

Paper No. 26.

THE SCAB PROBLEM IN THE UNION.

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1. INTRODUCTION.

SCAB is one of the oldest diseases known in South Africa and has perhaps been longest under State control. It was heard of first in 1693, when the then Governor of the Cape, Simon v. d. Stel, issued a proclamation, containing certain measures that had to be taken in connection with outbreaks of the disease.

From the earliest days of settlement in this country and throughout the history of the four provinces now constituting the Union, scab loomed very largely as one of the most important and difficult disease problems that had to be faced.

Needless to say, a tremendous amount of legislation in connection with the control of this disease has seen the light of day, and, what is more important, a great deal of money (amounting probably to several million sterling) has been spent on its eradication. That this vast expenditure has been justified can, I think, be accepted, since there is very little doubt that the important sheep and wool industry in the Union would not have become established in the *presence of scab*. A parasitic skin disease like scab is, of course, very inimical to wool production, as every sheep farmer knows to his cost; the ill-effects on the sheep and its wool are not solely due to the parasites, but are also caused largely by the frequent immersions in scab-destroying fluids which infected flocks have to undergo.

The economic losses resulting from scab invasion are, therefore, of such great importance that the State must take every precaution against the introduction of the disease in sheep areas. In order to do this effectively, all sources of infection must be traced and destroyed as soon as possible.

What is of particular interest to us Veterinarians is that in the Union, up to 1924, all scab eradication measures were in the hands of laymen. It is not my intention to reflect in any way on previous administrations; I have no doubt that everybody concerned with the work did his utmost to achieve success, but it stands to reason that without a thorough scientific knowledge of the disease, the persons concerned must have worked under a severe handicap.

To give only a brief illustration of what transpired, I may point to the fact that goat scab (sarcoptic infection) was being dealt with under the Scab Regulations, while sarcoptic infection of other domestic animals did not receive any attention.

In the Union all three forms of sheep and goat scab, namely, sarcoptic, psoroptic and symbiotic, are dealt with under the Stock Diseases Act and come under the definition of "Scab."

2. ORGANIZATION.

Scab now falls under the control of this Division, and for its eradication the whole Veterinary organization of the Union is available. For purposes of Veterinary administration the whole Union is

divided into five circles, each of which is controlled by a Senior Veterinary Officer. Under him come, in the order of their status and seniority:—

- (a) District Veterinary Officers and Senior Sheep Inspectors.
- (b) Stock and Sheep Inspectors.
- (c) Assistant Stock or Dipping Inspectors.

Formerly our Veterinary Staff had nothing to do with scab matters, the field work being in charge of Senior Sheep Inspectors and Sheep Inspectors.

Recently the Senior Sheep Inspectors have been replaced gradually by Veterinary Officers and, in a few years time all the scab work will be under the control of Veterinarians.

Sheep Inspectors are stationed in all parts of the Union, particularly in sheep areas and districts where scab is still to be found.

In East Coast fever areas we employ a very large lay staff and they are now also required to assist in scab eradication work.

To show the magnitude of our field inspection organization, I may mention that we employ about 750 European lay inspectors.

DIAGNOSIS.

In the case of Scab again, we have to accept the principle that *diagnosis* of the disease must come before anything else. The causal parasites are not difficult to destroy, either on or off the sheep, and hence for the eradication of Scab the all-important thing to do is to locate and trace all sources of infection.

This, however, has been a difficult matter, in spite of the fact that we employ an army of inspectors for the purpose. The difficulties may be explained briefly as follows:—

- (a) *Carelessness, neglect or ignorance of owners.*—In long-woolled sheep, Scab is easy to recognize, especially when the animals are observed frequently. The careful sheep farmer will see his flocks almost daily and will soon detect anything wrong. The responsibility of recognizing Scab and reporting the fact immediately is thrown on to the owner; our Stock Diseases Act provides for severe penalties in cases where the presence of Scab is not reported.

In spite of these provisions, failure to report Scab is of frequent occurrence. Native owners, mostly through ignorance, are very often to blame.

- (b) *Flocks of little value.*—Owners do not take Scab seriously, when their flocks are of low value and not much economic loss is suffered through the presence of the disease.

This is the case with common native sheep in which the disease may not produce any serious disturbances, unless it is widespread and of old standing. In our valuable Merino flocks, Scab will not be tolerated and there is little danger of owners not detecting and reporting the presence of the disease.

- (c) In some sheep the disease is not easy to diagnose. This is especially the case in non-woolled sheep, particularly kaffir sheep. In such animals the disease very often develops slowly, and it may take several months before well-marked lesions are discernible.

With Merino rams one has to exercise the greatest care in the examination for Scab, since the lesions are often hidden between the folds of skin, at the base of the horns, etc.

- (d) Owing to carelessness on the part of inspectors, Scab may be missed. This is not of such infrequent occurrence where a large staff is employed.

It is true there are Senior Inspectors to check the work of Area Inspectors, but, even so, it is not possible to see that no mistakes are made.

