

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.

I will treat the subject more from the economic point of view rather than the pathological, only touching on the symptoms of the various skin diseases in so far as they have a bearing on the blemishes shown on the manufactured skins.

Goat skins are used chiefly for the manufacture of glacé kid which in turn is used chiefly in the manufacture of high class ladies and gent.'s shoes.

There is at the present time an unsatisfied demand for sound goat skins of good quality in the English markets.

Nigerian goat skins of prime quality stand high in the estimation of the glacé kid manufacturers and are but little inferior in quality to the Java goat skins which command the highest price in the home markets.

Glacé kid manufacturers assert that 60 per cent. of the goat skins exported from Nigeria show damage from one cause or another and to a greater or lesser extent. There is no doubt that what pertains to Nigeria in this respect pertains also in some other territories of Africa.

It will be evident to you all, therefore, that in the remedying or in the reducing of this serious economic loss there exists for us a wide field of usefulness of the greatest value to our respective countries.

Before proceeding to detail the various causes of damaged skins it may be well that I should first of all give you some facts and figures that will cause you to realize the actual financial loss suffered by natives, exporters, and manufacturers alike by these skins.

Goat skins are exported from Nigeria in a sun-dried state in bundles containing roughly 200 and weighing between 1 $\frac{3}{4}$ -2 cwts. Each bundle bears a mark denoting the quality of the contained skins as follows:—

- “ Primes.”
- “ Firsts.”
- “ Seconds.”

A manufacturer usually buys skins in consignments containing so many bundles of “ primes,” “ firsts,” “ seconds ” and pays an average price for the lot.

An average consignment would contain about: 200 primes; 400 firsts; 400 seconds; and would cost at present roughly 3s. per lb.

“ *Primes* ” should be skins that are well flayed and properly dried, of good quality and free from all blemishes.

“ *Firsts* ” should be of good quality, but a bundle may contain a few showing but minor blemishes or knife cuts.

“ *Seconds* ” are expected to be a little inferior in quality but should at the same time show only minor blemishes and be properly dried.

The cost of primes is about 52 pence per lb.

The cost of firsts is about 39 to 40 pence per lb.

The cost of seconds is about 28 to 29 pence per lb.

The average weight of a good skin is about one pound and the average size about 4 square feet. The smallest 3 square feet and the largest 5 square feet.

On these figures a prime skin would cost the manufacturer to purchase 4s. 4d.; a first 3s. 3d. to 3s. 4d.; and a second 2s. 4d. to 2s. 5d. The cost of manufacture into glacé kid is sixpence per square

foot, so that a prime skin of average size converted into glacé kid would cost the manufacturer 6s. 6d., a first 5s. 3d. to 5s. 4d., and a second 4s. 4d. to 4s. 5d.

Glacé kid of good quality is sold at prices ranging from 2s. to 3s. per square foot; glacé kid showing damage would probably be sold at prices ranging from 7d. per square foot downwards.

Some skins are so badly damaged as to be completely worthless to the manufacturer and would constitute a loss to the extent of the purchase price of the skin and the cost of manufacture.

The present complaint of the manufacturers is that not only are so many otherwise good skins damaged by bad flaying and improper drying but so many bundles are not up to mark. As an instance of this I will quote extracts from a letter sent by an English glacé kid manufacturer to an exporter of skins from whom he purchased a consignment. The consignment in question consisted of 200 primes, 398 firsts, and 400 seconds.

“ We have counted every badly flayed skin and skins with other defects, and in the 200 primes we find: 20 skins badly flaycut and 30 skins less badly flayed which is 25 per cent. that should not be in this selection.

In the 398 firsts we find: 42 badly flaycut and 91 less badly flayed, i.e. 33 per cent of the selection.

In the 400 seconds there are 184 badly flaycut skins, i.e. 46 per cent.

Of course we expect indifferent flaying in these, (i.e. seconds) but what we want to hammer home is the fact that with nice-grained skins of this description every effort should be made by the Government, by the skin merchants, and by everybody else (concerned) to stamp out this damage to skins that can be avoided.

We must emphasize also the number of skins that fell into holes especially in the firsts and seconds; the cause being we should think, improper drying.

We also give you here the number of skins we found damaged by tick marks: primes, 60; firsts, 60; seconds, 80.”

The tick marks referred to in this letter were probably the defects caused by the lesions of the various skin diseases. As the manufacturer points out, we have a most valuable animal product of the country rendered of a much reduced value by bad flaying and drying and skin diseases.

There is no need to labour further the economic loss occasioned to Nigeria and in fact to other African Territories by these damaged skins; nor the necessity for the institution of a system of control which will tend to better this very unsatisfactory state of affairs.

It may be interest briefly to detail here the various stages of manufacture of goat skins into glacé kid:—

1. Soaked in clean water for 48 hours.
2. Put into lime pits and paddled for 6 days.
3. Hair and flesh scraped off by machinery.
4. Well washed in a revolving drum.
5. Put into a solution of Pancreol—(a patent proprietary preparation) in a revolving drum for 2 to 4 hours, according to the weight of the skins. (Pancreol is composed of pigs pancreas, ammonium chloride and sawdust.)

