

at his work to-day,¹ a seventeen-hands lorry horse, which has been tapped at least half-a-dozen times and during several different attacks. At a *post-mortem* I made some years ago in a case of twist, I was very much surprised to find that the third portion of the colon had been tapped—punctured by the trocar—from the right upper flank, although it was almost at the other side of the abdomen on the *post-mortem* being made. That case was made clearer to me at the *post-mortem* I made this week than ever it was before. In this case the third portion of the colon was certainly nearer the right upper flank than the first or second, and in the former case it must have been the same when the horse was tapped, but the horse living a few hours longer, instead of becoming reduced, the twist had become more pronounced, until the third portion was again turned away from the right side.

I have never attempted to roll a horse for torsion, but could I satisfy myself as to the direction of the twist I would not hesitate a moment. It would not be always successful even were the diagnosis correct and the horse rolled in the proper direction. But it would have reason to recommend it. A full colon is not easily turned, and it might require some violence, or rather some sharpness in the turning, before it could be made to alter its position in the abdomen. Just as in torsion of the uterus, in which cautious turning is usually recommended, I have oftener than once found turning of no use until I used sharp, sudden jerks. After all they are nothing to the jerks a horse gives himself in dashing about, or the sharp, spasmodic act by which a horse while lying flat on his side will sometimes attempt to throw himself on his back.

Experience has shown me that there is a real risk of a horse producing twist while rolling in colic, and it has also shown that a horse may reduce a twist by rolling. I have repeatedly seen cases in which a horse after rolling almost in agony has risen and not shown any more symptoms of acute pain. So, once conviction is brought home to my mind that a twist exists, I prefer to allow a horse freedom to roll, and I believe that had horses larger boxes or paddocks to roll in, once they are affected with twist, there would be fewer deaths from that cause.

CONTAGIOUS PUSTULAR DERMATITIS OF SHEEP.

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General.

CONTAGIOUS pustular dermatitis, although perhaps more familiar to the shepherd than to the veterinarian, has, under the name of contagious dermatitis, or orf, in sheep, been the subject of attention by the late Professor Walley, by the late Professor Williams, under the name of crusta labialis, by the late Professor Robertson, under the name of carbuncle of the coronary band, and by Mr Clark, F.R.C.V.S., of Coupar Angus. It has also been designated "hair and hoof disease," and "mouth and foot disease."

The disease has been seen from time to time in many parts of

¹ 13th October 1901.

England, Scotland, and Wales. It more often occurs in low-lying, undrained, and wet lands, especially during or after prolonged or heavy rains, and where the herbage of such pastures is long, coarse, and inferior in quality.

Sheep of any age are affected, but it is frequently, and perhaps more readily, transmitted, and more severe, amongst lambs or sheep under one year old, many of the older sheep appearing to offer some resistance to the invasion of the contagium.

In many outbreaks nearly all the sheep become affected, and fresh sheep brought on with this disease will transmit the same to many other sheep that may be grazing alongside, the disease usually appearing within a fortnight after the date of mixing the flocks.

The fatality of the disease is not great, although fluctuating from time to time according to the wetness of the season. Those sheep which succumb are generally attacked with profuse diarrhoea, but whether this symptom is the outcome of the surroundings, such as climate and wet pastures, or due directly to the presence of this disease, I am unable to state. No doubt sheep affected with the disease are more easily brought under the influence of adverse surroundings than healthy sheep.

Symptoms and Lesions.

A catarrhal discharge from one or both nostrils or eyes may or may not be present.

The chief seats of disease are the nostrils, lips, and coronets, the malady appearing for the most part as a pustular inflammatory eruption of the skin of these parts. The lips and coronets are visibly swollen, and lameness (generally of one foot) is present amongst some of the affected sheep.

The lesions in the early stage exist as an acute inflammation of the papillæ of the skin, mainly confined to the parts previously mentioned. A simple lesion might be well termed in plain language a pimple (primary stage)—hard, scaly, and from the size of a small pea upwards. This pimple-like formation is attended with much inflammatory swelling of the skin, and localised, raised, and prominent papillæ are disseminated over its surface, with in a large number of cases a distinct and decided tendency to the formation of pustules.

The hair immediately in contact with the undisturbed lesion is glued together by the adhesive nature of the purulent contents of the pustule or small boil; it stands erect in small isolated patches or tufts, and is raised from the surrounding skin by the swelling of the pustule, together with the accumulation of proliferated epithelial cells upon its surface, which, to the naked eye, forms a hard scaly crust, constituting the scab, and varying in size with that of the lesion itself.

Upon pressure being applied (by manipulating the parts between the finger and thumb) to a well-developed and matured lesion, pus appears around the circumference and under surface of the scab, and when this scab or crust is rubbed off or removed it exposes an ulcerative and suppurating wound or sore, with (in some sheep) little or no tendency to heal naturally, but rather to the formation of irregular, soft, and unhealthy-looking granulations (which readily bleed) around the edges of the lesion. Suppuration occurs in many

instances to a greater or lesser extent from the interior of the sore. The wound itself has most frequently a well-marked circular margin, and when irregular, that is generally from the coalescence of closely adjacent pustules.

