PRACTICAL METHODS OF STALLING AND SLAUGHTERING ANIMALS.

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THE Lecturer, in commencing, remarked that his subject was not an artistic one, but the necessity for animal food required the slaughter of animals, and so long as people were not vegetarians, animals would have to be killed for the supply of human food. No doubt it was possible for human beings to live on vegetables, but a glance at the anatomy and physiology of the human organs showed that their internal economy was specially adapted for the use of animal food. In slaughtering, humanity required that as little suffering as possible should be inflicted, therefore the mode of death should be either preceded by insensibility, or accompanied by loss of sensation in the very shortest time. The appearance of meat depended somewhat on the mode of slaughter, and all these circumstances had to be taken into consideration. To assist them they had the empirical knowledge which practical men had gathered, and which they had told to others as to the effect of various methods of producing death. Thus, if it was desired that the meat should keep well and the carcass should look well, a certain period without food is desirable on the part of the victim. The usual thing was to starve an animal for twenty-four hours before killing. It was not easy to explain why this should make a carcass keep better, but a similar condition obtained in operations on the abdominal organs. It was well known that operations on the abdomens of animals are more successful when animals have been starved a short time previously than when they have not. To the agriculturist and the veterinary surgeon this is illustrated most forcibly in the spaying of pigs. It was noticed that the mortality amongst pigs is greater when they had food than when they are starved. The possible cause of this appeared to him to be that when an animal is fed up to the last, and has no opportunity of exercise, the body becomes charged with unassimilated nutritive material, whereas if an

animal is starved for twenty-four hours there is a consumption of all superfluous nutritive matter, and possibly a condition less favourable for the development of bacilli. Not only was it advisable therefore to starve animals for some time before killing, but as they frequently came long distances by road or in railway trains, they should have a rest—if possible of some days, but certainly of some hours. After over-driving flesh did not keep well, nor indeed after any violent exercise. Then again, as the result of being driven, animals by the fault of their drivers or by their own fault would become bruised, and this also followed carriage in the railway trucks. Those bruises did not last long, and it was as well for the bruises to disappear.

It is necessary when operations of slaughter are conducted on a large scale that there should be proper provision for keeping animals before slaughter; in fact, there should be proper lairage. Without going into any architectural matters, they could see that in a place where animals are constantly passing through and had to be detained for a little time some comfort should be given, and that provision should be made for the proper ventilation, drainage, and cleanliness of their quarters. To put a few animals that are fairly fresh into a large lair is not advisable, because they become rough and chase each other. Again, it would not be proper to turn a large number of animals into one big open place, it being far better to put them into pens. The question as to the amount of cubic space necessary in lairage was not a matter they need go into, because in these places the roof is generally a good height from the floor, and therefore ventilation is free.

Dealing with the methods of slaughter, let them first consider the method of producing insensibility. Now insensibility was not always produced for the sake of humanity, but for the safety and convenience of the men about to operate on animals. There were various ways of doing this. Shooting would occur to everyone as the quickest method of disposing of an animal, but unfortunately that had disadvantages. Men required to have a good aim, and it is said by persons engaged in the slaughtering business that the carcase of a shot animal does not keep. Horse slaughterers stated that a pole-axed horse would keep twice as long as a shot horse. Now either shooting or pole-axing required skill, and to get over this difficulty of skill many mechanical inventions had been brought out. Greener's patent is one of the most commonly used. This was a tube with a cartridge. The cartridge was placed in one end of the tube, and upon being struck with a hammer or mallet it exploded, and had the same effect as a gun. The advantage was that they did not require to take aim. The operator could

