 bags were used during the latter half of the year. On this £40,178 was refunded to the Union Government, being the amount by which consumers of maize in the Union would have been subsidised on that quantity of maize by the Union taxpayer. The selling price of maize was controlled by legislation.



## B. INCREASED FOOD PRODUCTION AND EDUCATION

### 11. *Manuring.*

(1) No quantitative statistics relating to application of kraal manure and village ash were kept, but a decline in the demand for Government carts for carrying manure on to the lands was reported from all lowland districts. There was, however, a strong demand for the limited quantity of phosphate mixture made available to Basutoland by the Union Government Controller of Fertilisers. 150 tons were disposed of through normal trade channels and Co-operative Societies.

(2) *Vegetable Gardens and Fruit Trees.* The usual free issue of vegetable seed was made in October. Conditions in the early part of the year were favourable for the maturing of all garden produce. Nearly 14,000 families now have their own vegetable plots, but moisture conditions for spring planting at the end of the year were so unfavourable that numerous gardeners have made no effort to cultivate their gardens for autumn and winter crops in 1952. A free issue of 800 peach and apricot trees was made during the year. An excellent germination of peach stones was reported from all districts, and many thousands of well grown young trees are available for distribution in the appropriate season in 1952.

(3) *Agricultural Shows.* The general and early ending, by frost, to the growing season, which reduced all produce in the lowlands to an inferior quality, combined with staff changes to which reference is made in paragraph 6. Page 10, resulted in only one show being held. This was in an area to which the remarks above did not apply. It was completely successful, £61 being paid out in prize money, with a Government grant of £10.

There is a general feeling that a better purpose will be served if the customary small district shows are combined into one central show, preferably at Maseru. Organization of this will take considerable time, and, on account of the small crop anticipated for 1952 it was not considered appropriate that arrangements for such a show should be initiated this year.

(4) *Agricultural Associations.* 140 Associations were in existence during the year, with a total of 5,379 members. In dis-

tricts where the Associations have affiliated to form central bodies, usually where the people are progressive and there are intelligent men who are prepared to act as presidents and secretaries of the bodies, it is felt that these Associations serve a useful purpose. They form an extremely useful agency for the dissemination of propaganda, and also are able to purchase their agricultural requirements more or less on a co-operative basis, in addition to buying and selling good seed amongst themselves.

(5) *Co-operative Societies.* Wool and Mohair marketing continued to be the main feature of co-operative development in 1951. The number of societies remained at 8, but membership rose from about 900 to about 1,500, volume of wool sold from 346,000 lbs to 390,000 lbs and its value from £50,000 to £136,000. The wool market ended its 1949-50 season in March on a high level, but the 1950-51 season opened in September with even higher prices, which continued to advance almost throughout the season and represented levels never before attained. Members benefitted very greatly from the co-operative sales of their wool, and non-members too had cause to thank Co-operation for the higher wool prices which its competitive influence brought about in Basutoland.

There was also evidence that the co-operative societies' policy of exporting only properly classed wool was bearing fruit, in the form of higher prices on the open market. During the year wool co-operatives also exported, on their members' behalf, some 33,000 lbs mohair, which fetched over £9,000 on the coastal markets, and 20,000 lbs hides and skins valued at £3,000. In addition they obtained fertiliser, stock salt and agricultural implements for their members by bulk purchase.

The volume of wool handled by co-operatives represented about  $4\frac{1}{2}$  per cent of the Territory's total wool exports, while in the case of both mohair and of hides and skins the figure was approximately  $2\frac{1}{2}$  per cent.

Four co-operative agricultural societies were in operation during the year, but with the exception of one which exported some wool and mohair, their function was confined to the bulk purchase of goods for their members, rather than the disposal of their produce for them, a service which has still to be developed.

(6) *Work of Demonstrators.* The demonstrator staff consists of 44 men, all of whom have had training at one of the Schools of Agriculture in the Union, and whose work is supplemented by that of 67 assistant demonstrators and 60 temporary men. In addition, trained wool and mohair classers are taken on for the shearing seasons. The demonstrators' duties include lectures and demonstrations, soil conservation work in the mountains, supervision of tree planting, simple treatment of livestock ailments and the dosing of small stock against internal parasites. Demonstrators are all briefed at the end of each month by the Agricultural and Livestock officers in the work they are expected to carry out during the following month. 1,017 organized lectures and demonstrations were given by Agricultural and Livestock Officers and Demonstrators to 43,000 Basuto farmers, in addition to an unrecorded number of talks to small groups of individuals. The subjects chosen are topical, with a constant background of soil conservation in its broadest sense.

