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Kottur<sup>2</sup> working on Kumpta cottons contradicts Flyson and says that a broad midlobe is dominant over narrow and a long midlobe dominant over a short one. He found that length and breadth of bracteole seem to behave as simple Mendelian factors.

Experiments conducted in the West Indies<sup>3</sup> go to show that strength of staple is not a character transmitted by means of seed but it depends very largely on external conditions which prevail during the growing season. The length of lint produced is a function of the parent plant which it transmits as a whole to its off spring, the differing length of the lint attached to the individual seeds bearing only a secondary relation to the lint of the offspring. The length to which cotton lint will attain in any season is dependent on the water supply of the plant at the critical period of the development of the boll. Hence in making comparisons of length of cotton lint grown in different seasons or in different lands the results will be 'erroneous' if the rainfall is in no way comparable.

<sup>3</sup>W. I. Bulletin  
No. X.

In concluding I have to thank Mr. R. C. Broadfoot, Cotton Specialist, for the very kind impetus and encouragement given to me in the course of the preparation of this paper and for the ready consent which he gave for perusal of the records at the Cotton

#### Conclusion.

Breeding Station. I have to thank the ladies and gentlemen present for the opportunity given to me this day for speaking on this subject.

### VETERINARY FIRST AID.

#### Wounds and Antiseptics

#### An Address by

F. A. KENDALL B. V. Sc., Ag. Chief Inspector.

As every stock-owner knows, all animals are liable to sustain injuries; often, may be, serious enough to cause him some concern, particularly in the case of valuable animals. Common against injuries are wounds of various kinds. It is, therefore proposed to give you a little first aid instruction regarding wounds and their



treatment, which may be useful especially to those out of the reach of professional assistance. Wounds are variously described as incised or clean-cut, lacerated or torn, contused, punctured, and so on.

Incised or clean-cut wounds are caused by some sharp-edged article, e. g., a knife, piece of glass, broken metal, a plough-share; in fact, anything which has a sufficiently sharp edge to produce a cutting effect. Such wounds may be easily recognised by the cut appearance of the skin and flesh. They may be dangerous because of the bleeding, which is more likely to occur in these than other kinds. Sometimes large blood vessels are severed, and early collapse of the animal may follow,

Lacerated or torn wounds, as the term implies, show irregular or jagged edges, the result of some object tearing its way through the tissues. They are commonly caused by contact with a nail, hook, barbed wire, stump or broken branch of a tree. Bleeding from these is not usually so free or alarming as in clean-cut wounds, though occasionally it is serious when a blood vessel is actually torn apart. Even then it is not quite so dangerous because the blood vessel stretches more or less before it gives way and the broken ends recoil. This tends to lessen the volume of escaping blood.

A contused wound is one caused by violent blow of some kind, such as a kick, a heavy fall, or by colliding with some object. The tissues are literally burst open. Bleeding is not a conspicuous feature because the larger blood vessels usually escape injury. The damaged skin and flesh will, however, be saturated with blood from the broken muscles. These wounds may be dangerous, not from the bleeding, but because the bruised and broken flesh may become mortified.

Another kind of wound that may have serious consequences is the punctured wound. These are caused by such objects as a nail, prong on a fork, metal, peg or stake, cow's horn, or even shaft of a vehicle. Their size and depth vary according to the instrument causing them; some indeed may be so small as to escape notice for some time. They rarely bleed but, for several reasons, they must always be regarded with suspicion.

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serious consequences by such objects as a cow's horn, or even vary according to the y be so small as to bleed but, for several suspicion.

Germes are introduced by the offending object and transplanted into the tissue. The wound may not be discovered for sometime meanwhile blood poisoning or lockjaw may develop from the germ activity. If the wound be close to the joint, the joint cavity may be opened. Such wounds are also dangerous when the foreign body or portion of it, is lodged in them and when they occur in the chest or abdomen they should be carefully watched.

Besides the descriptive terms I have used there are one or two others used in the general sense. For example, a simple wound is one which does not involve important structures, or organs. It is usually confined to the skin and flesh where the bleeding is not serious and healing follows quickly.

A wound is complicated when important structures are damaged e.g. joints, internal organs, bones, nerves and large blood vessels; also those in which foreign bodies are lodged. A wound is said to be clean when no germ activity is set up. This is much the same as a simple wound. The septic or poisoned wound is the reverse. In animals most wounds are more or less septic, for if contamination does not occur when the wound is inflicted, it usually happens later because of the insanitary surroundings.

*Treatment.*—We shall now pass on to the treatment. First of all, a few words as to suitable equipment for this purpose. Antiseptic preparations are essential—lysol, Jeyejs fluid, or similar agents; carbolic acid, Condyl's fluid, chloride of lime, are very useful; tincture of iodine is perhaps best, but rather expensive. If these are not available, petrol or phenyle can be used. If no recognized fluid antiseptic or disinfectant can be had, one can be made by dissolving a little washing soda or common salt in boiling water. This preparation should of course, be cooled down before being used.

