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DISHORNING.

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NOTE—Dr. Phares resigned on June 30, but as this Bulletin was prepared by him, while a member of the Station force, it is published in his name.—DIRECTOR.

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DISHORNING.

For this spelling the reader is respectfully referred to all the dictionaries and encyclopedias.

ANATOMY OF HEAD.

A few words on the anatomy of the head of the ox will enable us to understand better the relations of the horns to the other parts of the head and the consequences of removing these appendages.

CAVITIES.

Although the head of the ox is very large, the brain being small, the skull or bony box containing it is also very small. The skull has a number of large bones appended and extending far away from the brain. These large bones contain large cavities filled with air; thus while the bones are widely extended and with many depressions and protuberances afford attachments for very large muscles, the head is comparatively light. There are ten of these large cavities, or rather twelve in pairs, besides that containing the brain.

There is no connection between any of these paired cavities and the deeply-seated skull or brain cavity, which is traversed by the median plane.

These cavities are named from the bones containing them, viz:

First. The inferior maxillary cavities, lying on either side of the median plane, have no opening into any of the others. The remaining pairs also lie on each side of the median plane, and all on one side of the plane have openings from one to another and into the great nasal passages, thus allowing circulation of air through all these cavities.

Second. The great ethmoidal cavities.

Third. The sphenoidal cavities.

Fourth. The superior maxillary sinuses.

Fifth. The frontal sinuses in the frontal bones.

Sixth. The sinuses in the cores of the horns. These last may be regarded as (and they are really) only branches or lateral prolongations of the frontal sinuses.

FRONTAL BONE.

The frontal is the largest, hardest, heaviest, broadest bone of the head and rises from three to five inches above the brain, the widely separated superior angles affording ample bases for the horns. These sinuses are very large, branching into many rooms, galleries and niches of very varied shapes. Besides these large cavities there is a large number of small cavities, tunnels, etc.

EXPERIENCES AND REPORTS.

The writer has been familiar with the operation of dishorning from his earliest remembrances; and during the last three years he has examined cases and reports of cases more than 10,000 in number, besides dissections of heads and brains of slaughtered cattle.

Recent investigations have been conducted at the College, with the object of ascertaining proximately at least the period at which absorption of the bone or cartilage at the superior lateral angles of the frontal bone takes place so as to elongate the frontal sinuses into the horns. This varies with breed and other conditions. It may be stated in a general way that this absorption takes place when the calf is five or six months old and the horn two or three inches long. If the horn be severed when the calf is six months old it will be discovered that in most cases the frontal sinus is opened by the operation. The cavity continues to elongate in proportion to growth of the horn.

It may then be affirmed that sound adult horned cattle have normally

HOLLOW HORNS,

that this is not caused by disease, and that there is no disease properly so called. As in man, catarrh sometimes extends into the frontal sinuses, causing much distress, so in oxen the inflammation sometimes extends through the frontal sinuses into the horn cavities—in both classes of subjects, in some instances, resulting in suppuration and caries.

WHEN AND HOW TO DISHORN CALVES.

At the place where the horn is to come the young calf has a small, button-like, hairless spot, easily seized and moved with thumb and fingers. After a few weeks a small tubercle may be felt under the skin; now absorption has commenced on the inside, extending the frontal sinus, and deposit is taking place outside under the skin and a core for the horn has commenced forming. Now is probably the best time to dishorn and a pocket knife or scalpel is a convenient instrument for performiug the operation. The bald skin with a border of one-fourth of an inch wide of hair-covered skin, together with the cartilaginous button or tubercle beneath, may all be easily severed with a single cut and in a moment. But a few drops of blood are lost, the periosteum which secretes the bony core and the portion of skin which secretes the horn are removed with little pain to the calf and in a few days it is well.

DISHORNING OLDER CATTLE—ILL EFFECTS.

The operation, however, may be performed on animals of any age with little danger of serious injury. So far as pain and danger are concerned, the section may be made at any distance from the skin. But other considerations determine the place of section. As a rule, the nearer the head the better. Notwithstanding the assertions of many that the operation never injures the animal and never endangers life, we have too much testimony from the best surgeons and have had too many calls for assistance to accept the statement.