The staff changes in April have resulted in an unavoidable disruption of continuity in district field work, as it takes considerable time for a member of the staff to become acquainted with the people of his district, and vice versa.

(7) *Agricultural Advisory Board.* Mention was made in the Livestock and Veterinary Section of the report for 1950 of the formation of a Livestock Board, to define a long term policy in regard to the livestock industry and to maintain a proper liaison between the Government and people in the fulfilment of that policy. It soon became apparent that this body filled a long felt need, and its usefulness warranted the extension of its functions to allow it to act as a liaison body on all agricultural matters. Its designation has, therefore, been changed to that of Agricultural Advisory Board, with enlarged membership to include a member nominated by the Basutoland Agricultural Union, and a representative of the Paramount Chief.

### C. TREE PLANTING

12. Over 24,000 young trees were issued from the eight district nurseries which are maintained departmentally. The drought during November and December resulted in the death of a proportion of young trees — indeed in the mountain area, where soils

generally are shallow, a heavy mortality in tree plantations which had been established for 18 years has to be recorded. From this and other observations the conclusion is reached that there is a definite ecological reason for the almost complete absence of trees in the mountain area, and any mountain tree plantation scheme which is considered in future must take into account the factors of soil depth and sub-soil moisture availability. Also, fencing which is proof against sheep and goats appears to be a necessity.

#### D. PLANT PESTS AND DISEASES

13. (1) *Cutworm*. Attacks on spring crops of all kinds was severe.
- (2) *Stalk Borer*. Planting of the maize crop was late in 1950, and stalk borer did not cause the usual percentage of loss.
- (3) *Covered Smut in Wheat*. This appears to be on the increase and the existing regulation in regard to the purchase of smutty wheat is to be more strictly enforced.
- (4) *Rodents*. Supplies of strychnine treated wheat were inadequate to control the increasing number of field rats, which caused extensive damage to crops throughout Basutoland.
- (5) *Aphis*. Attacks by aphis on the winter sown wheat crop in the Lowlands was light.
- (6) *Rust in Wheat*. Although conditions appeared to be favourable for heavy rust attack in the mountain wheat harvested in March, losses from this source were inconsiderable.

#### E. EXPERIMENTAL WORK

14. In the report for the previous year it was stated that, for convenience, the Agricultural and Livestock Officer in charge of experimental work was to conduct experiments on the farm attached to the Leper Settlement. As certain objections were raised by the Native Authority to the use of this farm for any purpose other than the production of fresh food for the inmates of the Institution, experimental plot work had to be abandoned for the time being. In view of the fact that a soil fertility worker was expected to join the staff during the year, it was considered desirable that all experimental work and the question of a site for experimental plots at an Experiment Station should await his arrival in the Territory.

In this connection reference must be made to the visits of the Paramount Chief and a party of Advisers to Britain during the year, and to a Pilot Project which has been planned. The Paramount Chief spent the months of October and November in England, Scotland and Wales, visiting various places of agricultural interest. On their return the Party urged on Government the need for a proper Experiment Station, and an advisory Service of specialists, to deal experimentally with all agricultural matters, including crop, soil and livestock problems. Estimates of the cost of providing these services have been prepared, and it is considered that the establishment of a fact finding section within the Department will provide information without which an increased tempo of progress will be difficult.

The first phase of agricultural betterment, i.e. the stabilization of arable soils, and pasture management, may now be said to be within a few years of completion. The second, and infinitely more difficult phase, the urgency for which becomes more apparent as time goes on, must be a general improvement in farming systems used, to ensure larger yields from arable land than are usually obtained at present. Sporadic attempts have been made in the past to bring livestock into greater integration in the present system, with proper crop rotation, but if any change is to bring lasting benefit it must be of a really fundamental and widespread nature.

The changes visualised call for a preliminary large scale experiment in which all improved methods are tried, and in which a representative cross-section, the population takes part. (Difficulty with extension work is the general apathy of the average Mosutho farmer, who can obtain any additional money readily by going out to work in the Union on the Mines).