Dry antiseptics like boracic acid or failing this, a mixture of powdered lime and chalk are useful for after-treatment. They should be used in the ratio of one in eight.

Cotton wool and bandages are almost dispensable. In emergency, new clean cheese-cloth or towelling can be used in place of cotton wool. Bandages may be made of discarded bedsheets or table cloths, but it is essential they should be clean.



For stitching wounds, surgical needles in three or four assorted sizes should always be at hand, but in case of emergency either pins or ordinary sewing needles may be used as makeshifts for stitching small skin wounds, sacking needles being requisitioned for large wounds. Stout thread, whipcord, well-woven twine, or  $\frac{1}{4}$  inch tape will do as substitutes for catgut and silk. One or two pairs of artery forceps are valuable for clamping cut blood vessels to enable them to be ligatured. A surgical knife and pair of scissors complete the emergency outfit.

*To stop Bleeding* :—The actual treatment of a wound is largely dependent on its character and situation. I will deal with bleeding first, which is often the foremost concern. If the blood is merely oozing and tends to congeal quickly there is no cause for alarm, and no special steps are needed to check it. When large veins or arteries are cut, it is necessary to act at once, without any preliminary dressing of the wound, for any delay may be fatal. If possible the bleeding artery or vein should be seized hold of with a forceps or pincers and tied with fine thread. A horse-hair is handy for the smaller blood vessels. If this fails to stop the bleeding, pressure on the blood vessel should be tried. If the wound be on the leg, pressure can be best applied by placing a tightly-rolled pad of cotton-wool or a large cork crosswise against the leg near the wound, and securing it in position with a tightly-drawn bandage. The object is to press the blood vessel against the bone. A most important point is this—if the blood be from a cut artery, the pad must be placed 2 or 3 inches above the wound; if from a vein, the same distance below the wound.

Bleeding from an artery can be recognized by the bright-red color of the blood and the jerky way it runs; blood from a vein is a darker brick-red color and flows smoothly. The arteries run down the limbs; the veins run upwards. Therefore to stop a vein bleeding, pressure must be applied below the wound and above in the case of an artery.

When the bleeding is checked or considerably lessened, one may proceed to clean up the wound and apply stitches. The method of stitching will be discussed presently.

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bandage in the way just described—a wound about the body for example. In such a case the next best thing is to pack the wound cavity tightly with cotton wool or a piece of clean towel and put two or three stitches across the wound to keep the pack in. The ends of the stitches should be left long enough to tie in a bow, so that if in a few hours it is desired to change the pack the stitches may be simply loosened and not taken out. A blood-soaked pack soon becomes foul, and should be removed after 6 or 8 hours. If bleeding commences again, a fresh pack should be placed in the wound.

*Stitching of Wounds:*—All open or gaping wounds that obviously require closing should be stitched. First remove any dirt and congealed blood with warm water in which a little washing soda has been dissolved, and then flush the wound with an antiseptic solution consisting of two teaspoonfuls of lysol, creolin, or Jeye's fluid to a pint of water. Failing these, use phenyle or solution of chloride of lime. Any loose shreds of flesh should be trimmed off with scissors but no skin should be cut away unless it is so badly torn that it cannot be stitched.

Simple stitching with thread or fine twine usually suffices for small wounds. The stitches should be from a  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch apart and not less than a  $\frac{1}{4}$  of an inch from the edge of the skin. For large deep flesh wounds in horses and cattle the stitching should be done with a large needle  $\frac{1}{4}$  inch tape being used. The stitches should be at least half an inch from the edge of the wound and each stitch not less than half an inch apart.

The wound must not be closed completely but an opening left at the lowest part to provide drainage for any discharge. This also will permit of the wound being easily flushed out with antiseptic solution. When the wound is healing the stitches should not be removed too soon. In animals they are as a rule, cut out too quickly. Any that remain when the wound has healed may be easily pulled out after snipping with scissors. When pins are used to close a wound both edges of the skin must be pinched between the finger and thumb to facilitate passing the pins through. Thread is wound in a figure of 8 round the point and head of each pin and tied. To remove this kind of stitch, simply pull the pins out.



*After Treatment of Wounds* :—If a wound be a simple one with only a small amount of discharge it is sufficient to wipe the discharge away three or four times daily. Most of you have seen a dog licking a wound—that is his method of keeping it clean. Clean cloth or cotton wool or cheese cloth should be used each time the wound is cleaned. The wound should afterwards be dusted with boracic acid or powdered chalk; a tin pepper-castor is handy for the purpose.