HEMORRHAGE.

In some instances the hemorrhage has been very large, extremely prostrating and requiring most active and skillful treatment to arrest it and save life. Fever has followed, loss of appetite and flesh, with slow recovery. It is true such cases are rare, yet as they do occur, every care and precaution should be observed to give the animal the best chances. We are convinced that we have seen instances in which, if death has not been absolutely caused, it has at least been hastened by the operation.

SUPPURATION—CARIES.

Without great loss of blood, there have been many cases in which there have been some fever, nervousness, dimin-

ished appetite, flesh and milk. It is not a very rare thing for some suppuration to occur after operation; and more rarely caries of the bone gives trouble for months, with offensive discharges.

ONE ARTERY.

Hemorrhage is from one artery—rarely two—situated at that part of the stub near the ear. Hence it will be perceived that plugging the sinus through which one sees some inches down into the head is worse than useless for stopping the flow of blood. But solution of persulphate of iron (Monsel's solution) thrown into the artery or introduced with a glass point instantly forms with the blood a firm clot or plug. The flow may sometimes be arrested by compress and bandage around the head above the ears.

HORRIBLE WOUND.

When a large horn is removed a frightful, large raw surface is left, and in its middle a huge cavern extends down into the head. One may see into this cavern several inches; the polished white walls reflecting the light well illuminate its interior. Some operators have mistaken this white surface for brain, and declare that they cut off the horns down to the brain; others within an inch of the brain, exposing that important organ to view. This, if true, would be horrible, and render the operation many thousand fold more dangerous and cruel.

NO REASON FOR HORROR.

A moment's glance at the anatomy of the head given above will show the absurdity of such assertions, and that a belt three inches broad, including the entire top of the head may be removed without touching the brain.

NOR SILLY SYMPATHY.

Equally absurd is the twaddle about the cruelty of cutting through the exquisitely sensitive marrow of the horn core. Nothing could be more useless or out of place than marrow in the ox horn.

HORN STRUCTURE.

The formation of the core has been explained. Now a word about its covering—the horn proper. This is of about

the same character, chemically, as hair, hoof or nails. It is secreted or formed in about the same manner. In the horn of the calf, when but two or three inches long, elongated bundles resembling masses of aggluinated hairs are as readily perceived as the bundles of fibres in boiled lean beef.

HORNS LITTLE SENSITIVE.

A number of organs are wisely formed with little or no sensitiveness, as liver, lungs, heart, brain, because in these sensitiveness would be much worse than merely useless, but absolutely pernicious. So the horn possesses no great degree of sensitiveness, being intended for great exposures, for hard usage and violent blows. There is no need, then, no place for the morbid, mawkish sentimentalism so much affected by writers and talkers on the subject of dishorning.

LOST BY ACCIDENTS.

Horns are often lost by various accidents. Not long ago, in the herd of the writer, a beautiful cow made a vicious charge with all her power upon another, who received the shock in such a way as to suffer no injury, while at the moment of collision a horn of the assailant was snatched off instantly, leaving the entire core uncovered. In a few weeks it was recovered with a layer of horn, but deformed. The next day another cow lost a horn in the same way. In some instances both horn and core are knocked off; and cases have been seen in which both horn and core were broken some inches from the head and required surgical aid.

USES, ABUSES AND DISADVANTAGES.

In many instances horns are ornamental, and in some countries, in a state of nature, useful to protect against the attacks of beasts of prey. But in domestication, protected from these dangers, the horns are well nigh or wholly useless to the animal. In a herd as a whole they are injurious, being employed to injure each other. They are often injurious to the individual. Finding that he has weapons with which he can assail others he neglects his legitimate business of grazing, browzing, taking water, and wastes time in teasing others and keeping them away from food and drink. He is all the time more or less excited and uncomfortable. So that his own well-being is impaired by having horns. Deprived of them he becomes quiet, not liable to violent excitement, eats, drinks, sleeps, enjoys contentment and grows fat. So much from his own standpoint.