A scheme has been put forward as an application for assistance for a Pilot Project from Colonial Development and Welfare Funds, under which this experiment can be carried out. The Pilot Project has been approved in principle.

It is intended that one complete watershed shall be taken and turned into a miniature "Tennessee Valley Authority".

Land will be classified and put to its correct uses. This will include mountain pasturage on the system of rotational grazing, land for afforestation, small irrigation schemes, and good arable cultivation including the introduction of leys for the winter feeding of livestock.

The whole area will be treated as one unit for soil and water conservation. Better systems of farming will be introduced on a

co-operative group farming basis. In addition to better agricultural techniques, better medical and educational services will be introduced. The main object will be to concentrate effort into one watershed so as to have one large scale demonstration of all aspects of betterment work in Basutoland for the tribal administration and others to see. It is axiomatic that the present agricultural methods must not only be improved, but these better methods must be popularized and made attractive and, moreover, such innovations must be proved technically and economically sound.

## F. AGRICULTURAL SMALLHOLDINGS

15. The system under which these holdings have been run in the past was changed during the year. It was found that when the smallholder was required to carry out certain farming operations, these were often delayed with such results as the missing of planting rains and lack of sufficient weeding. In order that results might become more positive, smallholders have been placed on the holdings on a new basis. They are given a small wage, and in as far as this a certain amount of pressure can be put on them to see to their farming operations timeously.

## G. CONTROLLED GRAZING

16. On the whole this work proceeded very satisfactorily. With the exception of two small districts, all mountain areas have now been brought under control, and the time has arrived for the cattle post areas which were destocked four or five years ago to be restocked on a basis of carrying capacity and rotation. This has been asked for by the Ward Chief in whose area the grazing control system was initiated. In this connection reference must be made to the change in outlook of the Basuto intelligentsia in regard to livestock.

During their visit to Britain, the Paramount Chief and Party were impressed by the fact that the British livestock owner grows quality animals and does not stock so heavily as to cause deterioration in his grassland. The Paroumount Chief is now prepared to proceed with a policy of livestock limitation in a general way, and ways and means of bringing this into effect in an equitable manner are to be devised by the Native Authority in consultation with the Department of Agriculture.

### SECTION III

## ANIMAL HUSBANDRY AND LIVESTOCK PRODUCTS

### ECONOMIC ASPECT

17. (1) *Cattle*. The season has, in general, been a poor one, in that inadequate rains in late summer and autumn were followed by a very severe winter. Reasonable rains in spring gave rise to hopes of a good season, but these were followed by a hot dry windy period, which burned up the pastures to an alarming extent. This resulted in the stock showing very poor condition by midsummer and should good rains not be received early in 1952 to assist in the new season's growth, the outlook for the coming winter must be pessimistic in the extreme. The biennial livestock census figures for 1951, reveals that the cattle industry is suffering as a result of increases of donkeys (10,000) and goats (28,000). The number of cattle, in spite of imports exceeding exports by 6,000 during the period, has been reduced by 30,000. Livestock sales were held at Leribe, Maseru, Mafeteng and Mochale's Hoek during the period under review, but were in the main disappointing.

(2) *Hides and Skins*. Hide and skin values in the Union which, heretofore, had been the principal Basutoland market for these products, are controlled at a figure well below world parity. An arrangement was reached with the Union Government during the year whereby Basutoland hides and skins may be exported, in bond, for shipment overseas. This arrangement was a necessary prerequisite to the development of a shade dried hide industry, in order to obtain a premium, unobtainable in the Union, sufficiently large to make shade drying worthwhile. A limited liability Company is being formed to handle these hides, which are to be known in the trade as "Maluti" Hides, and legislation has been prepared whereby any hides which do not fall into the "Maluti" category will be subject to an export tax. Overseas reports on "Maluti" Hides have been good, with a corresponding premium over the value of ordinary hides.

(3) *Experimental Work.* The work with the Inkone herd — a long term project, the aim of which is to re-establish an indigenous milk breed continues. The severe winter made it possible to reduce numbers to 102 head, culling being on the basis of milk production and hardiness. The first calves from the first two bulls bred on the scheme were dropped at the latter end of the year.