walk up to the animal, place the tube against the animal's forehead, and then strike it. The work was done effectually, but there was one objection to it. Every now and then the bullet would pass through the side of the neck of the animal, and might do damage if used in the streets of London when hundreds of people stand round an injured horse, and advise the operator how to do his business. There was yet another objection to Greener's patent. A pole-axed horse would lose very little blood unless his throat was cut afterwards, but the bullet of a Greener's apparatus broke up the base of the brain, and the result was a very considerable loss of blood through the nose. Now the flow of blood in this way is objectionable in animals killed for food, because some of it would pass down the windpipe and produce a peculiar blotched appearance of the lung, rendering that organ, although not unhealthy, almost unmarketable. It was, however, better for a man to use Greener's patent than the pole-axe if he was not an expert. The pole-axe penetrates the brain, having a lengthy protuberance on it. In the horse a very long pole-axe is not required, because there was very little except a plate of bone over the brain, whereas in the ox there is a large double plate with a space between, so that the pole-axe must be longer to be effectual with the ox. As the pole-axe penetrated the brain it broke up some of the tissues, and if an animal was struck properly he was knocked down and died in a very short time. Experience showed that in a pole-axed animal if not bled the heart would cease beating in some four or five minutes. The importance of this fact was that as soon as the heart ceased beating the escape of the blood from the vessels is not so thorough as it would be if the heart continued beating. If they stunned an animal without penetrating the brain—and calves, pigs, and in some country places bullocks, were stunned with a big hammer which produced concussion of the brain—the animal might revive and get up. The heart did not always stop beating as the result of concussion of the brain without fracture of the skull, but in such a condition the animal might live, and his heart go on beating for some considerable time. You would say then, so far as bleeding went, stunning with a blunt instrument was better than a pole-axe; but there were difficulties. The ox possessed an enormous frontal region of great thickness over the brain, which, as a rule, rendered the attempt to produce insensibility by blows with a hammer a somewhat brutal performance, four or five blows having to be given before producing insensibility.

Another method of producing insensibility was pithing, which consisted in dividing the connection between the brain

and the spinal cord by an incision between the head and the first bone of the neck, or between the first and second bones of the neck. Pithing was a good method of producing insensibility. In Portugal and Spain, hammers or pole-axes are not allowed to be used in the abattoirs. The same thing, he believed, held in Italy. A curious thing occurred in pithing that occurred in no other method of slaughter. It sometimes paralysed the heart, and when the animal fell, which it did instantly, some large veins at the base of the heart would give way, and the chest would receive a quantity of blood which would cause staining. Pithing required a little art, perhaps more than pole-axing. It was necessary to depress the nose of the animal, because when his nose is depressed the space between the vertebrae is opened wider than it is if the head is straight, the knife then more easily penetrates. There was the question as to whether it is advisable to use masks or blinds. In horse slaughtering nearly every horse slaughterer puts a cloth over the horse's eyes before he attempts to strike him, possibly it was more advisable with that animal than with the ox, for the horse was more alert and more apt to move his head. The use of the mask with a movable bolt in it, which was invented so as to enable men to do their work without missing the right spot, is not a very useful invention. The bolt is, of course, in the proper position, and is struck with a mallet, so that even an amateur ought not to fail. An expert with the pole-axe would do his work more quickly and quite as certainly. The mask with the bolt was an apology for bad work, and with the man who could use a pole-axe, all that was required to do the work properly was to get the animal's head in a proper position. He was inclined to think that the ordinary slaughterer with the pole-axe would do his work as effectually and thoroughly as a man could with a gun.

However, whatever method was adopted with regard to producing insensibility, the great thing in slaughtering was that the animal must be bled. If the meat was to be kept, as much blood must be removed from the carcase as possible. There were various methods of bleeding. The ox had an extremely thick skin, and the butcher generally divided that skin before he attempted to divide the arteries. Having divided the skin he inserted his knife so as to divide the large blood-vessels just as they came out of the chest. If the knife went a little too far they would have what they call "over-sticking," and a lot of blood would escape into the chest instead of coming out of the body. The result was a considerable staining of the lining membrane of the chest. The men endeavoured to

get rid of the staining by getting rid of the pleura, and then the meat inspector would come round and say, "This is a case of tuberculosis, or you would not have stripped the pleura off." Movement of the limbs favoured bleeding, and therefore it was desirable not to tie an animal up too tightly when secured for slaughter. Of course, all the blood in a body could not be removed by any method—some would always be retained in the capillaries. Every movement of the limbs forced blood along the veins, and therefore the convulsive movements of a dying animal would favour removal of blood from the muscular tissues.