MERCIFUL VIEW.

From the proprietor's standpoint: The horns of the stronger are a terror to the weaker animals, which are deterred from food, drink, rest; persecuted, gored, bruised, excited in a tyrannical, cruel manner, appealing powerfully to the pity of the merciful owner for relief. "For the righteous man regardeth the life of his beast." These considerations justify the removal of all horns.

FINANCIAL VIEW.

But man is financially interested in the matter. Since dishorning is really a merciful procedure, he should have no scruples about resorting to it to protect his property and promote his interest. He prevents these animals from wounding and bruising and famishing one another, saves a vast amount of time in handling, of room in sheltering, and of feed stuff. His beeves are fatted for market with much less expense of feed and in less time. They go into the markets, as attested by the dealers at the great cattle depots, in much better condition, having whole hides and unbruised flesh, both of which sell more promptly and at better prices, while the cost of transportation of the live animals is much less, because a large number can be packed in each car. For like reasons the milk, cream and butter product is increased in quantity and improved in quality. It is true that the product is in some instances slightly reduced for a few days after being dishorned, but after the excitement passes off and the wounds heal the beneficial results are permanent.

SANITARY.

The operation should be performed when the animal is in good, sound condition and plenty of good, wholesome food and water and good quarters accessible. The healing should generally be complete in from three to eight weeks according to size of the wounds. Usually no application to the raw surface is necessary except pine tar.

LOOSE HORNS.

Sometimes we find horns jointed on the frontal bone, or only partially united with it, and in other cases there is no bony union at all with the frontal bone. In the latter case the horns are pendent, may be easily moved with the hand, and readily severed from the head with a knife.

INSTRUMENTS.

The only instruments needed to dishorn are a knife and saw. The blade should not be too long and limber. Some of the butcher's saws or tenon saws, with reinforced back, are excellent. The saw should be plied with rapid, long strokes. A punch or gouge is not necessary in operating on young calves. There is danger in gouging away bone of opening the frontal sinus, which must be reclosed before healing can be completed. The cutting out of bone with the gouge really delays the cure.

NEEDLESS CAUTION.

"One assertion has been made which, if it can be proved, will settle the matter as regards bulls. It is that in some cases they are rendered impotent—of no use as breeders."—Am. Dairyman. This cannot occur as a direct or even as a remote necessary effect. The bull and jack are not very rarely rendered impotent by becoming too fat and want of exercise. After dishorning if the bull becomes very quiet he may take on more than a normal quantity of fat, and so become impotent. This, however, is not likely to occur. But if it should, whether he be horned or doddy, work will restore his powers. Long experience in working bulls convinced me that they should all be made to work at least enough to pay for all the care and feed given them.

FASTENINGS.

Calves that can be conveniently held by two or three men may be operated on most rapidly by laying them on a platform of convenient height, or on the ground, and while firmly held by hand the horns removed. Younger ones may be held between the man's legs, his hands grasping the ears, while the operator with a knife in a moment removes the the betton as before described. I do not approve casting the older, stronger animals, they are so often injured by it; violent struggling is always a concomitant, and much time consumed. A narrow stall, with very little labor, can be turned into a kind of stocks in which an animal may be quickly and firmly fastened by a bar across resting on the loin or hips, another behind the hams, one touching the front of the thigh and the belly, and another against the breast. His body is thus rendered almost immovable, and it remains only to fasten the head to an immovable post in front. When the horns are removed and the stubs tarred, the animal may be released in a few seconds.

OTHER MODES OF OPERATING.

The use of caustic alkali or strong mineral acids to destroy the matrix and budding core, if producing suppuration or open sore, is more cruel and less cleanly than the knife or the hot iron. The iron, heated to right temperature, and skillfully applied, causes pain of a second's duration and makes a dry crust which slips off in about two weeks, scarcely leaving a scar.

D. L. PHARES.

EXPLANATION OF PLATES.