(4) *Sheep and Wool.* The season was not satisfactory for the sheep farmer, from the point of view of mortality. This is reflected in the very high figure (193,728 units) for sheep and goat skins exported. The dosing of sheep and goats against internal parasites was carried out as a normal departmental function. 730 merino rams were purchased from merino breeders in the Union and resold to Basuto flock owners.

The sales of wool, the major export from Basutoland, were again satisfactory, an average price of 60*d.* for all types being obtained at the coast for the year. (8,814,024 lbs of wool were exported; value £2,203,506 at the coast). On account of the prevalence of theft the proportion of short wool shorn showed a considerable increase. The present favourable prices for Basutoland wool are largely the result of the policy of wool improvement which has been followed by Government since 1937. Before then wool was not classed, all types being mixed up and sold together in the same lot under the name "Basutoland". The market price of this product was, of course, poor and in times of depression it could not be sold at all.

The Government classing scheme was then introduced whereby wool was sorted into a series of different classes under the supervision of qualified wool sorters. Flock owners were also taught a simple method of wool classing, which they could follow without supervision. At the same time the type of sheep has been steadily improved by the castration of locally bred rams of undesirable type, and the introduction of pure-bred merino rams which were re-sold to flock owners below cost price. A total of 10,513 merino rams have been imported since the inception of the scheme. As a result of these measures and of the construction of wool sheds for shearing and classing, the comparative value of Basutoland wool has risen steadily.

On account of the shortage of corrugated iron it was not possible to proceed with the programme of wool shed construction which had been planned for the year. At the end of the year, however, a quantity of iron arrived which will enable a



—full programme of building to be carried out in 1952. During the year the Basutoland Council accepted the suggestion that the amount of export tax should be reviewed monthly and revised according to the value of wool and mohair.

(5) *Angora Goats and Mohair*. In pursuance of the policy improvement, in February 150 rams of good breeding were introduced into the Territory. Arrangements have been made with the South African Mohair Growers' Association whereby future supplies of goat rams are assured.

The matter of uniformity of classing standards for both wool and mohair is one of considerable importance, and to this end legislation covering the "get up" of wool has been revised, and mohair standards laid down. A cadre of mohair classers has been trained in Basutoland with the assistance of a Union Government expert in this subject. 1,242,376 lbs. of mohair (value £243,300 at the coast) was exported during the year.

(6) *Equines*. Considerable discussion has taken place concerning the deterioration of the Basuto pony, and it is thought that this is due to two factors — a lowering of nutritional standards on account of overstocking generally, and the steady influx of low standard Thoroughbred type horses from the Union. The question of re-establishment of the Basuto pony has been discussed with breeding experts from the Union, who consider that the introduction of fresh blood of Arab or other pony breed need not be considered, and that a Basuto pony stud should be established from ponies of good type which are still to be found in more remote mountain areas.

#### SECTION IV

### VETERINARY

18. The year under review saw the commencement of the scheme to train African Veterinary Assistants which was started at Botšabelo in September. This is the first step towards the establishment of an adequate and well trained veterinary Staff. For this purpose twelve Assistant Demonstrators who have shown an interest in Veterinary work have been selected.

The purpose of the Course, which will be of twelve months duration, is to train Africans in elementary Veterinary Science and

Animal Husbandry. On completion of the Course the students will be able to carry out simple operations and treatments and to recognize common diseases. More important, however, is that they will be able to undertake post mortem examinations, submit specimens, put into operation disease control methods, and advise their people in matters pertaining to the care, breeding and feeding of livestock, and the preparation of livestock products.

All the work at the clinic is now carried out by them under the supervision of the Acting Principal Veterinary Officer, and the two Veterinary Assistants, and is sufficiently diverse to ensure a thorough grounding in slaughtering, preparation of hides, bleeding, inoculations, dosing, simple operations and disease diagnosis, including the collection of specimens and blood slides.

### ANIMAL HEALTH

19. No major outbreaks of disease occurred during the year under review, but sporadic outbreaks of Anthrax and Quarter Evil were encountered.

### DISEASE CONTROL

20. *Smears.* A total of 51 smears was examined during the year. The results of the smears examined were as follows :

Negative	20
Redwater	9
Anaplasmosis	10
Biliary Horse	1
"    Dog	1
Anthrax	4
Quarter Evil	2
Useless	4
	<hr/>
	51.

