



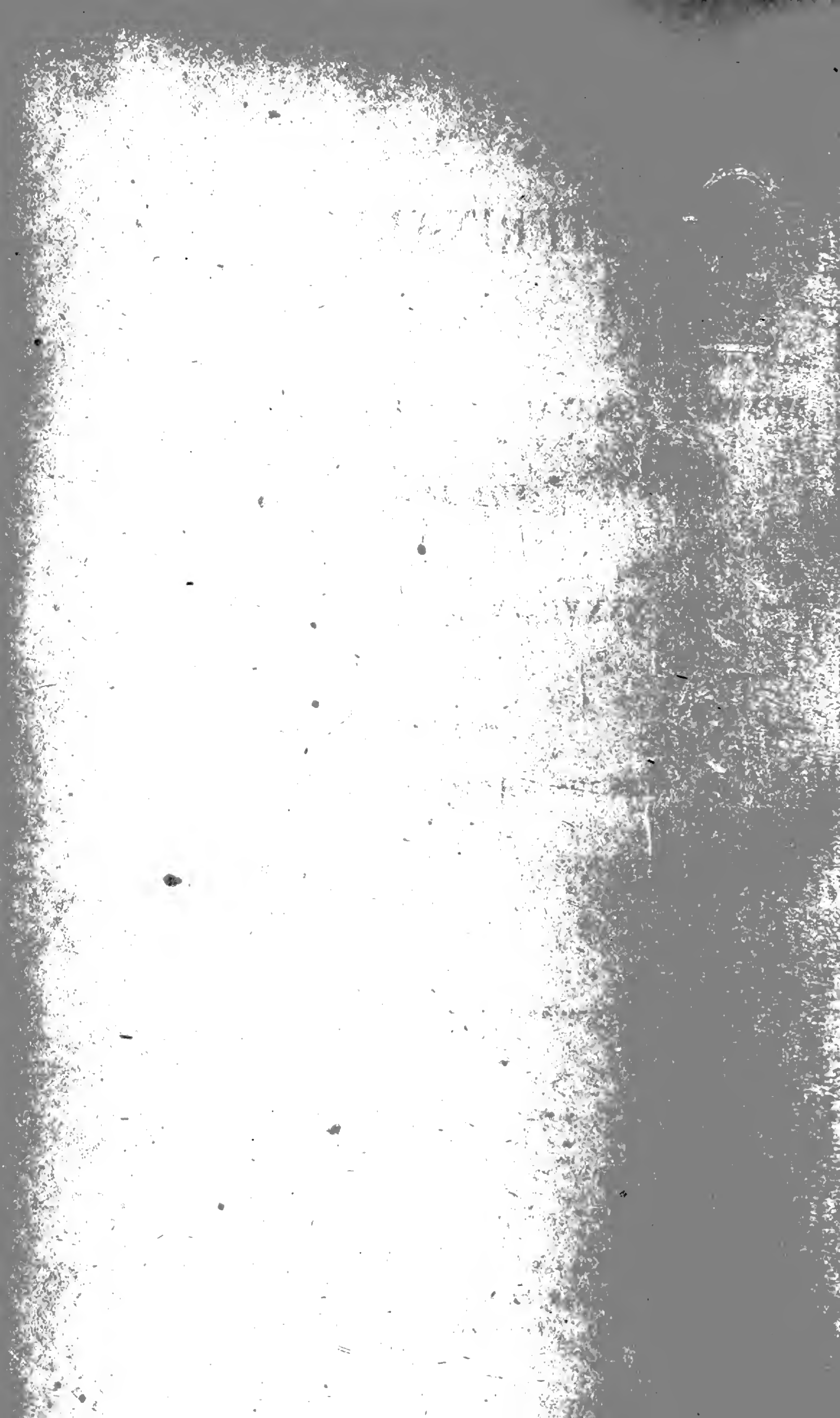
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Communications and Cases.

TWO CASES OF PARALYSIS IN THE HORSE,
ARISING FROM SPINAL APOPLEXY, AND
ONE RESULTING FROM AN INJURY TO THE
SPINE.

By Professor VARNELL, Royal Veterinary College, London.

I HAVE thought that a brief account of the following cases may not be uninteresting to the readers of the *Veterinarian*, more especially to the younger members of our profession, as it will be seen that they are not of a common character, nor of frequent occurrence. The difference in the length of time, in the first case, as compared with that of the second, before the like result was produced, adds considerably, in a pathological point of view, to their value.

To obtain as much of the history of the first case as I possibly could, I wrote to Mr. H. Withers, the owner of the horse, who kindly forwarded me the following letter:—

242, OXFORD STREET, Nov. 9, 1863.

MY DEAR SIR,—In compliance with your wish, I send you the history of the bay horse you were kind enough to examine before he was destroyed, and subsequently to make a *post-mortem* examination of his carcass. I bought him, seven years ago, to work in a carriage; he was then five years old, but was found afterwards to be of such an irritable and restless disposition, as not to be sufficiently quiet for the purpose. In consequence of this I put him to work in the 'forage van,' at which he continued up to the 8th of September of the present year, when he was found to be lame. The lameness was but slight at first; nevertheless, I sent him to the farm for rest. I should have observed, that about the 12th or 13th of August last he was noticed to go slightly lame of the off hind leg. When he was sent to the farm he was at once put into a

loose box, and although he did no work, he nevertheless lost his spirits, and the lameness became gradually worse, assuming a different character. At first it was not marked by any peculiarity, but afterwards the animal seemed to lose the power of advancing the limb, and dragged it after him, with the foot turned outwards, thus indicating that the whole of the muscles of the hind quarter and leg were paralysed. When he moved, it was in a sidelong direction. On the 29th of September I sent the horse to the College, thinking the case might be of some interest to the profession. I have never been able to ascertain that he had had a fall, nor that he had ever been thrown out of work, excepting for a few days only, and then on account of a sore throat.

I am, my dear Sir,

Yours truly, &c.

