



needle, and clips off the thread nearest to the needle leaving the main thread in the opening which has been made. The advantage of this method of inoculation is that one gets a uniform quantity of virus into each animal, and no liability to the thread coming out.

One can in this way inoculate 600 head of cattle in a day. Many people will say that they can inoculate so many hundreds. This is not the point: 400 done well is infinitely better than 600 done badly. This operation to be successful needs care, and one can only impress upon the operator the necessity of care and patience. These points if attended to will amply repay the operator in the after treatment of his cattle.

The *after-treatment* of inoculated cattle is the most trying, but is minimised by his attention and care.

The operator's attention has to be directed from the fourth day after inoculation onwards, morning, noon, and night.

In the early morning if the cattle are kraaled, which should be the case, note as each animal rises, the manner in which the animal erects its tail, to see if there is any stiffness or inability to do so.

A goodly number of cattle should have taken the inoculation by the tenth day.

This taking is manifested by a slight swelling at the seat of the operation, which if left alone will extend to the base of the tail.

A pock is expected by many; this is not necessary, as there may be a local *subcutaneous* extension of the introduced virus from the seat of operation towards the base.

Attention again must be paid to the glands at the base of the tail commonly called the *kernels*. These glands are *lymphatic* glands, they perform in this case the duty of catching any deleterious matter from passing into the system.

It has been, and is the practice among many farmers of at once scalding or cutting out these glands. This is not the humane way. The swelling of this gland is secondary to the death, irritation, and swelling at the tip of the tail, consequently by amputating from the tip upwards until healthy tissue is reached there is no occasion of touching the kernels until they show indications of containing *pus*, or matter, which can be noticed by pressing on the tumour with the finger; should it besoft open it freely, and dress with the hereinafter mentioned dressing.

Attention must be paid to the point of the tail so that the swelling must not gain too great a hold before it be noticed. One day's inattention will cause weeks' work in inoculating.

Immediately there is a swelling at the point of the tail, and from the swelling there exudes a yellowish fluid resembling that introduced, do not hesitate, but amputate, see that the tail bleeds freely; to stop the bleeding, do not *ligature* but take a hot iron (docking iron) and *sear* the wound. The reason for this is, that where there is a predominance of swollen tails in cattle, there is danger of secondary inoculation at the open wound, not from the virus but from the germs of *blood poison*, which float about in large numbers. Care again must be taken that where there are any cows sadly neglected and swollen, these must be removed from the inoculated herd and kept aside, purely to prevent this *septic* inoculation. Many farmers have inoculated with pieces of lung, and have had dreadful results; these are due to septic inoculation: instead of inoculating with pure virus they have inoculated with septic virus.

After having amputated the tip, dress the tail and the glands with a dressing composed of—

Linseed Oil .. ..	1½ pints.
Turpentine .. ..	4 ounces.
Carbolic Acid .. ..	2 ounces.

This dressing to be applied externally over the inflamed surface daily.

*Internally* one tablespoonful of *sulphur* administered in a pint of water, this dose to be given daily; sulphur can be

made to mix tolerably well with water by first making it into a paste. In the course of a week the swelling will gradually subside.

Even in the treatment of pleuro, sulphur is a very good medicine, but in the after treatment of inoculated cases the effects are remarkable.

One can only state that scrupulous attention must be paid to the cattle from the fourth day after inoculation, till all have shown signs of having taken.

### Joint-Disease of Foals and other Young Animals.

In an article contributed to the *Journal of the Royal Agricultural Society of England*, by Professor John Femberthy, of the Royal Veterinary College, London, he first describes the different names by which the disease is known: "Joint Ill," "Navel Ill," "Foal Ill," "Scrofulous Joint Disease" "Specific Arthritis," "Rheumatic Arthritis and Pyæmia," and states that it is most commonly observed in foals, lambs and calves, and less frequently in young pigs and puppies. It occasionally occurs in isolated cases only, while at other times it affects a large number of young animals. It invariably appears soon after birth. It affects all breeds, pure and cross-bred, but is more frequently met with in the former. The cause of the disease has been attributed to in-and-in breeding; scrofula or tuberculosis; improper feeding or working of the mare during pregnancy, or the suckling period, cold, damp, and a variety of local unhealthy conditions. But the Professor states that it is beyond question that the disease is due to a germ which may enter the system of the young animal while in the womb, but most probably after birth. But whether contracted in the womb during the act of parturition or subsequent to birth there is ample reason for believing that the germ usually enters the young animal at the navel, and he explains the manner in which this may occur as follows:—"At birth the cord passing through the navel is made up, amongst other matters, of vessels which in the womb carry the nutritive blood from the mother to the foetus, and the used up impure blood from the foetus to the mother. At birth this cord is severed, and the blood flow stopped by a clot which forms in the vesse's. Soon after separation the end of the cord shrivels, and the aperture through which it passes heals up. The extremity of the cord in the navel dies, and under favourable circumstances becomes absorbed. Conditions which favour the absorption of the dead part hasten the closing of the navel, so that, in the healthy new-born animal, there is a natural process to prevent the entrance of injurious matters through it. It is well known to physiologists and pathologists, that anything which retards the natural healing process favours the growth of microbes there, and affords a means for their entrance into the blood-vessels which distribute them through the system."

"It is important therefore, in view of the evidence that the germ of this disease enters through this opening, to inquire into those circumstances which interfere with the natural disposition of the navel to heal. In all probability anything which during pregnancy debilitates the system of the mother may have this effect. Improper feeding, insufficiency of material essential to the nourishment of the foetus, want of exercise, and especially anything which causes the birth of the young animal considerably before its time, must be regarded with suspicion."

Further, malignant parturient fever in ewes and abortion in mares should be looked upon with suspicion, as being related to the poison or germ which produces Joint-ill, and the fact that the disease appears in a larger proportion of males than females would indicate that the urine which is dribbled by the male interferes with the healing of the navel. But all such matters though important as predisposing causes,