

It has recently been suggested by the Glacé Kid Manufacturers' Association of England that skins should be bought from the native by piece and not by weight. If this suggestion is adopted by the export buyers in Nigeria it will effectually put an end to this fraudulent practice.

#### DAMAGE CAUSED BY SKIN DISEASES.

The diseases principally concerned, as far as my present knowledge goes, are: demodectic mange, streptothricosis, sarcoptic mange, goat pox.

*Demodectic Mange.*—I do not propose to do more than give a very brief description of the lesions of the various skin diseases, as they must all be familiar to you.

*Demodectic Mange* as it affects goats in Nigeria is a very insidious disease and unless in an advanced stage difficult of detection in the live animal.

There is little or no loss of hair and no appreciable amount of irritation, and it is only by the careful manipulation of the skin that the lesions can be detected. They are felt as small clearly circumscribed pea-sized nodules in the thickness of the skin. It is common to find several nodules closely set together in the same patch of skin and these groups to be situated in widely separated parts of the body.

It is only when the nodule has burst that any opening can be detected on the surface of the skin. When the nodule bursts it exudes a thick cheesy-like material which contains practically nothing but demodex.

The parasites are easily detected on microscopical examination of the pus.

When the skin is taken off the carcass the lesions are easily seen on the flesh side as pea-like projections.

Native butchers, appreciating the lessened monetary value of a diseased skin, puncture the nodules and rub the surface of the skin with a stone, or scrape it with a knife. After the skin has been sundried it is difficult to detect this faking, and for this reason such skins are sometimes included with primes and firsts quite unknowingly by the exporter.

I estimate that about 5 per cent. of all skins exported from Nigeria show the lesions or other evidence of demodectic mange.

Nigeria exports from one to one and a half million skins per annum; so the loss due to this one disease alone is considerable and the disease well worthy of our best efforts to find a cure or preventive.

*Specimen No. 4* shows clearly the blemishes caused by the lesions of demodectic mange. It shows also the grouping of the lesions and the situation of these groups in widely separated parts of the skin. Observe the pin-point holes on the grain side of the skin corresponding to the sites of the underlying pustules.

*Treatment and Prevention.*—I know of no form of treatment or prevention, and I am dubious of ever being able to cure the disease by the external application of parasiticide solutions.

I am wondering if it will be possible to immunize goats against the invasion of the parasites and the development of the pustules. I believe a form of metazoan immunity has been established against warbles in cattle. Why not a similar immunity against demodex?

This possible line of dealing with the disease appears to me to be worthy of investigation and I hope it will be possible to undertake some experimental work along these lines in Nigeria in the near future.

According to the distribution and extent of the lesions a skin is reduced in value.

A glacé kid of the type of specimen No. 4 would be worth from 6d. to 7d. per square foot. Just the cost of the manufacture of the raw skin into glacé kid. So that the manufacturer is still faced with a loss to the extent of the cost of the raw skin.

Such a skin may quite conceivably be included in a bundle of primes or firsts for which a price ranging from 3s. to 4s. may be paid. You will realize that the manufacturer has a perfectly legitimate grouse.

*Streptothricosis.*—This skin disease of goats is prevalent in Nigeria during the wet months of the year; but it appears to disappear spontaneously after the cessation of the rains.

The lesions are confined mainly to the skin of the back on either side of the spine. On running the fingers along the skin of an affected animal the lesions can be felt as very small, hard scabs. They are closely set together and are very numerous along the whole length of the back.

On closer inspection the lesions are easily seen as minute warty-like excrescences which are easily peeled off; leaving a raw shallow depression in the skin. The lesions are somewhat similar to those seen in streptothricosis of cattle. Microscopical examination of a scraping of the moist skin lesion or of the scab demonstrates the presence of a streptothrix—the causative factor. I regret that I am unable to show you a skin of glacé kid demonstrating the lesions of the disease or the blemishes they cause in the tanned skin.

The blemishes due to streptothricosis show on the glacé kid as minute shallow depressions which render the leather unsightly, and of a much reduced value varying with the extent of the disease.