In considering these various methods of slaughter it might occur to some that as pole-axing soon stopped the heart and stunning weakened its action, that an animal would bleed better without either. This consideration suggested reference to the method of slaughter adopted by Jews and Mohammedans. They did not attempt to knock animals down or to produce insensibility, but they cast the animal. Now casting is not a pleasant process, because the slaughter-house was generally stone-paved, the animal was cast with ropes, and sometimes it would have a fractured pelvis as a result of casting, and always bruises. The worst part of the process in this method of slaughtering was that when the animal was on its back, and they required to stretch the muscles of its neck as far as possible, they took the nose as a lever and the horns as a fulcrum, and very forcibly stretched the neck. He thought that part of slaughtering merited the term of brutality. The object of it, of course, was to stretch all the tissues so that a stroke of the knife would be more thorough and effective than otherwise. The men who used the knife did their work remarkably well; every tissue and every structure was severed down to the spinal column, and the bleeding was free in the extreme, in fact, it was advisable not to stand within some feet of the animal.

This was a difficult subject to discuss, because slaughtering for food, both by Jews and Mohammedans, was regarded as a sacrificial rite. The question was whether there was much suffering except in the stretching of the neck in the horrible position he had described. He was inclined to think there was very little suffering after the Jewish butcher had drawn his knife across the arteries with one stroke, and that the animal then experienced little or no pain. There used to be a practice of bleeding calves, but he did not think it was much followed now. This was done in order to get the flesh white. The method was to open the jugular vein the night before slaughter, and to remove blood to an extent to render the animal faint, and then finish it off the next morning. He did not think

much of this was done now, nor was it necessary or justifiable in any way.

Sheep are, in this country, what they call "stuck," and as a rule no attempt at the production of insensibility is attempted. To see a novice or an apprentice endeavouring to find the blood-vessels was by no means a pleasant sight. He doubted whether this method of sticking sheep should be practised any longer. In the Paris abattoir they are killed as the bullock by the Jewish butcher. The sheep is laid on its back, the nose is depressed, and the neck stretched, and one stroke of the knife across the throat severs every blood-vessel. Why that could not be done here he did not know. It was certainly a much more humane and rapid method of destroying the animal than that now practised in this country. To see a man trying to break a sheep's neck before it was half bled was a sight which would suggest to an officer of the R.S.P.C.A. that a man ought to have a month's hard labour. If a sheep had its throat severed at one stroke, as the calves and sheep did in Paris, everything that was requisite for slaughter would be carried out. As to calves, probably because they were larger animals than for any other reason, they were stunned, but why he did not know. In some other parts, in Hungary for instance, a calf would be hung up with his hind legs tied together, his nose being a foot off the ground, then in that position he received a blow on the poll, he was stunned, and his throat was cut. Here a somewhat similar process took place, but in Paris they were not stunned, the knife only being used. Pigs were stunned in most places, and the reason why probably was to produce insensibility and so keep him quiet. It was not the custom to pole-axe pigs, because it was desirable to keep the pig's head intact, and the stunning was therefore done with a broad, flat surface, with a big hammer, or a piece of hard wood, a round oval disc, three or four inches across. With that insensibility could be produced immediately, and the skull was left intact.

The slaughter of fowls in this country was not a nice process, and he did not see why the old farmhouse method of wringing their necks should be altered. It was effectual, and was certainly not inhuman. He did not like the process of destroying turkeys and geese, for to see a farmhouse man with a small knife making holes in the roof of the mouth, or trying to divide the carotid artery suggested unnecessary pain, and he failed to see why the head should not be decapitated at one stroke.