Very often failure to detect Scab is due to all sheep not being inspected. Owners commonly fail to produce all sheep for inspection.

Since correct diagnosis and location of infection are so important in this case, we have, during the past few years, employed a specially selected staff of so-called "Check Inspectors." These Inspectors are used in different parts of the country to check the work of local Inspectors; they are required to examine carefully every sheep or goat in the selected area in the shortest possible time. By these means it is possible to determine the true position and to ascertain whether or not any centres of infection remain in a supposedly "clean area."

4. POSITION OF SCAB IN THE UNION.

That good progress in the eradication of Scab has been made during recent years will be seen in the table on page 12.

It will be seen that the percentage infection has gradually been reduced from 6.88 in 1922 to 0.81 in 1928.

One of the four Provinces (O.F.S.) is for all practical purposes free of Scab, the small percentage infection appearing in the table being due to accidental introductions of infection from elsewhere. The position in the Transvaal and Natal is also very favourable, the small percentage infection still present being found largely in native areas.

The average infection for the whole Cape Province works out at 1.12 per cent., and this is rather unsatisfactory. The main reason why more progress has not been made there is that a large portion of the Cape is subject to severe droughts; during the past few years unprecedented droughts have prevailed, with the result that no dipping could be carried out and the flocks, whether infected or not, had to be moved from one place to another in search of grazing.

5. METHODS OF ERADICATION.

These may be summarized as follows:—

- (a) Regular inspection of flocks with a view to detecting any centres of infection not reported by the owners.
- (b) Cleansing of infected flocks.
- (c) Prevention of spread of the infection.
- (d) Protection of clean areas.

(a) The importance of diagnosis and the detection of centres of infection has been emphasized. I need only point out again that it would be useless eradicating the disease in one place if undetected centres of infection were left in other places.

RETURN OF SCAB IN THE UNION DURING THE PERIOD
30/6/21 TO 20/6/28.

Total Infected Flocks with Percentages of Infection.

	1922.	1923.	1924.	1925.	1926.	1927.	1928.
Cape.....	5,321	4,419	3,160	2,701	2,700	2,616	1,997
Bechuanaland.....	828	559	377	721	474	161	260
Transkei.....	2,276	2,611	1,089	3,594	3,480	1,693	1,135
Transvaal.....	4,666	4,601	2,816	1,547	2,731	867	1,307
Natal.....	1,421	1,532	1,252	1,813	1,789	1,300	876
Orange Free State..	1,079	593	290	90	17	30	41
UNION.....	15,591	14,315	8,984	10,466	11,191	6,667	5,616

(b) *Cleansing of Infected Flocks.*—Very little need be said under this heading, since the curing of infected animals offers very little difficulty, with rare exceptions. Most of the sheep dips on the market will effect a cure, provided the dip itself is made up correctly and each animal is dipped carefully. In our Laboratory experiments cures have always been effected without any special treatment, such as hand-dressing of scabby parts. In practice, however, it has been found necessary to break down and dress affected parts carefully before the sheep undergoes the ordinary immersion in the tank-fluid. Inaccessible parts, such as the inside of the ears, base of the horns, folds of skin, etc., have to receive special treatment.

Although most well-known sheep dips have been proved experimentally to be effective Scab-curing agents, experience in the Union has shown that a lime and sulphur dip is the most satisfactory from every point of view. This being the case, it was decided some few months ago to discontinue the use of other sheep dips in actually infected flocks which our officers are called upon to cleanse.

Apart from the cleansing of individual flocks, our regulations make provision for the simultaneous compulsory dipping of all small stock in any area proclaimed for the purpose by the Minister. This compulsory dipping is usually carried out in areas where the Scab position is unsatisfactory or uncertain. If applied with great care, especially in regard to the most suitable time for dipping, this method gives excellent results. Provided all small stock in a given area are carefully dipped within a fixed period, Scab is almost certain to be eradicated. All sheep in such an area are placed in quarantine during that period and no movements in or out of the area are allowed.

Compulsory dipping is of special value in native areas where it is not easy to ensure regular inspection of all small stock. During the compulsory dipping period every effort is made to bring every head of small stock to the dipping-tank, native police being employed to patrol the area and search native kraals, etc., while dipping is going on. At the dipping-tank a careful inspection of the stock is made, with a view to detecting Scab and submitting infected animals to special treatment.

(c) *Prevention of Spread.*—Infected flocks are placed in strict quarantine until the disease has been cured completely. Formerly the quarantine was raised soon after the second dipping, but this is no longer allowed; we now require a further detailed inspection about a month or so after the last dipping, and if no sign of Scab is present the question of raising the quarantine is considered. The period of quarantine depends largely on the extent or degree of the original infection; if it is a bad outbreak of Scab, involving many animals and with well-developed lesions, the quarantine will be kept on for several months.