The chief seat of the lesions of the mouth, is the outside of the lips, the upper lip being more often implicated than the lower. In many instances the pustules extend close up to the line of junction between the mucous surface and the skin, but with little or no inclination to extend or affect the mucous membrane proper of the mouth, although many small apparent pustules (like a pimple), of a shot-like consistence, in a certain number of cases, can be detected upon this line of junction.

Although the mucous membrane of the inside of the lips, cheeks, pad, or tongue is but rarely affected, or the seat of any apparent lesion, it is most important to recognise and to be prepared to find (in a small percentage of the most aggravated cases) the mucous membrane of the lips and tongue the seat of ulceration, and this appears to be entirely due to the discharge of a thin, ichorous, purulent fluid, plus an accumulation of effete matter around the commissures of the lips, coming in direct contact with these parts, and is quite a complication of the disease itself.

In the average case the lesions of the lips have less tendency to well-marked suppuration, they being mainly in the form of small raised pustules, rather numerous, with a natural tendency to coalesce, and giving the whole a moist, eczematous appearance.

There is no indication of a true vesicle, but it is always advisable to bear in mind the possibility of such from the application of too strong local dressings, such as paraffin, turpentine, strong acids, or other caustics.

I have in mind several instances where the owner (a farmer) had applied too strong local dressings, and in these cases the whole mouth and nostrils were much swollen and painful; vesicles or blister-like elevations were also present around the nostrils and on the inside and outside of the lips, which when burst allowed a thin serous fluid to escape.

In not a few animals the formation of pustules extends over the skin covering the nasal bones and around the orbit. Small pustules are also scattered upon the surface of the cheeks, about the size of a pea; and in these situations, as soon as the necrosed part becomes removed, the raw spot-like surface heals, or through inspissation of pus particles its development is arrested. It is not unusual to find in a small number of animals well-marked developing and matured pustules affecting the skin immediately surrounding the nostrils, which often, from excessive inflammatory swelling of these parts and consequent constriction of the nostrils, materially affects the process of respiration, the breathing being laboured and the ingress and egress of air accompanied by a noise.

In other animals isolated pustules may be so large as to constitute a fairly extensive abscess, affecting either the upper or lower lip, or both.

In aggravated cases affecting the lips the free surface and commissures show extensive disease, this being especially seen in those cases unattended with any attempt at local cleansing of the parts. The

opposing surfaces of the lips are a mass of hard, brittle, scaly, and necrosed crust, with much swelling affecting part or the entire length of one or both lips, and varying from half an inch to $1\frac{1}{2}$ inches or more in thickness.

There are present deep fissures or cracks running transversely across the scaly surface and extending well into the underlying structures. The same conditions are observable at the angle formed by the junction of the upper and lower lip, the upper lip being generally more extensively affected.

When the crust is removed by manipulation, it exposes a large, raw, angry, hæmorrhagic, and ulcerated surface, with specks of pus appearing at many points when the lip is squeezed between the finger and thumb. The fissures are still present, although, naturally, after the removal of the large crust, they are not so deep in appearance.

The accumulation of effete matter (saliva, particles of food, flies, dirt, purulent discharge, etc.) on the free border of the lips, and especially the commissures, has an excoriating effect upon the surrounding parts. The hair together with the epidermis peels off, as after applications of strong counter-irritants, leaving exposed a raw, tender surface, which in turn comes under the influence of any purulent discharge that may be present, or may extend into and implicate the mucous membrane and surface of the lips or tongue.

The opposite and corresponding part of the lower lip in some cases shows well-marked ulceration, although to a lesser degree, and it may be hidden from view by the swollen and inflamed overhanging upper lip, but is easily detected when opening the mouth.

Again, the formation of distinct pustules on the skin of the lower lip is often entirely absent, indicating that the part was most probably affected by direct contact with the extensively ulcerated surface opposed to it.

It is in these cases that the mucous membrane of the tongue may become affected, and thus, together with the ulcerated condition of the lips described, gives rise to a most offensively fœtid smell, and a general appearance in the interior of the mouth like that of "ulcerative stomatitis"—an affection often met with among the smaller breeds of dogs from the presence of decaying teeth.

The ulcerative lesions of the tongue are not, as a rule, extensive; they occur on the side of the tongue that is nearest to the most aggravated lesions of the lips, and very rarely affect both lateral aspects of this organ.

The first appearance of this molecular necrosis is as a small superficial wound or sore, in which the piece of lost mucous membrane looks as if it had been "punched out," and the edges of the wound, that is, the mucous surface, are not free, but closely in contact with the underlying structures of the tongue.

The usual situation is a little in front of the first molar tooth, upon the supero-lateral aspect of the organ, with a tendency to extend in very aggravated cases to the edge and under surface.

The average size of the lesion is from that of a threepenny piece to a shilling, circular, or oval in outline, and the latter from 1 inch to 2 inches in length; but the size entirely depends upon the extent of the ulcerative and suppurative surface that the tongue is brought into contact with.