*Curative and Preventive Measures.*—This disease, as I have said before, disappears spontaneously after the cessation of the rains. If the slaughter of goats, therefore, could be prevented during the wet months of the year the loss due to damaged skins from this cause could be eliminated. This procedure is of course impossible in Nigeria where goat flesh constitutes the main supply of the meat diet of the native; but I have hopes that it may be possible to institute a system of dipping in arsenical preparations before slaughter, which may do some good.

*Sarcoptic Mange.*—It is only recently that the possibility of the lesions of this disease being a cause of damage to glacé kid has been brought to light.

Specimen No. 5 is a glacé kid manufactured from a skin which showed extensive lesions of sarcoptic mange. You will notice how the grain of the glacé kid has been destroyed and the affected parts thickened and corrugated.

A skin of this description would be worthless to the manufacturer.

I am unable to say at present what is the actual incidence of the disease among goats in Nigeria, but I do know that when once the disease gets established in a herd of goats, more especially if the animals are in poor condition it spreads rapidly from goat to goat as

well as in the affected animal. It is just possible that the investigations now being carried out in Nigeria will bring out the fact that the disease exists in a chronic and macroscopically undetectable form, and that these chronic lesions are responsible for a type of blemish shown in many specimens of glacé kid which has not so far been definitely traced to any particular cause.

The type of blemish referred to is seen to a slight degree in specimen No. 6 which also shows slight damage from bad drying.

Experiments with various dipping solutions are now being tried in Nigeria with a view to finding an efficient curative and preventive measure. The preliminary experiments with a 1 to 250 solution of Coopers' cattle dip proved of no value either as a curative or as a preventive.

*Goat Pox.*—Although not a skin disease in the same sense as the others I have already dealt with, the lesions of goat pox are nevertheless a cause of serious damage to glacé kid.

Specimens Nos. 7 and 8 give you a good idea of the damage caused by the skin-vesicles of goat pox.

Specimen No. 7 is a skin only partially manufactured into glacé kid. It has been put through the first seven stages of manufacture into glacé kid (see process of manufacture). Specimen No. 8 is a complete glacé kid. The lesions would have shown up even more distinctly had the skin been dyed a light brown.

These two skins are a dead loss to the manufacturer to the extent of the cost of the skin and the cost of manufacture.

The lesions are not easy to detect on the hair side of a sundried raw skin. On the flesh side, however, they are seen as circumscribed areas of extravasated blood of a red, dark red or almost black colour.

The incidence of this disease in Nigeria is not correctly known at present but with the more intensive and extensive inspection of goats which we hope to establish, more detailed information on the incidence of this disease will be forthcoming.

A vaccine has been prepared at the laboratory; but its use in the field has not so far been attempted. Should, however, the incidence of the disease prove on further investigation to be of serious moment a large scale vaccination campaign will be inaugurated.

I have attempted to point out in this paper the extent of the damage to glacé kid from the various causes and the imperative necessity for a measure of Government control which would tend to lessen the serious economic loss due to these causes.

So great is the demand for Nigerian goat skins in the English and other markets that some exporters are perhaps at times tempted to include skins which are not up to the quality implied by the "mark," i.e., primes, firsts, etc.

Unless measures can be instituted which will give the home buyer a reasonable guarantee of quality they will cease to buy our Nigerian skins or at least pay the present prices.

The manufacturer must be given some guarantee of quality with each bale of skins.

#### PROPOSED SYSTEM OF CONTROL.

To begin with, it is essential that the butchers are taught how to flay and dry skin properly, and then are compelled by a system of control and inspection to carry out the improved methods.

Secondly, measures must be taken to endeavour to lessen the incidence of the skin diseases which are responsible for damage to the glacé kid.

A scheme for the education of the butchers is now in operation in Nigeria and is already responsible for an improvement in the flaying of the skins.

It is proposed to licence all butchers and to start a system of inspection of skins at the various places of slaughter throughout the country.

Native inspectors will be appointed who will under the supervision of European inspectors be responsible for the inspection and stamping of skins.