6. Thoroughly cleansed in a revolving drum of water.

7. Tanned by the two-bath process:

1st bath—bichromate of soda, 6 parts;
muriatic acid, $3\frac{1}{2}$ parts;

per 100 lb. of pelt for 6 hours.

The skins are then taken out and thrown over a wooden horse to drain until next day.

2nd bath—hyposulphite of soda, 16 to 18 per cent.;
muriatic acid, 7 to 9 per cent.

Skins when finished should have a blue colour.

8. Skins are laid up on piles to drain for 48 hours.

9. Put through a machine which squeezes out a good deal of the contained liquid and at the same time shaves the skin on the flesh side to a uniform thickness.

10. Dyed and fat liquored—(soap and oil).

11. Dried out in hot stoves.

12. Laid to cool off for 3 or 4 days.

13. Put into damp sawdust for a few hours and stacked on a machine to soften again.

14. Dried out again and seasoned with egg or blood albumen according to the colour required.

15. Glazed.

The skins are now sorted into grades and measured into square feet.

The process of manufacture into glacé kid imposes a severe strain on the tissues of the skin and readily shows up the weak spots.

A curious fact in this connection is that the native process of tanning into leather does not show up the blemishes caused by skin disease nor the blemishes caused by bad flaying and drying nearly to the same extent as does the manufacture into glacé kid, consequently a number of native-tanned skins are exported as of good quality, only to be proved on manufacture to be badly damaged.

Skins are damaged from two main causes:—

A. Bad flaying and improper drying.

B. Skin diseases.

BAD FLAYING AND IMPROPER DRYING.

According to glacé kid manufacturers at least 40 per cent. of the goat skins exported from Nigeria are either badly flayed or improperly dried.

Bad flaying is undoubtedly responsible for the large majority of damaged skins. A knife in the hands of a native butcher is a dangerous weapon and should not be used except to make a few initial and final cuts. The skin should be handdrawn from the carcass.

It facilitates handdrawing if air is forced into the subcutaneous tissue before flaying is commenced.

We have recently tried the use of a knife with a guard on the blade, but it was not given a fair trial as the steel of the blade was found too hard for the native to sharpen.

The skins should be so taken off as to be nearly square in shape. Specimens Nos. 1 and 2* are of the proper shape. Paper patterns Nos 1 and 2 also show this. Specimen No. 2 is a glacé kid showing the

* The specimens were demonstrated at the meeting and were afterwards handed over to Onderstepoort for permanent exhibition.

damage caused by knife cuts. You will notice on the grain surface the unglazed lines which correspond to the knife cuts on the flesh side.

A skin of this description is a dead loss to the manufacturer to the extent of the cost of the skin and the cost of manufacture. Bad flaying is not by any means confined to the African Territories.

A large sheepskin tanner in England recently informed me that in England alone £500,000 are lost annually through bad flaying. He asserted that fully 90 per cent. of the sheep skins coming into his factory from the slaughter houses showed knife cuts.

We must, therefore, be lenient with the native butcher until he has been taught the proper method of flaying and made to realize the importance of his not cutting the skin in the course of flaying.

IMPROPER DRYING.

All skins are exported from Nigeria in a sundried state.

Many skins are damaged through being too rapidly dried in a strong sun. Skins, after all fat has been removed, should be slowly dried in the shade. For preference skins should be stretched on a wooden frame; but on no account should any undue stretching be exerted on the skin, more especially in a head to tail direction, otherwise the skin will become wrinkled as in Photo 1. This wrinkling cannot be removed in the course of manufacture.

Before the skin is dried it is essential that all adherent fat be removed otherwise it will tend to run into the tissues of the skin and cause blotching of the glacé kid. It may also, by interfering with the proper drying of the skin, set up putrefaction, and result in serious damage to the glacé kid. A skin exposed to a strong sun dries on the surface only which forms a hard covering and leaves the centre of the skin moist. This moist centre then undergoes putrefaction which results in the skin falling into holes in the course of manufacture.

Specimen No. 3 is a very good example of a skin which has been dried rapidly in the sun.

You will notice that the skin has fallen into holes in certain parts due to the putrefaction of the piece of skin. In other parts you will notice that only the surface layer of skin has disappeared. This latter condition is produced, I imagine, by the gases formed as the result of putrefaction raising the surface layer of skin into blisters which burst and allow of the subsequent drying of the centre of the skin.

It is needless to say that such a skin as this is absolutely worthless to the manufacturer.

ADULTERATION.

Closely associated with bad flaying and drying is adulteration.

The present practice of the exporter to buy skins from the native by weight and not by piece is a direct incentive to the natives to rub dirt and dung into the skin and increase its weight and, if undetected, also its value.

Dirt and dung is also rubbed into the skin to hide knife cuts and disease blemishes, and this practice, I am very sorry to say, very often achieves its purpose.