The effect of habit was curious; for instance, we made a great fuss if meat was not perfectly sweet, and yet a connois-

seur would not eat game unless it was putrid, or, at any rate, quite high. It was said there was a great deal of difference in the gustatory qualities of a hare according to the way in which it was killed. Epicures like hares that have been coursed, but with the bullock exactly the opposite obtained, for they are allowed a little rest before being slaughtered. The hare was preferred when its death was preceded by fright and fatigue, and when every blood-vessel in its body was thoroughly distended.

Turning to the question of slaughter-houses, the lecturer said the requisites of a good slaughter-house were the machinery for lifting the carcass, floors and walls of a nature that rendered washing simple, and cleanliness with proper ventilation. All slaughter-houses are under the superintendence of the public sanitary officer, and so far as cleanliness goes he could interfere. But slaughter-houses are in such large numbers, and local authorities are so lax in their regulations, that a good number of them are hardly visited at all, and animals might be killed without any inspection. Personally he was of opinion that all meat should be inspected before being sold. This no doubt was an interference with trade, and it might be argued that so long as you dealt with a respectable butcher you are perfectly safe. Quite so, but all butchers were not respectable. Inspectors would know what kind of meat was sometimes offered for sale, and the worst of it was that a good deal of this was manufactured into the so-called "table delicacies," and what these consisted of no one knew. Now the difficulty was that until the private slaughter-house was done away with there could never be a thorough inspection of meat. The butcher, not unnaturally, objected to public abattoirs being established. In some towns the objection had been carried out so thoroughly and practically that the butchers built for themselves an abattoir outside the boundaries of the town, and then laughed at the municipal authorities because they could bring in what they liked. It was much easier abroad to establish abattoirs and to have a thorough inspection of meat than it is in this country, because nearly every town was hedged round with walls and gates, and tolls were levied called "octroi duties," that is to say in Continental towns there was a set of men ready to prevent anything being brought in without proper inspection. Here carcasses were brought by rail or road, or canal, and anything they liked could be sent up. An agriculturist being an economical man did not like to waste anything, and very often a sick cow was killed in order to save it from dying. If the animal was found dead they would remove as much blood as they could by cutting its throat, and then send the carcass to

market. If there were merely public abattoirs in a town it was perfectly certain that the practice of the farmer would not be stopped, as all the worst meat and diseased animals would be sent to a private slaughter-house and so disposed of. It seemed to him, however, that the public abattoir would in time be adopted, even by the butcher, because he could have his meat killed properly, and if he wanted it to set well it could be put into cold chambers—particularly was this advantageous in summer. The small butcher could not possibly have this advantage, and probably, the public would some day insist on having all their meat inspected. Probably the complaint of the butcher that he did not care to have his business interfered with by the authorities, and known to his rival in trade, was to some extent justified, but the good of the community had to be considered. It was said that by establishing abattoirs out of the rate-payers' money, the butchers' private establishments would be shut up. He thought if the butchers' private houses had to be shut up for the sake of the meat consumer, then the butcher should be paid for them. If the butcher knew that when his slaughter-houses were compulsorily closed he would be compensated, there would not be anything like the objection there is at the present time to the establishment of public abattoirs.

The Health Acts were difficult to administer, and, in fact, he had never found a man who was able to understand the conditions of all the Public Health Acts. Some day, he hoped, there would be an amended Public Health Act which would do away with all the privileges which some had and some had not in order to make a law general and uniform. Under the conditions which he had named it would be possible to secure the slaughter of animals under the very best conditions, and to have meat inspection carried out in a proper manner. In time all the large towns, at any rate, would have public abattoirs, and probably the smaller towns would follow suit. There would then have to be some provision for the man who found that what he hoped was good meat turned out to be unfit for human food, and who reported its condition instead of trying to sell it. A butcher who bought an apparently healthy animal, and found after slaughter that it was unfit for human consumption, should have redress against the farmer who sold it, or should be compensated out of the rates.