### SCHEDULED DISEASES

21. (1) *Anthrax.* There were three outbreaks of anthrax during the year :

29. 10. 51 Lithabaneng — Maseru — 1 death

8. 11. 51 Marallaneng — Butha-Buthe — 7 deaths

10. 12. 51 Thekos — Maseru — 6 deaths,

In the latter outbreak the meat of a dead ox was transported on donkeys, as a result of which five donkeys died. As the fifth donkey died of anthrax, it is reasonable to assume that the ox succumbed to that disease. Expeditious general inoculation was used in all outbreaks to prevent spread.

(2) *Quarter Evil*. Forty-two outbreaks occurred during the year, but prompt use of vaccine prevented heavy losses. From the amount of vaccine bought by the stockowners it is apparent that the disease is widespread throughout the Territory.

(3) *Tuberculosis*. One case of generalized tuberculosis was encountered. This appears to be the first case reported for many years, so tuberculosis is apparently not prevalent.

(4) *Mange in Equines and Cattle*. Mange has increased to such an extent over the past years that to combat it with any hope of success a simultaneous territorial campaign has become a necessity. It has been decided to postpone this campaign until Veterinary Assistants and Dip Tank Supervisors are available. In the meantime the disease will be controlled as far as possible by the treatment of individual stock.

(5) *Contagious Abortion*. Not encountered.

## NON - SCHEDULED DISEASES

22. (1) *Anaplasmosis and Piroplasmosis*. Both gallsickness and redwater appear to be on the increase, which is to be expected from the prevalence of ticks. Some cases of redwater have appeared in the peracute form, as a result of which the owner has been led to suspect the presence of anthrax. Some form of tick control, preferably by spraying with B.H.C. insecticides, will have to be considered in the near future. In addition to the transmission of these two diseases, the blue tick does an immense amount of harm through its sucking blood from animals already low in condition as a result of undernutrition.

(2) *Strangles*. This is endemic throughout Basutoland, but occurs normally in its benign form, with the result that losses

GRAZING CONTROL

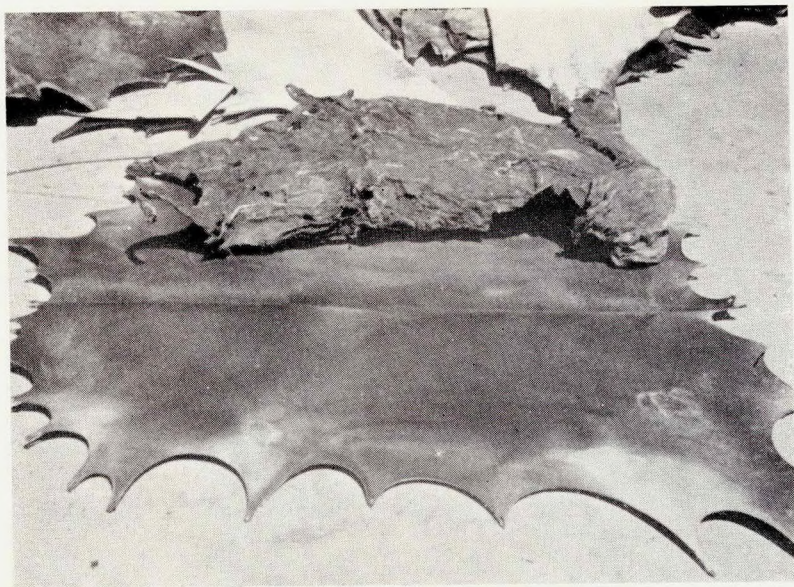


Before treatment. Overgrazed pasture showing pure stand of Bitter Karroo bush. (Sehalahala)



After treatment. Good grazing, *Themeda triandra* predominant. (Rooigras)

## HIDE IMPROVEMENT



A comparison shewing a badly damaged un-dried hide and a well-prepared "Maluti" hide



Despatching "Maluti" hides from Maseru Station

SOIL CONSERVATION, TREATMENT OF DONGAS



Dam in donga to conserve water supplies



Poplars tree plantation in donga

SOIL CONSERVATION IN MOUNTAIN AREAS



Construction of a diversion furrow



Well-established grass strips (Butter strips)

from this disease have not been severe. Treatment with Soluseptasine intravenously usually effects a rapid cure.