The inspector will stamp each skin with his own particular mark and in addition a mark indicating that the skin shows no knife cuts or disease lesions.

These marked skins will, as it is hoped, fetch a higher price in the local markets and by being exported in distinct bales fetch a higher price in the home and foreign markets.

The inspector will also see that the skins are properly dried at the place of slaughter.

It is also proposed that skins are bought by the piece and not as at present by the weight. This will control the fraudulent practice of rubbing dirt into the skin to increase the weight. As a further precautionary measure it is hoped to be able to make it illegal for a butcher or other native to adulterate the skins in this manner. This latter will be controlled at the place of purchase. By the aid of the inspector's own mark some idea of the place of origin of the skin will be given.

The home buyers are keenly enthusiastic in the scheme and are willing to co-operate with the Government in every way possible.

As I have brought out in this paper, it is not always easy for an exporter to detect all blemishes in a sundried skin, more especially when faking has been practised. It is to help him to differentiate between damaged and undamaged skins that the scheme has been evolved as well as to bring home to the butchers actually responsible for the bad flaying and drying, and to the owner of the diseased goats the pecuniary loss occasioned by these faults. The butcher and the goat owner will receive a reduced price for the skin and the live goat respectively.

This is only a very rough outline of a scheme of control which is yet in its infancy and any suggestions or criticisms from the members present will be welcomed.

The glacé kid manufacturer, and he is our chief buyer of goat skins, requires that the skin should conform to the following conditions:—

- (1) The skin should be of medium size, i.e. from 3 to 5 square feet and of good grain and substance.
- (2) It should be well flayed and free from all fat.
- (3) It should be as nearly square in shape as possible (see photos Nos. 2 and 3).
- (3) It should be dried slowly in the shade and for preference stretched on a frame. But there must be no stretching of the skin in a head to tail direction.
- (5) It should be free from the lesions of skin disease.

- (6) It should be packed flat and not folded.  
 (7) It should be bought from the native by the piece and not by the weight. The best skins weigh on an average about one pound and measure about 4 square feet.

Specimens Nos. 9 and 10 are glacé kid skins of suitable size and shape. Observe the fine even grain.

In comparison compare specimen No. 11. Observe the coarse grain of the skin.

This skin is typical of those that come from the province of Bornu where you get a large goat with longer and coarser hair.

It is now proposed to conduct a cross-breeding experiment with the smaller fine-skinned Sokoto goat and the coarser skinned Bornu goat. The idea being to produce a cross-bred goat whose skin will be of greater market value than the pure Bornu goat.

Skins should be as nearly square as possible in shape and not too large. The value of a glacé kid skin and therefore of a raw skin depends on the number of various patterns which go to the making of a shoe upper that can be cut from a skin.

The various pieces of a shoe upper are shown on specimen No. 12. They consist of golosh, toccap, and vamp.

The ideal size and shape of a skin therefore is one that will give these various parts of a shoe without waste.

I regret that I have not been able to give you more detailed information on the points I have mentioned in this paper; but as I have already mentioned the whole question of goat skins and their relation to manufactured glacé kid has only recently engaged the attention of our Department; and again as I have come here direct from a leave of absence in England, I have not had access to the latest information on the subject.

The problem is not one confined solely to Nigeria, and I am sure that in the skin and hide trade of the various African Territories there exists an economic asset well worthy of our attention and endeavours.

I have not touched on the question of hides; but much that has been said with regard to bad flaying and drying of skins applies equally to hides.

Skin brands also seriously detract from the value of a hide and they should, as far as possible, not be applied to the skin of the upper parts of the body.

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*Paper No. 28.*

### POISONOUS PLANTS IN SOUTH AFRICA HITHERTO UNKNOWN.

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THE procedure adopted at the Onderstepoort Laboratories by the author in the investigations into the effects of plants on animals consisted in drenching rabbits and our domestic animals with the minced or ground plants, and in subcutaneous injections into guinea-pigs and rabbits with extracts made from these plants. Mostly the plant material forwarded to the laboratory was too scanty to allow of experiments being carried out with all species of domestic animals.