In commenting on this affection I would observe that I am not about to write an elaborate paper on paralysis due to spinal apoplexy, although the subject is a very inviting one, but simply to record a few facts relative to the history, symptoms, and *post-mortem* appearances of the two following cases. The first I shall describe will be that of the horse referred to in the foregoing letter. I first saw him as he was being led into the College yard, and was at once struck with the idea that his lameness was not of an ordinary character. The symptoms, although unusual, nevertheless carried the mind at once to the seat of the disease. There could be no doubt of its being an affection of the posterior half of the spinal cord; but to what extent or of what nature it might be, I could form no definite conception. The muscles of the lumbar region of the side implicated, as well as those of the hind extremity, were apparently paralysed; so that when the horse was made to progress, the affected limb was drawn after him in a way clearly indicating a total loss of muscular power. The muscles of the same region of the opposite side of the body, from not being affected, or at least not to the same extent, produced a peculiar curve of the spine which gave the horse a strange, grotesque appearance. The animal was placed in a large loose box, not with a view, however, of putting him under treatment, for I considered the case hopeless, but for the purpose of watching the progress of the disease. On the second day after his admittance he either lay or fell down in the box, and was evidently unable to rise again of himself. He was therefore assisted, but when placed upon his legs he could not maintain a standing position. Both hind extremities had now become similarly affected, so far as loss of muscular power was concerned; but the side first paralysed presented a condition quite different to the other. From the fifteenth rib quite down to the hock the integumental covering of the

whole "quarter" was wet with cold perspiration, and thus it continued to be as long as the animal was allowed to live, which was until the fourth day after his admittance. The constant struggling, and the contusions caused thereby, together with his throwing his head violently on the floor, induced us to have him destroyed.

We found, on making the *post-mortem* examination, that the thoracic and abdominal viscera were healthy, but that the muscles of the loins and leg of the side *first* affected were much paler and softer than natural. We could not, however, detect any other lesion of these organs, nor did we find any either of the bones, ligaments, or blood-vessels in this stage of our investigation. The spinal canal was next laid open, in doing which all the vertebræ were carefully examined, but neither fracture, ankylosis, nor exostosis existed in any of them, nor could we detect anything abnormal in their structure. In the interior of the canal, however, sufficient disease was discovered to account for the phenomena above named. From about the ninth dorsal vertebra to the middle of the sacrum the *theca vertebralis* was very much distended with a dark-coloured fluid, and on slitting it open, it proved to be of a sero-sanguineous nature, mixed with some partially broken-up clots of blood. From about the sixth dorsal vertebra to its termination, the spinal cord, with its dura-matral covering, presented a very singular appearance. Its surface was not only uneven, but it also varied in colour. In some places the dura mater apparently formed a tight ligature around the cord, while in other parts it seemed to have yielded to the enlarged contents, causing a bulging, and giving a nodulated character to the cord as a whole. In some places the dura mater had actually given way, allowing the diseased and broken-up nervous tissue and effused blood to escape beneath the arachnoid membrane. The cord itself, from the anterior part of the dorsal region to the end of the sacrum, was of a dirty-gray colour, and studded here and there with a number of ecchymosed spots and streaks of effused blood. For a short distance it presented a yellowish-gray or greenish tint, denoting the presence of pus, which was found to exist in tolerably large quantities. On examining the cord more particularly I was surprised to witness the completely broken-up state of its structure. From about the eighth to the fifteenth dorsal vertebra it was so completely disorganized that scarcely a trace of its normal tissue could be detected. Many of the nodular enlargements before alluded to were, when cut into, found to consist of disorganized nerve-matter, mixed with effused and

partially broken-up blood, thus forming a dirty-brown, muddy-looking mass. That part of the cord which occupied the lumbar and sacral regions presented a somewhat different aspect, but, nevertheless, showed many of the same pathological changes, although in a less advanced stage. The surface of this part of the cord was not enlarged like that before described, nor had the dura mater given way at any point; neither did I detect any indication of pus, but the cord was evidently swollen, its vessels being engorged with black blood, and there were a few ecchymosed spots, giving to its surface, as before stated, a speckled appearance. A transverse section of this part of the cord explained, to a certain extent, the cause of its being larger than natural. In the centre there existed a clot of black blood as large as the holder of a pen, and the vessels of its interior were likewise much engorged. The superior and inferior longitudinal fissures, and the nervous tracks of which each half of the cord is composed, were more or less separated from each other by effused serum. It was also found that the black coagulum observed in a transverse section extended nearly to the termination of the cord, thereby materially increasing its circumference: the connecting commissures had likewise, no doubt, become ruptured. Such is a brief, but, I believe, tolerable correct description of this to me remarkable and interesting morbid specimen.

Any views I may offer in attempting to explain the cause of this disease must be regarded as hypothetical, as I have no direct data to guide me. It is not known that anything particular occurred to the horse at the time he was first taken lame which would satisfactorily account for the disease. If it had been known that the horse had at any time cast himself in the stable, or that he had fallen while drawing a heavy load, or that he had had any illness likely to give rise to effusion into the structure of the spinal cord, or into its theca, a clue would have been obtained, and the difficulty in accounting for the lesions would have been much lessened. As the case now stands, I can only conjecture that the controlling power of the blood-vessels was either wholly or partially withdrawn, and that in consequence they became congested, which congestion was followed by effusion into the structure of the cord, and also into its sheath. These changes I can conceive to have been only slight at first, but afterwards they became more extensive, until at last the engorged vessels gave way, allowing the blood to escape, when, as we can easily imagine, the results which would follow would be similar to those I have described. I will not specu-

late upon the most probable causes that primarily were in operation, any further than to suggest that a spontaneous softening of the cord might have been going on for some time before anything was observed to be the matter with the horse; or it may have been that the horse, naturally a very irritable animal, had unduly exerted himself when at work, and, when in a heated state, that he had been exposed to a current of cold air, thereby producing congestion of the vessels of the spinal cord and its meninges, which was followed by rupture of their coats and an escape of their contents, thus establishing a true case of spinal apoplexy.

CASE 2.—A case somewhat analogous, but not quite identical to the above, has since come under my notice, which I will briefly describe. A hard-working cart-horse, the property of a corn dealer, was taken from his stable in the morning apparently quite well. He was used for the purpose of delivering corn, and performed his work satisfactorily, but on his returning home, when within a few yards of his stable, he evinced great difficulty in steadying his hind extremities, and before he could be removed from the shafts of the cart he fell, and was unable to rise. The owner requested me to see him, but being particularly engaged at the time, Mr. Pritchard, our demonstrator of anatomy, kindly offered to go and examine the animal. On his return he informed me that he considered the case to be one of complete paraplegia; and although he could not state precisely its cause, he nevertheless believed it to be a hopeless case, and consequently he had advised the owner to have the horse destroyed, which suggestion was acted upon. The *post-mortem* examination, which was made soon afterwards, fully justified such advice. The whole of the spine was brought to the College, and I carefully examined it. The bones were first examined, especially on their external surfaces, and afterwards the spinal canal was laid open from one end to the other; but no injury, either to the bones or their connecting ligaments, could be detected. The theca vertebralis, however, was much distended, and dark in colour, which was found to depend on a large quantity of bloody fluid that had issued from its interior. The vessels of the pia mater were much engorged, and some of them had given way, thus allowing the escape of the blood, which, being mixed with effused serum, formed the serous fluid that distended the spinal sheath. The part of the cord from which most of the blood had escaped, and which had caused the largest amount of pressure upon the spinal cord, was located in the pos-

terior part of the dorsal region. From this point to a considerable distance, both in a forward and backward direction, the pia mater was of a deep scarlet colour, here and there approaching to a black hue.