In these cases mastication during rumination appears to be entirely unilateral, the sheep performing the function with caution and care to guard the sores, and the condition gives rise to a little extra salivation.

The lesions of the feet are similar to those seen in the case of the lips, but often more aggravated.

The chief seats are the anterior and lateral aspects of the coronets of either the fore or hind feet, and, as a rule, the lesion is confined to these situations, although not always.

Some of the pustules, often as large as boils and abscesses the size of a medium-sized walnut, are in close connection with the coronary band; and these large pustules which have reached suppuration (with necrosis of the adjacent skin) cause a separation of the horn and skin, giving the appearance of a deep suppurating wound, like a small "quittor." If the cause is not removed, and there is persistent aggravation from the presence of dirt and an accumulation of purulent discharge which works its way downward under the horny laminae, the claw may be cast; but this is very rare unless the case is complicated with foot-rot.

Foot-rot commonly commences in the interdigital space, near the supero-lateral border of the horn, and extends downwards under the solar surface of the foot and upwards under the antero-lateral horn of the foot, the separation of horn taking place from below upwards. Foot-rot affects the horn proper, and is associated with the formation of large fungoid growths and a most offensive smell.

To resume,—the pustules are by no means confined to the coronets, but appear in many instances as high up the legs as the knees and hocks, sparing in number over the cannon and shank bones, but more numerous around the lower parts of the knee and hock joints respectively, and favouring the flexures of these joints.

The fetlock joints are also frequently and similarly affected, and occasionally extensive ulceration of the skin is met with. In many sheep well-developed pustules appear in close relationship to the supernumerary digits or ergot on all sides. The formation of a hard, painful, boil-like swelling is frequently met with here, apparently originating close under the base of the supernumerary digit, and with peripheral acute inflammation of skin and subcutaneous tissues, extending well into the hollow of the heel.

It is quite an occasional and uncommon occurrence to find any lesion affecting the soft part of the foot, that is, the heels or between the digits; consequently there is no separation of horn and skin at these particular parts, unless through extension of disease from pre-existing lesions affecting other parts. The lesions which appear on the front and sides of the coronets show in some of the more advanced and aggravated cases real abscesses or abscess cavities with thickened walls, accompanied by acute inflammation of the surrounding structures, and giving rise to lameness during locomotion, varying in degree in accordance with the size and extent of the lesions. Naturally those lesions nearest to the coronary band, affecting a part of extreme and delicate sensibility, and those aggravated by dirt or coarse, long, wet grasses (when the affected sheep stand holding the leg from the ground), are characterised by the most marked lameness; whereas less advanced cases and those of a more superficial nature are not associated with any observable lameness.

Differential Diagnosis.

As compared with contagious foot-and-mouth disease, the most characteristic features are that the disease is pustular, and not vesicular; that it affects the skin proper, and not the mucous membrane of the mouth, unless from unusual complications, and then the lesion is ulcerative, never vesicular.

The soft parts of the foot, *i.e.*, the heels and interdigital space, are but rarely affected, except from extension of disease; and the lesions of the foot in their early stage are always associated with pus, which is not the case in contagious foot-and-mouth disease. Separation of horn is not frequent. Cattle, although in direct contact, remain unaffected, whereas in contagious foot-and-mouth disease they never escape infection. The gait and appearance of the animal during locomotion is not as if all feet were affected, for the acute lameness generally arises from lesions affecting one foot only.

The spread of the disease is not so rapid, emaciation is not well marked, sheep, on the whole, feed well, and the general appearance of dejection and ill-health is absent, except perhaps in a very few instances. There is no constant snatching and picking up of the fore limbs, or kicking out of the hind limbs. The sheep are not found lying scattered about the pastures as in contagious foot-and-mouth disease, or at most only a few individuals in a flock are thus separated from the others. Lameness is not well marked, but naturally it is increased with the severity and aggravation of certain cases; it is entirely absent in others. There is more evidence of pain from pressure than pain from irritation and soreness.

Treatment.

Complete isolation of the affected flock. Where possible, a change of pasture should be made, and the preference given to high, well-drained, and dry land. If practicable, a small quantity of dry fodder should be given morning and evening, such as hay, chaff, linseed and cotton cakes. The use of rock salt is not without recommendation. Medicinal treatment, if any, should consist of stimulants, alteratives, and tonics; a mixture of common salt, iron, and gentian added to the fodder will be found very useful.

Local treatment is attended with well-marked results; and if the sheep are taken in hand before the lesions become aggravated by dirt and the presence of accumulated discharge, they speedily recover.

In those cases where the scabs are very hard, and cannot be separated with ease, application of an antiseptic ointment will facilitate their removal.

In the average case the appropriate local treatment consists in a thorough cleansing of the parts in water, removal of scabs and all effete matter, and rubbing the legs with the hands while each foot is placed in a shallow bucket or trough containing a solution of some antiseptic, such as lysol, Jeyes' fluid, carbolic acid, Condy's fluid, or hyposulphite of soda. One or two thorough dressings to the affected parts are generally sufficient, but the worse cases will require attention until improvement is observed. It is most astonishing how speedily the majority of the sheep recover after one thorough dressing.