(3) *Biliary Fever*. Has been diagnosed in horses and is very prevalent in dogs. Treatment of dogs with Phenamidine effects a rapid cure, but the treatment of horses with this drug and Pirevan has not been entirely successful. Babesan which has been used recently appears a more effective drug.

(4) *Verminosis*. Observations have proved that worm infestation in sheep, horses and calves is prevalent throughout the Territory. Routine dosing of small stock has been carried out for many years with various remedies, but, probably owing to the human factor, has not been entirely successful. An experiment will shortly be carried out to determine the efficacy of different remedies available, and at the same time a survey will be conducted to determine which internal parasites are most prevalent.

(5) *Plant Poisoning*. Various cases of poisoning by tulp have been reported, but losses do not appear to have been severe. *Senecio* species, on the other hand, continue to take their toll of horses, especially imported and lowland horses sent into the mountains. As it is impracticable to eradicate this plant pest, whose prevalence appears to be one of the concomitant evils of overstocking, the only solution to the problem is to keep imported and lowland bred horses away from the mountains.

(6) *Bluetongue and Horsesickness*. These diseases were not reported.

(7) *Poultry Diseases*. Fowl Typhoid, Fowl Pox, and B.W.D. appear to be prevalent. Vaccine is used. Coccidiosis, Neurolymphomatosis and Lymphoid Leucosis have been diagnosed on several occasions.

(8) *Clinic*. The Clinic has been kept busy dealing with castrations, minor operations, dystokia, wounds, distemper and biliary of dogs and feline enteritis.

23. Statistics relating to Animal Husbandry and the work of the Veterinary Division are given in Appendix III.



## Legislation

24. Four Proclamations were drafted during the year, but have as yet not been finalised.

- (a) Importation and Export of Livestock,
- (b) Registration of Veterinary Surgeons,
- (c) The imposition of an Export Levy on Hides and Skins.
- (d) Wool and Mohair Export Regulations.

## SECTION V

### SOIL CONSERVATION WORK

25. (1) It is the policy of the Department to improve the agriculture of the Territory so that more food and cash crops can be produced. It is, therefore, vitally important that the soil, which has already been seriously eroded, should be conserved. A further free grant from Colonial Development and Welfare Funds has been made to supplement the grant on which the work has been in progress for the last five years D. 603B. This has enabled the existing programme to be speeded up and, in addition, other works related to soil conservation have been commenced. The supplementary scheme includes the appointment of nine Development Officers, on contract, to assist the Agricultural and Livestock Officer in the Districts with additional direct conservation measures such as donga demarcation and other matters such as branding and registration of livestock, stock limitation and grazing control, which have less direct application to the problem of soil conservation, but which are all part and parcel of conservation of natural resources.

(2) The maintenance of soil conservation works, particularly terraces in the Lowlands, is a matter of fundamental importance, and one which becomes more important yearly. The normal procedure is for maintenance to be carried out by the Department for a year after terrace banks have been constructed; thereafter it is the responsibility of the land occupier. Although provision has been made for penalties to be enforced by the Native Authority for lack of maintenance, the Basuto are by

and large apathetic, and many chiefs are slow in applying the necessary sanctions against the delinquents.

(3) In view of the fact that arable land is in the gift of the Paramount Chief, and that his authority is delegated to Chiefs and village headmen, a personal interest in the use of land within their jurisdiction must be taken not only by the users of land but by the Native Authority if the position is to improve. It was decided to introduce a pecuniary interest for those in authority to bring to book cases of mis-use of land. For a trial period, therefore, an addition has been made to the Laws of Lerotholi which allows a Chief or village headman to claim a "witness fee" of 10s. for each convicted case of land mis-use which he brings to the Native Court, this fee being an additional fine on the offender.

### **Weather Conditions**

26. Climatic conditions have again been unfavourable. The first spring rains did not fall until 22nd of October 1950 and exceptionally dry conditions persisted until the middle of December 1950. More than half the summer rainfall was recorded between the last week in December and the middle of February. These storms did considerable damage in certain areas to the new conservation works, and some of the old work was also damaged. The storms were followed by a virtual drought lasting six months during which only  $3\frac{1}{2}$  inches of rain were recorded. On 27th October abnormal rains throughout the four northern Districts again caused considerable damage, 9 inches of rain being recorded during an afternoon in one locality. These abnormally severe conditions put a heavy strain on plant and equipment, and, in the mountain areas, retarded buffer strip work. The period of frost was exceptionally long, starting early in May, 1951.