In comparing these cases one with the other, I have only to remark that, in the latter, the cause which gave rise to the loss of function seems to have been acute, and its effects upon the muscles of the hind extremities consequently very sudden; while in the former, although the primary cause may have been the same in character, still its effects were comparatively slow, and a much longer period necessarily elapsed before the muscles were completely paralysed.

CASE 3.—Cases of paralysis in the horse arising from *traumatic* causes, like those of idiopathic origin, are not very frequently met with in veterinary practice, still they cannot be considered rare. I therefore think that the following well-authenticated case of this affection, in addition to the preceding ones, is worth recording. The history of it is contained in the following communication, which I received from Mr. Walley, M.R.C.V.S.

WELSHPOOL, *Nov. 2nd*, 1863.

DEAR SIR,—I have despatched to your address this day, per rail, a portion of the spinal column of a horse, which, upon examination, you will find to consist of the last dorsal and first lumbar vertebræ. The inferior vertebral ligament, together with the uniting ligamentous tissue, are torn asunder. I have forwarded the parts to you, not from the case presenting any very unusual features, but from the exceeding simple manner by which the lesions were caused, and to show what great effects from small causes sometimes arise.

The history of the case is as follows:—A bay gelding, five years old, fifteen hands high, the property of Mr. Bonner, of Marton, about seven miles from here, was being ridden quietly home by the son of the owner, in company with a neighbouring farmer, on the night of the 15th of last month. Nothing unusual took place until they began to descend a hill about five miles from here, when the animal was noticed to falter a little in the off hind leg, and in a short time to become very much worse. The rider dismounted, thinking that the horse had a stone in his foot, to ascertain which he procured a light; but no stone being found, and nothing else particular noticed, he again proceeded on the journey. The horse, however, became worse at every step, and with great difficulty he succeeded in getting him to a farm house at the bottom of the hill, some 200 or 300 yards distant, and putting him into a loose box. The horse immediately fell down, and made several ineffectual attempts to rise again. I was requested to see him on the 17th. On my arrival I found him incapable of rising, and lying tolerably quiet on the left side; pulse full and strong, but not much quickened; mucous membranes injected; appetite ravenous; bowels costive. He struggled freely with the fore legs, but was capable of moving the hind legs only a little; there was,

however, sensation in both of them, on pricking him with a pin, &c. I told the owner that it was probable the horse was suffering from paralysis; but if so, it was only partial, and that there was a chance for him. I took this view of the case from the manner in which it commenced and the absence of any appearance of external injury, and I determined upon trying the effects of strychnine upon him. I therefore sent two 3-grain doses of it, combined with some laxative and fever medicine, one dose to be given at night, the other in the morning, and also a blister for his back and loins, promising to see him the next day. Nov. 21st, I found him much the same, with a little more power in the hind legs, and upon examining his back, I found a large swelling on the right side of the spine, about opposite the last lumbar vertebra, and I at once came to the conclusion that the horse was not suffering from pure paralysis, but that he had received an injury either from a sudden strain or inordinate muscular contraction, giving rise either to fracture of one of the processes of the vertebra, or the superior posterior spinous process of the ileum, which by pressing on the crural nerve had caused the partial state of paralysis. I told the owner that, as the horse was young and his appetite and spirits good, it would probably be only a question of time for his recovery, but I expressed at the same time a doubt that the wounds on the projecting portions of his body, from lying so long on one side and struggling, would lead to something serious. I discontinued the strychnine, and as the bowels were costive, I gave more laxative medicine, combined with febrifuges, and applied some liniment to the swelling alluded to; had him frequently turned, and his wounds dressed with arnica lotion: his general comfort was attended to, and as he did not micturate with facility, I withdrew the urine from time to time by means of the catheter.

This treatment was carried out with little variation up to the 25th, when, by my orders, they got him into slings, and he stood well on all his legs except the off hind, on which, however, he bore a little weight once. On the afternoon of the 26th I saw him again. The right side being uppermost, the hip presented a fearful spectacle. There was a wound as large as the crown of a hat; all the skin over the part was dead, and oozing from underneath the margin was a large quantity of a sero-sanguineous fluid of a fetid odour, the healthy skin being separated for some distance all around, and the serum being infiltrated underneath it to the other side of the spine. Yet his appetite remained good, and he was very cheerful, but with a peculiar expression about the eyes and countenance. The pulse, however, was quick and wavering, and the mucous membranes much injected and tinged yellow; he also evinced pain about the hip by throwing his head up and looking at it. I may mention that they had again attempted to raise him in the morning, but had failed; and as there was no perceptible improvement, I informed the owner that the case was hopeless, but as reluctance was manifested to have him destroyed, I did all in my power to alleviate the pain by applying hot fomentations and antiseptics externally, and administering sedatives and cordial medicines internally.

27th. I was astonished to find the horse still alive, but he was gradually getting worse. The same measures, by way of treatment, were adopted as yesterday.

28th. This morning, on visiting him, I found him dead, having died about 6 a.m. I at once proceeded to make a *post-mortem* examination, the following being the result:—All the muscles surrounding the hip for some distance were in a state of decomposition, and their tissue easily broken up. This sphacelitic action had extended through and in-

volved the peritoneum, giving rise to the exudation of some bloody fluid into the abdomen. The internal organs were healthy, except the liver, which was engorged with blood, and its tissue disintegrated. The ligamentum teres on the right side was partially lacerated, and gave evidence of inflammatory action, as also did the crural nerve for some distance along its course on the same side. I did not find anything else to account for the symptoms until I had removed the kidneys, &c., and exposed the psoa muscles, which I found altered in texture, and of a pale, clay colour. It was this which led me to remove them, when I found the lesion as shown in the morbid specimen I have sent you. As you will observe, the medulla spinalis, as seen at the end of each of the bones, is normal, but I doubt not, in separating them, it will be found to be injured. As I said at the commencement, I am inclined to think that these lesions were the result of some sudden slip or strain, more especially as the fans of the cavalry saddle, which he had been used with the day the lameness occurred, projecting backwards, came just over the part injured, and the rider was somewhat heavy, and the horse weak. I should esteem it a great favour if you would kindly give me your opinion of the matter. If you think the specimen and history of the case worth laying before the members of the Veterinary Medical Association I shall be pleased. For publication it has scarcely sufficient interest, I fear.