In all the plates the darkest shadings indicate very deep or elongated cavities, the lightest shading very shallow excavations, and the white parts the bony core. The specimens from which the drawings were made were selected from a lot of horns removed from the College herd by Professor Irby, April 6th, 1889.

It is to be regretted that no drawings were made of buttons and tubercles cut with a single stroke of a knife from the heads of young calves the same day.

Plate I, represents sections of a pair of horns of a 6-year old cow. These figures show great differences in the size, shape and number of cavities in the horns of the same cow. Usually but one cavity extends far into the core, others uniting with it one or two inches irom the base.

Plate II, figure 1, shows the longitudinal sinus and a shallow depression in the horn of a 6-year old cow. Figure 2 shows a contracted pass in the cavity an inch from the head of an old bull. Each side of this narrow channel the cavities are large. The section was made of the left horn, an inch from the head, the right having been broken off about that length two years before. All the figures are natural size, and it will be observed this horn is small.

Plate III. These three figures represent horns of calves about six months old.

Figure 1 shows a large but shallow extension of the frontal sinus into the horn.

Figure 2 shows a smaller, shallower extension, indicating that absorption had passed the plane of section but a few days.

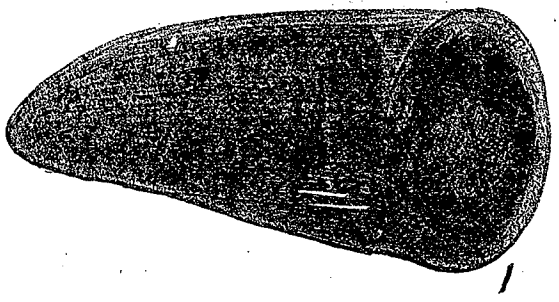
Figure 3 shows a core in which absorption has not quite reached the plane of section. The section shows an unbroken, uniform plane surface. A week or two later removing the horn, the frontal sinus would have been exposed to view and the air perceived passing through the opening.

These three figures exhibit true to nature the fibrous structure of the horns.

CORRECTION.

In Bulletin, No. 9, under Helenium Autumnale, page 11, line 11 from bottom, instead of "purplish" read "paler and soon turning brown."

D. L. P.



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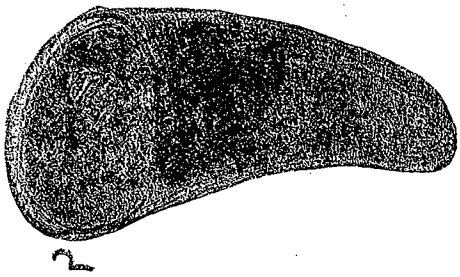

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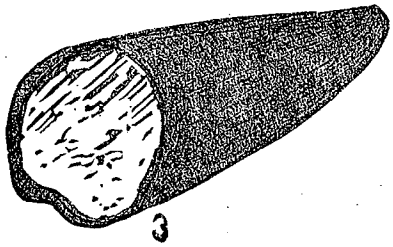

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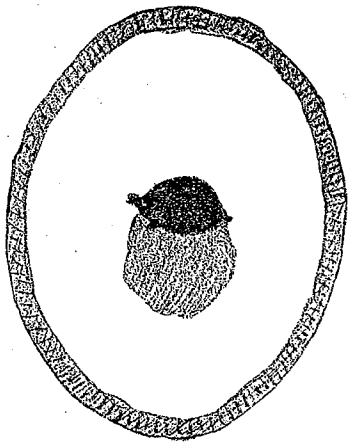

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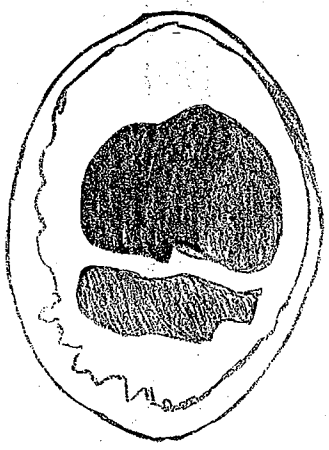

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