27. The two Schemes — No. D. 603A and D. 603B now in operation form a general programme for the conservation of the natural resources of the Territory. They have, therefore, for administrative reasons been operated as one.

## Scheme D. 603A : Work Done

(1) The progress made in the principal sections of the work is summarised in Appendix IV.

(2) *Lowland Terraces.* 21,564 acres have been terraced at a total cost of £19,584 which includes Foremen's salaries, running cost of tractors and vehicles, and the cost of repairs to tractors, graders and trucks. This represents an average cost of 18.1s. per acre which is 6.8s. per acre more than in previous years.

The increase in cost is due to :

- (a) increased cost of labour,
- (b) heavy repair costs to tractors.
- (c) the change over to the new District boundaries which necessitated the complete reorganization of staff,
- (d) during January, February, March and November very little new work was done as all gangs were occupied on repair work which was caused by the storms referred to above, and,
- (e) more time was spent on dam construction.

1,223,815 cubic yards of earth were put into the 2,124,726 yards of terrace bank. This represents an average cost of 1.5s. per 10 cubic yards, or 8.6s. per 100 linear yards. Some of the Foremen became alarmed at the breaks and reverted to the old system of heavier banks.

(3) *Diversion Furrows.* Except in the Butha-Buthe and Leribe Districts during the later part of the year, the people have been unwilling to undertake this work. Several reasons have been advanced for this :

- (a) The scale of pay is said to be too low. Few of the Basuto have realized that as the result of an amendment to the Laws of Lerotholi payment for this work virtually amounts to a gift, as each land owner is now required to protect his land against erosion, as advised by the Agricultural Officer. In spite of this fact, there has been little progress.
- (b) The problem of silting and maintenance. In certain areas, diversion furrows which have been placed below overgrazed and denuded mountain slopes silted up badly, and required cleaning out frequently. An addition

to the Laws of Lerotholi requires every land owner whose land is below a diversion furrow to maintain his section of the furrow. It appears that some Basuto farmers prefer to pay a fine to cleaning out the furrows protecting their fields.

A total of 257,060 yards of diversion furrows were constructed and working on the basis that 100 yards of furrow will protect 4 acres of land, the area thus protected is 10,282 acres. The total amount expended on this work was £2,775 which works out at 5·4s. per acre or 22s. per 100 yards.

(4) *Buffer Strips.* Very good progress has been made with this work. The total area stripped was 41,958 acres, representing 13,119,369 yards of strips at a total cost of £3,094 or 1·4s. per acre excluding supervision. These strips are showing up very well and in most areas where the people have adhered to the correct minimum width of 6ft they are well grassed, and are proving effective. Marking of strips in the foothills has progressed very well. In one District, teams of mules are being tried in place of oxen as it has been impossible to purchase oxen at a reasonable price. To speed up work in the foothills and lowlands a Ferguson tractor hauling two ploughs six feet apart will be used.

(5) *Dam Construction.* With the acquisition of three hydraulic scrapers, (one of 5 cubic yards and two of 4 cubic yards capacity) the work of dam making has been considerably speeded up. 33 dams were completed with a total capacity of 96,000,000 gallons of water, the total cost was £1,428 for the 66,000 cubic yards of earth moved, i.e. 4·3s. per 10 cubic yards or 0·3s. per 1,000 gallons. The total capacity of the 335 dams now completed amounts to 612,000,000 gallons or approximately 2,250 acre feet of water.

(6) *Tree Planting.* This phase of the work is being gradually taken over by the National Treasury. Work by the conservation staff was restricted to the planting of willows and poplars in the vicinity of dams which had been fenced. 10,242 trees were planted at a total cost of £170.

(7) *Grass Planting.* The period under review was unfavourable for grass planting. £585 was spent on this work. Many of the

old dongas planted up to *kikuyu* grass are now useful winter grazing reserves.

(8) *Grass Spillways and Meadow Strips*. The recent seasons of erratic rainfall have not been favourable to grass spillways. The grasses tend to get flooded in the wet season and then die out during the long dry spells. It has also been found that cattle are prone to use the spillways as paths into the dongas, and this in turn causes scouring and erosion. Spillways should become more efficient when dongas have been beacons off and protected from grazing during the summer months. £84 has been spent on six new spillways.