I remain,

To Professor VARNELL.

Yours, very sincerely, &c.

At the time Mr. Walley was called upon to see the horse, which appears to have been on the second day after the affection was observed, he informed the owner that, as the animal was young, he thought there was a possibility of his recovering; still, however, he was not at all sanguine as to the result. Such treatment as he deemed proper was resorted to, but it proved to be of no avail, for in a very short time so little hope was entertained of the animal's recovery, that Mr. Walley advised the owner to have the horse destroyed. This advice, however, was not complied with, and the poor animal was allowed to wear out a miserable existence.

It is a great pity that when the owners of horses or other animals are assured by those who are qualified to give an opinion, to the effect that there is no chance of a recovery from the malady they are labouring under, that they do not at once sanction their being destroyed. Such a procedure would save some expense, and a great deal of animal suffering.

The symptoms in this case were certainly diagnostic of pressure upon the spinal cord, or some similar lesion; and when such is the case, and two or three days have supervened without any change for the better taking place, the sooner such horses are destroyed the better. I consider that Mr. Walley might safely have advised this course to have been taken when he first saw the horse; nevertheless, he

acted cautiously in becoming doubly sure that recovery was impossible before he decided upon the advice he gave.

The specimen sent to me was, as stated by Mr. Walley in his letter, a portion of the vertebral chain, consisting of the last dorsal and the first lumbar vertebra. I found, as he likewise stated, that the *inferior* vertebral ligament, and the fibro-cartilaginous substance which connects the bodies of the vertebræ together, were torn through, and so completely was this effected that, had I not had the greatest reliance on the veracity of my informant, I should have almost fancied that the parts had been severed with a knife.

The precise nature of the cause which gave rise to this lesion remains, however, a mystery to me, for nothing special has been mentioned in Mr. Walley's letter to account for it. I think it probable that the horse either slipped or fell down in some way or other unknown very likely to the rider, thereby partially lacerating the ligament and cartilago-ligamentous tissue referred to, and which afterwards, from the exhausted condition of the muscles of the back and the weight of the rider, wholly gave way. The bond of union between the bodies of the two vertebræ being severed, nothing would prevent their twisting from their natural position, and in doing so they would press upon the spinal cord. Seeing, therefore, how this can be effected, we can easily understand how paralysis would ensue; and we may be also certain that in a very short time the pressure thus imparted would so far destroy the integrity of the spinal cord that a cure would be altogether impossible.

STRUMOUS ENLARGEMENT OF THE BRONCHIAL LYMPHATIC GLANDS OF A HORSE.

By Professor VARNELL, Royal Veterinary College, London.

THE following case was communicated to me by Mr. Hogben, student at the Royal Veterinary College, who likewise brought me a portion of the diseased organs taken from the horse for my inspection. He informed me that the case occurred in the practice of his brother, to whom he was indebted for its history. Having examined the specimen, I thought it possessed sufficient interest to the pathologist to be worth recording; and for the same reason I was induced to lay it before the members of the Veterinary Medical

Association, to whom I described the morbid changes that had taken place; and, as far as I was able, related its history.

The discussion it elicited was brief, but nevertheless spirited, and the remarks that fell from some of the senior members indicated considerable research and reflection.

The history of the case is as follows:—On the 24th of April, 1863, Mr. Hogben states that he was called upon to attend a horse, the property of Mr. Hopkins, which was said to be off his feed, and that the glands of his neck were enlarged. The owner considered the animal's not feeding well depended upon an irregularity of his molar teeth, which upon examination was found to exist, and accordingly they were rasped level. The man in charge of the horse was likewise ordered to feed him well. Mr. Hogben also arranged to send some medicine, which was to be given daily. Under this treatment the horse very much improved, and Mr. Hogben was not called upon to attend him again until the 18th of June, when he was told that the horse had shown symptoms of abdominal pain; but having carefully examined him, he came to the conclusion that this was due to some affection of the thorax, but of what nature he could not precisely make out. On the 21st a dropsical swelling was observed, extending from the angle of the lower jaw to the sternum, to which he applied some stimulating embrocation, and repeated the tonic medicine. In about a week from this date, namely, on the 27th, the swelling had extended from the sternum as far as the posterior part of the abdomen. The same treatment was continued up to the 1st of July, from which date the horse's appetite became better, and the swelling gradually subsided. About the middle of this month the owner considered the horse sufficiently recovered to do light work. It was not long, however, before the old symptoms returned, and the owner was advised to have the horse destroyed; but this advice was not carried into effect until the first week in October.

Mr. Hogben further states that on opening the thorax he found a considerable quantity of water in the cavity, and also the diseased organs which he brought for my inspection. In the abdominal cavity he likewise noticed a largish tumour in connection with the pyloric extremity of the stomach, but he does not state whether its formation depended upon disease of the stomach itself or some of the adjacent organs.

Such is the account given me by Mr. Hogben. I will now briefly describe the nature of the diseased parts. They consisted of about eight inches of the trachea and its division

into the bronchia, connected to which was a large mass of diseased structure about the size of a child's head, slightly flattened, and having its surface very irregular, but firm. The bulk of this mass was made up chiefly of enlarged lymphatic glands, each of which, when cut into, presented, as near as I can describe, the following appearance:—In some parts they were of a light-grey colour, dotted over with dark-red and lightish-yellow spots, giving to the whole a peculiar mottled aspect. Although the outer surface was firm, yet the inner was somewhat soft. The yellow points, when pressed between the finger and thumb, imparted the sensation of earthy matter being present; which I think may be considered as evidence of the disease being tuberculous, and justifies the appellation I have given to the affection.

It is to be regretted that we have not a more definite account of the condition of the glandular organs in this case. I think it very probable that the tumour noticed at the pyloric end of the stomach consisted of diseased mesenteric glands, and that the symptoms of abdominal pain, above alluded to, depended upon this enlargement mechanically interrupting the passage of the ingesta in its course along the alimentary canal. I further think that the effusion of serum into the thorax was partly caused by the diseased mass pressing upon the veins at the root of the lungs, thereby impeding the return of their contents to the heart, and partly also from the enlarged and congested veins of the tumour itself.