Large, deep wounds with abundant discharge must be syringed out three or four times daily with a liquid antiseptic, e. g. ; Condyl's fluid, lysol or chloride of lime in water. If none of these is available, boiled water in which washing soda or table salt has been dissolved should be used. After syringing or washing, the wound should be dusted with boracic acid, zinc oxide, or powdered chalk. In order to prevent any scalding by the discharge the skin should be smeared with lard, vaseline oil, or soft soap; and at all seasons, but particularly in summer, the skin around the wound should be smeared with fly repelling dressing. A good mixture is four parts of creosote or Stockholm tar to six of turpentine and ten of olive oil. The wound should never be dressed up with tar or axle-grease or such things.

Restraint is necessary sometimes to stop the animals tearing or rubbing their wounds. A horse can be backed into a stall and his head tied on each side to the rear posts; or short stick like a broom handle can be fixed to his head-stall and a surgingle. The tail may require tying to one side to prevent the hair being caught in the stitch.

Cattle are not so fidgety. If necessary, put a wooden triangle or fork of a sapling on the neck, similar to that used to stop them going through a fence. Smaller animals such as sheep, pigs and dogs that have been injured may be bandaged to protect wounds. It is advisable to muzzle dogs before attending to any injury, and to keep them muzzled afterwards so as to prevent them tearing out the stitches with their teeth.

*Treatment of Contused or Punctured Wounds* :—Now a word or two about the treatment of other wounds. Contused wounds, unless extensive or gaping, need not be stitched. In any

case they are essential. Condyl's fluid is good but is costly. A piece of cheese cloth with iodine should be used. It must not be used internally or drainage is made. Caution the wound.

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case they should not be completely closed. Adequate drainage is essential. Flush them freely and frequently with antiseptics, Condyl's fluid is a very good antiseptic; iodine, of course is better but is costly, though it can be economically used if applied on a piece of cotton-wool tied to a stick. For this purpose tincture of iodine should be diluted with four parts of water. Punctured wounds must not be stitched except when an animal has been gored and internal organs are exposed. Enlarge them, if necessary, for drainage purposes by cutting the skin down to the level of the cut made. Care must be taken to see that no foreign body remains in the wound.

Nail punctures in horse's feet require special attention. Clean hoof, pare out the horn round the puncture, inject iodine or carbolic acid or insert a small plug of cheese-cloth or other material saturated with either of these agents. Cover with a pad of clean material, and fix a piece of leather over the sole. Repeat the dressing twice daily. Keep all manure and urine swept away from the horse's feet.

Open joints are serious and difficult to treat. They are recognizable by the clear amber or straw-colored discharge and the hot painful swelling round the joint. As a rule, treatment is only worth while with valuable animals or stud stock, as working animals seldom become sound even if cured. Careful injections of small quantities of peroxide of hydrogen four times daily should be tried. Horses may need slinging to rest an affected leg.

Abdominal wounds with exposure of the bowels are always dangerous and many are fatal. If treatment is attempted, the patient may require throwing. If so, protect the parts first with a sheet of table cloth. When secure, wash all dirt and blood away, carefully replace the bowel if necessary, close the wound with strong tape and bandage the body with a sheet to support the wound. Antiseptics should be applied only to the surface wound and never injected deeply. Small animals offer better chances of recovery than horses and cattle. Wounds entering the chest cavity are treated in practically the same way.

#### SUMMARY OF POINTS IN TREATMENT.

1. Determine the character and situation of the wound.



2. If practicable remove the animal to suitable place for treatment.

3. When haemorrhage is serious attend to it first. Delay may be fatal.

4. If there be no severe bleeding, remove dirt and congealed blood; clip the hair round the edges and trim off any shreds of flesh. Save the skin wherever possible.

5. Apply freely a good antiseptic at the earliest opportunity and continue its use throughout while the wound discharges. Fall back on household agents like soda and common salt in boiled water if no antiseptic is available.

6. Stitch wounds that require it as soon as possible—leave an opening for drainage.

7. Do not stitch punctured wounds—enlarge them if necessary. Explore for foreign bodies. Flush them out frequently with antiseptic or swab with iodine if available.

8. Protect wounds from flies.

9. Keep the patient in clean and wholesome surroundings.

10. Use any practicable means of restraint to prevent further damage to the wound and to facilitate healing.

11. Keep an eye on the patient's behaviour.

(From Journal of Agriculture, Victoria—August 1926.)

### ON COCONUT.

P. S. JIVANNA RAO. M. A.

*The birth-place of coconut* :—Controversy on the subject does not appear to have been closed. Divergent views are still held regarding the original home of the palm, Dr. O. F. Cook of America maintaining that America is its native home whereas O. Beccari the palm specialist considers that Asia was its original home. In India it is as old as 'God Ganesa.'