Apart from the quarantine placed on individual farms, we also have power under our regulations to impose restrictions on whole areas of country. This is done in cases where the Scab position is uncertain and from where consequently there is danger of infection being spread to clean areas. No movement out of such areas is allowed, excepting under permit and after the sheep had undergone two dippings.

(d) *Protection of Scab-free Areas.*—Having eradicated Scab from certain parts of the country, it is essential to take steps to prevent

the reintroduction of the disease. Since infected animals provide almost the sole means of spreading infection, it follows that protective measures have to be taken against the introduction into clean areas of small stock that may be infected.

Such protective measures are provided for in our Scab Regulations, and for some years past it has been the practice to apply these measures to "clean" areas which are officially declared "Protected" or "Semi-protected." The main protective measure is contained in the provision that no small stock can enter such areas from non-protected areas, except under permit and subject to two dippings.

In the protected areas no dipping of small stock is allowed, except under supervision by one of our Inspectors.

Although these measures are sound in principle, some of our protected areas unfortunately have been, and are still, infected with Scab.

Under the regulations movement of stock from one protected area to another is permissible, and hence if the one should be infected, it may also endanger the other. In this way the good effects of this measure may be neutralized.

6. DIFFICULTIES ENCOUNTERED IN THE ERADICATION OF SCAB

Since Scab admittedly is an easy disease to eradicate from a flock of sheep, it is reasonable to inquire why more rapid progress in its complete eradication from the Union has not been made. There are undoubtedly many difficulties in the way of complete success, but, in a few words, it can be stated that the persistence of *the disease is due to reintroduction of infection from areas not yet clean*. The greater part of the Union has been freed from Scab, but, while centres of infection still remain either in the Union or adjoining territories, complete success will not be achieved. As far as the Union is concerned, it may be stated that all the best sheep districts are free from the disease, but that the chief centres of infection exist in (a) non-sheep farming areas, and (b) in certain drought-stricken districts. As regards the former, I have already referred to the difficulty of detecting Scab in non-woolled sheep and the small interest taken in them by their owners. This refers very specially to native owners who, when they suffer practically no direct loss from the disease, cannot appreciate its seriousness. Even natives will, however, take notice of Scab, when they farm with better sheep and experience the economic losses caused by the disease. This point is well illustrated in the case of Basutoland and the Transkeian Territories, where during recent years the natives have acquired Merino sheep and are now quite willing to assist in combating Scab.

Scab infection is commonly spread from essentially non-sheep districts to sheep areas by "trek" animals. In certain parts of the Union it is (unfortunately for us) still the common practice for sheep farmers to trek for winter grazing to the low veld. Here their sheep come in contact with infected flocks and in this way the disease is carried back to the clean sheep areas.

As far as drought conditions are concerned, it is well known that certain districts in the Cape are almost continuously drought-stricken. In these areas sheep are constantly on the move in search of better grazing and, owing to their low condition, cannot be submitted to regular dipping. We are, therefore, forced to adopt a

waiting attitude and to apply cleansing measures when a favourable opportunity presents itself. Unfortunately during the past few years the drought conditions have been so severe in the Cape that small stock had to be moved very far afield for grazing, even to our Scab-free districts.

With regard to future policy, we intend to press home the advantage we hold and to make every effort to achieve complete success within the next few years.

Our efforts will be concentrated in locating centres of infection and in applying measures for the prevention of reinfection of clean areas.

The regulations affecting protected areas are being tightened up considerably, and in addition we contemplate taking steps to apply still further protective measures in the case of provinces or districts that are absolutely free of the disease. Such definitely clean areas will gradually be extended until they take in all the sheep districts of the Union.

Active steps will also be taken to eliminate all centres of infection in non-sheep areas, especially among native sheep.

We rely on our neighbours to launch a big campaign against Scab in their territories, so that in this way all sources of infection from our borders will also be removed.

Paper No. 27.

GOAT SKINS AND THE CONDITIONS WHICH DETRIMENTALLY AFFECT THEIR ECONOMIC VALUE.

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I HAVE considered it advisable to change the title of this paper from "The Skin Diseases of Goats and Their Importance to an Export Trade in Skins" to "Goat Skins and the Conditions which Detrimentally Affect their Economic Value," as the former title did not include bad flaying and drying which is after all responsible for the great majority of damaged skins.

For many years past glacé kid manufacturers have been complaining bitterly about the large number of goat skins exported from Nigeria that show defects which detrimentally affect their economic value and have been advocating the introduction of some system of government control which would tend towards the betterment of this state of affairs.

About two years ago the Veterinary Department of Nigeria undertook the investigation of the causes of damaged skins, and the result of these investigations, incomplete as they are at present, fully justifies the complaints of the manufacturers and shows clearly the serious economic loss occasioned to all concerned in the trade by these defective skins.

I regret very much that my knowledge of the subject under discussion is so very incomplete, but I trust that the discussion which will follow will assist us in finding a practical method of cure or prevention of the skin diseases which are responsible for damage to glacé kid, as well as a system of control which will tend towards an improvement in the flaying and drying of skins.