In conclusion I would remark, that I do not think that *scrofula* is a very common affection in the horse; nor that this animal is so predisposed to it as many others. Nevertheless, we meet occasionally with cases. Few, however, are recorded, and very little is said about this disease in veterinary literature.

DISEASED BLADDER OF THE HORSE.

By THOMAS GREAVES, M.R.C.V.S., Manchester.

AT page 113 of the *Veterinarian* for 1860 there is a case of a collection of sabulous matter in the bladder of a horse, recorded by Mr. J. Glover, of Lewes. The bladder and its contents were sent to the Royal Veterinary College, and the whole case is very ably commented upon by Pro.

fessor Varnell, whose remarks and deductions are exceedingly interesting and practical.

A similar case occurring in my practice in August of the following year, I brought to my aid the very valuable suggestions of Professor Varnell, and employed all other means that could be devised, but, as the result proved, all in vain. Notwithstanding I did not succeed in saving the animal's life, I think it a case that is deserving of being recorded, as the practical facts connected with it, and the experience derived from it, are useful and full of interest to the veterinary practitioner.

Its history is as follows:—The patient was a very fine young cart-horse, five years old, apparently in good health, and also in good condition. He urinated naturally up to the time of the attack. The first and only symptom observable was a frequent involuntary voiding of his urine, and especially was this the case when he was down. There was no straddling gait, nor had he exhibited any abdominal pains. My attention was first called to him on August 4th, 1861. This inability to retain, and entire loss of voluntary power to void his urine, had only been observed one or two days previous. There was an absence of all inflammatory or feverish symptoms, and upon examination per rectum, no calculus could be felt; and as the horse had been working very freely, and backing heavy loads, it was concluded that he might possibly have sprained some internal structure, or possibly an over-distension of the bladder from too long retained urine had caused a temporary loss of contractile power in that organ. I bled him, and administered a mild cathartic, with strict injunctions as to rest and being kept quiet. Occasional enemata were also thrown up, and hot rugs constantly applied over his loins. The aloes having operated, the hot rugs were continued for several days, but no perceptible improvement took place. The animal did not even once make the slightest attempt or in the faintest degree show a desire voluntarily to void his urine. I administered various diuretic and lithontriptic medicines; also gave calomel, cantharides, as well as hydrochloric acid in a draught. This treatment went on for days and weeks, but I could not rouse the bladder to contract upon its contents. The urine I removed by means of the catheter two and sometimes three times within the twenty-four hours; then at times I left it for several days, and allowed the bladder to become full, to see if, when it became distended, the animal would make an attempt to empty it; but all was of no avail. The bladder seemed as if in a paralysed state, and its function of

contractility entirely lost. At this stage I called in my friend Mr. Lawson to see the case. He carefully examined it, but he could detect no calculus. There being perceptible a slight thickening about the neck of the bladder, he recommended the application of iodine over the course of the urethral canal, as near to the neck of the bladder as possible. This was done for some time, but with no advantage. During this time the horse's appetite became precarious, and his general health appeared to be suffering, the pulse being above 60, and it became evident that something else must be done, as under the present treatment he was only getting worse. The urethra also was becoming tender and sore from the frequent use of the catheter. From the first the urine had a most disagreeable and strong acrimonious smell; occasionally it was turbid, always viscid, and when allowed to stand in a glass a considerable sediment was deposited.

It was now the 24th of August, and it was quite evident the disease was telling upon the constitution; in fact, the animal was sinking. I therefore seriously reflected upon the mechanical resources hinted at by Professor Varnell; and whilst the catheter was in the bladder, I connected to it the stomach-pump, and injected a quantity of warm water into the urinary cyst, then let it run back, again injected, and again let it run back. But this did not answer the purpose, for the water I injected only passed upon and over the sediment in the bladder, and ran off again from it without having been mixed with it. It then struck me that if I had my patient on his back, and my hand up the rectum, the sediment in the bladder would thus be turned upside down, and I could then inject large quantities of water into the bladder, and by gentle agitation with my hand, commix the sediment and the water, and then let it pass out through the catheter. I, therefore, had my patient at once placed upon his back. Mr. Lawson, jun., who had taken great interest in the case, was present, and kindly lent me his assistance. On introducing my hand, I now for the first time (it having hung pendulous and out of reach previously) felt a considerable quantity of soft sabulous matter, and judged it, whilst balancing it in my hand, at arm's length, to be several pounds' weight. I now pumped a good quantity of warm water into the bladder, and gently commixed it as indicated above; but in attempting to get it to run back again, two difficulties presented themselves,—the first was, the fluid would have to run up hill through the catheter and sheath, whilst the horse lay upon his back. I overcame this difficulty by having him turned upon his side;

but here the second difficulty presented itself, viz., the mixture in the bladder was so thick that it could not run through the small fine passage of the catheter. What was to be done? It appeared to me of vital importance that the contents of the bladder should be evacuated, as this dead weight was prostrating the energies of the organ. As a *dernier ressort*, I therefore resolved to cut down through the perinæum upon the urethral canal, and introduce a gutta-percha tube of larger calibre. I did this, and out gushed, in a continued stream, a thick muddy mixture for two or three minutes. I again and again washed out the bladder, and then let the patient get up. But even after this there was no improvement whatever; he never once made the slightest attempt voluntarily to void his urine, and it was removed from him daily. Occasionally I injected diluted hydrochloric acid into the bladder, also gave tonics, and did everything that could be thought of; but he continued gradually sinking until September 30th, when I consented to have him destroyed. There had been a little sediment perceived once or twice in his urine since the operation, but nothing to speak of; its smell, however, was extremely offensive.

Post-mortem Appearances.—The kidneys and ureters were quite healthy, and not a particle of calcareous deposit existed in the bladder, but the mucous membrane of that organ was of a leaden hue; it was likewise considerably thickened all through its entire extent, and especially so about the neck of the bladder, which was in a state of gangrene and emitted an insufferably offensive odour.

OBSERVATIONS ON SOUNDNESS.

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from vol. xxxvi, p. 668.)