(9) *Stone Spillways and Weirs*. A large stone weir was constructed across the Tšakholo donga, and was washed away on 7th December 1950. In the light of experience gained at Tšakholo it has been decided not to attempt any more large stone structures, as conditions are generally unfavourable for masonry construction. Small stone weirs, however, have proved satisfactory.

(10) *Beaconing of Dongas*. Part of this work was financed from this scheme (D. 603A) but in areas where the new Development Officers were stationed all costs were met from Scheme D. 603B.

Approximately 156 miles of donga were marked with white-washed beacons in the Maseru and Peka Districts under this Scheme, the total cost being £92. By and large, this work has been going satisfactorily, and the owners of land who plough fields adjoining the dongas have respected the beacons. There have been complaints from a few cultivators that they are losing some of their land, but when it is pointed out that these dongas will provide valuable grazing at a later stage, they become reconciled to the measure. Due to the exceptionally dry spring it has been found difficult to keep stock out of these beacons dongas, as in some areas the dongas provide the only grazing.

### Plant and Machinery

28. The new plant received during the year was provided from Scheme D. 603B. With the arrival of new machinery it was possible

to withdraw some of the original tractors for complete overhaul. All tractors have been given regular service inspection by the South African agents. After a 2 months' trial of a two-wheeled terracer it was found unsuitable for Basutoland conditions, and was returned to the agents.

### **Oxen**

29. Few replacements were made during the year on account of the abnormally high price of oxen. This resulted in some gangs working under strength. Feed has been scarce and expensive, £502 being spent on forage. Several oxen died of debility and exposure in spite of supplementary feeding.

### **Transport**

30. No new vehicles were purchased under Scheme D. 603A

### **Staff**

31. Three African pupil apprentices are showing promise and consideration will be given, in the near future, to their appointment as Conservation Foremen.

### **Maintenance**

32. From 1st April 1950 the Native Authority took over full responsibility for this work in all areas where it has been completed and where it has been handed over to them officially. Maintenance men and Maintenance Supervisors are under the direct supervision of the Native Authority and are paid by the National Treasury. Steps are being taken to ensure close co-operation between the maintenance staff of the Native Authority and the Officers of the Department as without close liaison and a common policy this vital work of maintenance will not be properly carried out. £3,000 from Native Authority funds was spent on maintenance work during the period.

## SCHEME D. 603B

33. Expenditure under this scheme may be conveniently divided into three sections :

(A) The demarcation of dongas and watercourses and the construction of dams.

(B) (a) The speeding up and extension of the existing soil conservation programme ;

(b) the laying down of conservation areas and the conducting of run-off experiments.

(C) The provision of four European Development Officers and their equipment, and the equipment for an additional five African Development Officers, who are to be paid from local funds.

Formal approval for the Scheme was received on 26th September 1950, and the task of obtaining staff, equipment and machinery was commenced forthwith. Both proved far more difficult than was originally envisaged, for reasons beyond local control. Due to the deteriorating international situation there were long delays in obtaining machinery and equipment both from the United States of America and from the United Kingdom. Furthermore, difficulty was experienced in recruiting suitable staff locally. For these reasons the only work undertaken under this Scheme was the demarcation of dongas (Section A) and the supervision of the erection of crush pens (Section C).

### Work done during the year

34.(i)*Demarcation of Dongas and Watercourses.* The commencement of this work was delayed until May 1951 to allow the Paramount Chief to explain the aims and objects of the work to the Native Administration. Patience and careful explanation have paid handsome dividends, as the work has progressed very satisfactorily, and without real objection from the people.

The work was started by using the existing soil conservation gangs in areas which were to be contoured during the following six months. This was done so that the construction gangs would be following up the work of demarcation. By this means, additional supervision was made available without cost, and trained staff was available to explain the new measures to the people on occasions when they appeared not to have grasped the reasons for the work. As the closing to cultivation of areas contiguous to dongas and water-courses

**Collection Number: AD1715**

**SOUTH AFRICAN INSTITUTE OF RACE RELATIONS (SAIRR), 1892-1974**

**PUBLISHER:**

*Collection Funder:- Atlantic Philanthropies Foundation*

*Publisher:- Historical Papers Research Archive*

*Location:- Johannesburg*

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