SPLINT, or splent as it is sometimes designated, is a disease of the metacarpal bones, very frequently met with now-a-days; indeed, it is difficult to find an animal without a deposit of bony matter somewhere near the carpal joint. Every person having the least pretension to a knowledge of horseflesh believes himself fully competent to give an opinion as to the soundness of a horse with splint. There are many views published with reference to this disease, and various

are the questions put to a veterinary surgeon when called upon to report upon such cases. It is interesting to learn what our forefathers said about this affection. "Markham's Masterpiece" contains several articles upon it. For the edification of your readers who have not this work in their possession, I will make a few quotations by way of comparison. "A splent is to the outward feeling a very gristly or rather a hard bone, sometimes as big as a hazel-nut, sometimes as big as a walnut, according to the age thereof, growing upon the inside of the fore leg, between the knee and the upper pastern joint, and sometimes just [underneath and close unto the knee, which is, of all others, the most dangerous splent, and doth the soonest make a horse lame. It cometh by travelling a horse too young, or by over pressing him with heavy burthens, whereby the tender sinews of his legs are offended. Now for the knowledge thereof it is easie, because it is apparent unto the eye, and most palpable to be felt. The cure according to the opinion of the ancient farriers is, to take an onion, and picking out the core, put into it half a spoonful of honey, and a quarter of a spoonful of unslacked lime, and four pennyweights of verdigrease; then closing up the onion, roast it in hot embers until it be soft; then bruise it in a mortar, and as hot as the horse can suffer it, lay it to the splent, and it will take it away, but in any case cut no skin." Many other formulæ are given in this work. The actual cautery is strongly recommended in some instances, and so is the knife; for example, "Others used to slit the sorance with a knife the whole length of the splent, and then with a cornet to open the slit, and lay the splent bare, then to make about the wound a coffin of clay all open to the top; then take boar's grease made scalding hot, and pour it into the wound until the clay coffin be full, then let it rest until the grease be cold; after that let the horse rise, and this with once dressing will take the splent clean away without any blemish or eye-sore."

Again, after speaking of other remedies, such as a *snail and salt*, &c., Markham writes thus: "Now, after all these former practices, you shall understand that the cleanliest way to take away a splent is, first, after you have cast your horse, with a hazel stick of a pretty poise and bigness, gently to beat the splent at the first, then by degrees a little harder and harder, till the splent grows soft in every part, then with the point of your lancet let out all the blood and water; then take a brickbat, and having laid it on the fire, when it is exceeding hot fold it in a red cloth, and therewith rub the splent and smooth it upon the top till

you have dried away the blood, and that no more moisture cometh out; then take of pitch, of rozin, and mastick, of each a like quantity, melt them well together, and being hot lay it over and all about the splent; then clap flock of the colour of the horse's leg upon it, and so let it rest upon the splent until it fall away of itself; and, if when it is fallen away, you perceive any part of the splent remain behind, which hardly will be if it be orderly beaten; then you shall dress that remaining as you did the other before, and the splent will be perfectly cured." Then he goes on to say, "The surest way is to use a sharp knife," &c., &c. After giving special directions as to the mode of laying on bandages to stay the falling down of the humours, he lays great stress upon the age of the moon: "And also you must know that all splents, spavins, or knobs, must either be taken away at the beginning or after the full of the moon." I am afraid our present practice is so much at variance with that pursued in times gone by, that many of our failures must be attributed to a want of knowledge of the humours and the influence of the moon; that is, if our forefathers were more successful than ourselves. Bracken believed splint derived its name from the fact of its serving to strengthen the parts, as pieces of wood would strengthen a splice.

It appears to me that splint has been disposed of in a manner somewhat too summarily by some of our English authors. The more I see and learn of splint, the more I am inclined to view it as a great evil, as it is to depositions of bony matter in the fore limbs that we may attribute much of the want of that elasticity and pleasant action we used to have formerly in hacks and roadsters. For my own part I seldom ride a pleasant-going horse, or one which can be said to constitute a good hack. There is an absence of fine loose free action, and in place of it is felt rigidity—a sort of stilty movement of the front limbs. Whether this is referable to a deterioration in the *breed* of horses, or the fact of their being trained too early, it is not my province to notice at present; suffice it to say what I have stated I believe to be a fact.

Blaine says, "As the general nature of splint is that of a conversion of what was before ligament into bone, so it is evident, in this point of view, that a splint can seldom, if ever, be wholly removed; but from the process of absorption in the machine in the latter periods of life being greater than the deposit, so it happens that the *extra deposit* beyond the simple ossific deposit, and which extra deposit is that which constitutes the bulk of the splint, is removed in old horses,

or, as grooms express it, they 'wear away.' A splint placed at the lower end of the cannon bone is still more prejudicial than when situated higher up the leg."

Youatt in his work on the horse writes thus: "Splints, then, do not necessarily cause unsoundness, and may not lessen in the slightest degree the action or value of the horse. All depends on their situation." Coming down nearer to our own time we find a more extensive view is taken of the affection we are discussing. Percivall in his Hippopathology has half a score of pages upon the subject. He says "The name of *splint* or *splent*, derived from the Italian word *spinella*, a splint, would seem first to have been used to denote the bone in or upon which the disease so called is seated, and afterwards the disease itself. The eight small bones in our modern nomenclature called *metacarpal* and *metatarsal*, in their position along the sides of the *cannon bones*, or *great metacarpal* and *metatarsal* bones, have so much the aspect of splints (the old name for which is *splents*) or splinters off the shaft of the large bones to which they cling, that we can readily imagine how they came to be called *splint* or *splent bones*, and as easily understand how the appellation of the bone came to be transferred to the disease. The definition of a splint is simply this,—that it is an *exostosis*, *i. e.*, a callous or osseous tumour, growing upon one, or contiguous to one, of the splint bones. Were the tumour not of such a nature, or being of such nature not so situated, we should not call it a splint." He has quoted from Solleysel, who gives five kinds of splint; *videlicet*, "simple, the pegged or double splint, the third which ascendeth to the knee, the fourth Fusee, the last osselet." "The ordinary site of splint is about the middle of the leg, rather nearer to the knee than to the fetlock. A splint upon or immediately under the knee-joint is an affair of complication and danger compared to one in the ordinary situation, and so far we could and ought to make distinctions between splints; further than this, however, all specification appears groundless and useless." Blaine is of opinion the *lower* the splint the more serious it is to be considered. Here there is an evident clashing of opinions.

The pathological history of splint.—“How happens it that this useful fibro-cartilage becomes transubstantiated into useless bone? The immediate or proximate cause we believe to be increased action, amounting in some instances to inflammation, set up in the vessels of the fibro-cartilage, whereby hypertrophy, or, in such an ossific diathesis as the horse species is known to possess, exostosis is produced. Any

violence or injury to bone, it is notorious enough, is in horses especially apt to be followed by exostosis; and if the hurt be to a joint, or in the vicinity of one, by ankylosis, partial or complete, as well; so prone is the economy of the horse to what medical men call ossific inflammation."

"The *cause* of splint, now that its nature has been ascertained, will on reflection strike us to consist in anything that may occasion undue or sudden pressure upon the splint bone, whereby the cartilaginous union between it and the cannon bone is stretched or strained, and so has its capillary circulation increased in such a manner or measure that conversion of it into bone is the result, followed or not by exostosis as the case may be. Over action, or over weight at a tender age is the ordinary cause of this. In the anxiety there is to bring young horses into use, in the precocious practice of breaking, and racing, and hunting that exists, we cannot feel surprised at imperfected parts giving way, or being reconstructed in a different manner from the original design. Nature is forced beyond her powers, and, finding that the soft and elastic material placed for a certain wise purpose between the splint and cannon bones, insufficient against weight and force, osseous material is substituted for it. Even before breaking or using the colt commences, however, the mischief may be perpetrated. A gallop, a jump, a gambol in the field or yard, may, even in the foal, occasion the throwing out of a splint. Again, a blow or other external injury may produce a splint, though this is comparatively a rare case. To whatsoever cause, however, it be referable, the fact is notorious enough, that hardly any horse completes his fifth year without a splint, either latent or demonstrable; for, as we have before remarked, exostosis or tumour is not absolutely necessary to constitute splint." "Splint rarely produces lameness."

I have quoted somewhat largely from Mr. Percivall's Hippopathology because that gentleman has so ably handled this subject; still I must be permitted to say I do not agree with all he has written upon it. I do not think splint has up to the present time been properly and distinctly understood by horsemen generally. Mr. Percivall's definition of splint is this, "that it is an exostosis," *i. e.*, a callous or osseous tumour, growing upon one, or contiguous to one, of the splint bones. Were the tumour not of such a nature, or being of such nature not so situated, we should not call it a splint." We learn from this and other observations made by him, as well as some other authors, that a splint must be

situated upon or contiguous to one of the small metacarpal bones. It will be necessary that we look rather closely into this subject, and endeavour to find out whether we have or have not exhausted it. In the first place it will be well to learn if an exostosis *not known* to be connected with the small metacarpal bone should be designated a splint; for without we settle this question it will be difficult to deal with it. Reference has been made before to the absorption of the fibro-cartilaginous matter, and deposition of bone between the small and large metacarpi. Suppose the fibro-cartilaginous matter be absorbed, and its *own quantity of bone substituted*, and no more, I would ask if it is likely that many persons will detect splint during the process of examination as to soundness? I hold a specimen in my hand taken from a pony twenty-three years of age, which consists of the carpal joint of the near leg, *i.e.* the lower end of the radius; *all* the bones of the carpus, with the three metacarpi; the scaphoid has a deposit of bony matter the size of a hazel nut anteriorly; the trapezoid and os magnum are cemented the one to the other with bony matter; the small (inner) and large metacarpal are so amalgamated that it would be impossible for any person to distinguish them, or to state where the one commenced or the other terminated (during the life of the animal, of course, I allude to). The pony was put under treatment some years ago, and I believed I had *cured* the splint. The kind of cure was apparent immediately after death. Having seen so much of this kind of thing, I may challenge the most sensitive hand to discover such a case in the living patient as that which now lies upon my desk.

I have been accustomed during my practice to term all exostoses, splint, if found in the neighbourhood of the small bones, whether on the inside or outside of the leg. Sometimes I have (when they have been situated nearer to the anterior part of the large bone than to the posterior) named them nodes; which term I have believed applicable. Mr. Percivall, however, was of opinion that the term node is *in-appropriate*. If the term splint be confined to the deposit (or substitution of bony matter between the small and large metacarpal bones) then it becomes absolutely necessary to give some other name to those excrescences so frequently met with upon the large bone. For my own part I see no objection to the term splint being employed in *all* cases which may be found to exist in the immediate neighbourhood of the small metacarpal bone. I do not see that we have need to manufacture difficulties about terms. That veterinary nomenclature is defective no one can doubt, and it may be worth one's while to set

about effecting some improvement in that branch of our literature. With reference to the pathology of splint, I think we have arrived at a satisfactory solution of the disease, so far as this is concerned; but with regard to the *effects* produced by splint we are not so happy in our remarks. It has been said that splint seldom produces either lameness or defective action. To this observation I cannot subscribe; as in many cases I have found both splint and other bony growths about the metacarpal bones produce lameness and defective action likewise. If we take into consideration the anatomy of the metacarpal bones, and then reflect upon the physiology of the same parts, we shall, I think, ascertain that both lameness and irregular or defective action are often the result of these deposits. I have several morbid specimens in my possession which display unmistakable evidences of inflammation having been centred in the bones themselves. In all these, lameness was of course apparent, and so bad in some of them, that I advised the animals should be destroyed. I am of opinion a deposit of bony matter cannot exist between the small and large metacarpæ without interfering in *some degree* with the action of the limb. Take, for example, a splint situated midway down the small bone; all the regular courses have passed away, and a portion of the fibro-cartilaginous matter has been substituted by osseous matter rendering it as firm as if a nail had been passed through it. Now, if the action of the inner small metacarpal bone be what a *mechanic* would be led to believe it is on examination, namely, a downward movement, and perhaps a little outwards also; then a tie or bind midway must of necessity produce some change in the action of the limb. If to a board a small splinter of wood were fixed by means of a piece of india-rubber, and a weight placed upon the upper part of the small splinter, in a precisely similar manner to what is performed upon the bones of the living horse, it will give a fair idea how small a liberty may be taken in nailing the small piece of wood to the larger, and what the result will be. I have every reason to believe that, as the situation of the ossific matter is changed, so will a change take place in the action of that part of the fore leg of the horse. For many years I have paid especial attention to the action of horses having splints. As these deposits approach toward the carpus, the more do they alter the action of the limb, and in some cases they produce an irregular or stilty movement of the whole leg. The shape of the ossific deposit will exercise much influence in producing lameness. I have always found that when these deposits are *spiculated*, they produce

much irritation of the periosteum, and will probably end in lameness. To the question, Does splint constitute unsoundness? I will append the decision of Lord Chief Justice Tindal.

Oliphant, at page 83, writes as follows:—

“A splint, like a bone spavin, is an excrescence or bony deposit on the leg of a horse, and the danger in both cases is the probability of their interfering with his action; the bone spavin, by preventing the proper flexion of the joint, and the splint, by pressing on the sinews of the leg. Lameness is thus produced by each; by bone spavin nearly always, by a splint sometimes. It entirely depends on the situation of the bony tumour on the inside of the shank-bone, whether a splint is to be considered an unsoundness. If it is not in the neighbourhood of any joint, so as to interfere with its action, and if it does not press upon any ligament or tendon, it can be no cause of unsoundness; and although it is often very unsightly, it does not lessen the capabilities and value of the animal.”

“In an action on the warranty of a horse ‘to be sound wind and limb *at this time,*’ the breach of which was lameness, produced by a splint, it was given in evidence that a splint might or might not be the efficient cause of lameness, according to its position, its size and extent; that the splint in this instance was in a very bad situation, as it pressed upon one of the sinews of the leg, and was calculated to produce, when the horse was worked, inflammation of the sinew and consequent lameness. Lord Chief Justice Tindal said, ‘It now appears that some splints cause lameness and others do not, and that the consequences of a splint cannot be apparent at the time, like those of the loss of an eye, or any other blemish or defect visible to a common observer. We therefore think that by the terms of this written warranty the parties meant that this was not, at that time, a splint which would be the cause of future lameness, and that the jury have found that it was. We therefore think that the warranty was *broken.*’”

I may with truth assert that ninety-nine horses out of every hundred examined by me have something analogous to splint situated in the vicinity of the small metacarpal bone, and the question invariably put is the following: “Do you think that splint will come against him?” These are the words generally made use of. Now, how are we to answer the question? By looking closely to the situation of the deposit with a view to ascertain if it interferes with tendon or ligament, or if it is likely to do so at any future time. This is the reply one would most likely receive: this reads very well

upon paper, but it does not turn out such an easy matter in practice. Many horses are examined with large deposits of bone adhering to the small bone and extending inside of it, still they are not lame, although the ligament is continually rubbing against it. This can only be accounted for from the fact, that all inflammatory action has passed away, and the parts have accommodated themselves to change of structure. Two cases were brought to me this day; one with a large exostosis immediately under the knee of the right leg on the *outer side*, which produced lameness for a considerable time. That patient has been discharged cured of lameness, and is to be sold. The other case is that of a gray mare having small spiculi of bony matter both on the inner and outer side of the right leg, about two inches below the knee; she is excessively lame, and has been so for some time. These cases, as I have said before, are most troublesome.

Is a horse sound with splint? If we turn to the definition of soundness as laid down by the first lawyers of Great Britain, and which will be found in my first paper for January, 1863, it will there be learned that *sound* means *perfect*; if, therefore, a leg to be sound must be perfect, I think there will not be much difficulty in our way in ascertaining the soundness or otherwise of an animal affected with splint, more especially when we take into account the variety of forms under which these defects present themselves.

If it were possible to state the *precise* situation and *extent* of the ossific deposit, we could in that case give a clearer and more definite answer to queries put to us in our examinations of splints. Morbid anatomy enables me to state that it is almost impossible during the lifetime of the animal to *know* the precise situation and extent as well as *course* of many splints. In cases of examinations as to soundness *prior* to purchase, these affairs are easily got rid of, should lameness take place subsequently; but if warranties are given in *similar cases*, and the subjects of those warranted fall lame within a reasonable time after being sold, I believe in nine cases out of ten a jury would find for the plaintiff.

(To be continued.)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from vol. xxxvi, p. 671.)

IN my last communication we finished the consideration of those plants belonging to the natural order Solanaceæ, which are most likely to be brought under the notice of the veterinary surgeon; and before entering upon another order of plants, I would say a few words as to the importance of a thorough knowledge of those recently commented on. It must, I think, at the outset be admitted that plants possessing such properties as the *Atropa Belladonna*, the *Hyoscyamus niger*, the *Nicotiana Tabacum*, and the *Solanum Dulcamara*, whether administered as medicinal agents or received into the system of animals in sufficient quantities to produce poisonous effects, have more than ordinary claims upon our attention. Found, as many of these plants are, growing in considerable quantities in our own immediate neighbourhoods, and sufficient in many instances to be available for the manufacture of the different preparations which by concentrating their active principles are more convenient for administration as medicinal agents, the opportunities thus afforded should be made use of by us for obtaining the different parts of the plants at those seasons when their active principles are most developed, thus lessening in a great degree the uncertainty of the action which is too apt to result from the exhibition of those that we obtain from the wholesale manufacturer. Nor is this all, for when, as not unfrequently happens (although nature as a rule has implanted a peculiar instinct by which animals avoid these dangerous plants), an animal, from hunger, or a vitiated appetite, has partaken of these plants in sufficient quantities to cause poisonous action, some knowledge of the physical characters by which these plants can be recognised will be expected from those whose especial calling it is to point out the causes while we endeavour to relieve the effects. I allude to the qualified members of the veterinary profession. Surely no one at the present day will be unreasonable enough to assert that a science which teaches these things has no claims upon our consideration as a profession. Neglected as the science of botany at present is as a branch of our education, we may rest assured that its claims will continue to force themselves more and more upon our attention;

and let us hope that the day is not far distant when it shall occupy its true position in connection with those other branches of science which are already deemed essential to the proper education of the members of our profession.

The next natural order of plants that will be brought under notice is one which, like the preceding, contains many plants of great interest, viz., the natural order Ranunculaceæ, or Crowfoots. Like the Solanaceous tribe, it belongs to the class of Exogens, but, unlike it, to the sub-class Thalimifloræ (flowers furnished with both a calyx and corolla, the latter consisting of distinct petals; stamens always hypogynous, or united to the sides of the ovary). The following will be found a brief description of the botanical characters of the order:—

“*Ranunculaceæ, Crowfoots.*—*Sepals*, 3—6, usually deciduous, sometimes unequal. *Petals*, 3—15, in one or more rows distinct, sometimes unequal, sometimes partly or wholly missing. *Stamens* indefinite in number; hypogynous. *Carpels* numerous, seated on a torus, one-celled or united into a single many-celled pistil. *Fruit*, either consisting of dry achæmia, or bacchate with one or more seeds, or follicular with one or two valves. *Herbs*, or very rarely *shrubs*. *Leaves* alternate or opposite, generally much divided, with the petiole dilated, and forming a sheath half clasping the stem. *Stipules* occasionally present. *Hairs*, if any, simple. *Inflorescence* variable.” (Lindley.)

This order comprises between six and seven hundred species, some of which are found growing in most parts of the world, but more abundant in moist soils in the temperate parts of Europe and Asia. A great variety of plants are classed under this order, many being found growing wild in our pastures and woods, such as the Crowfoots and Anemones. Others are cultivated on account of the floral beauty they impart to our gardens, such as the Larkspur and Peony; while again others possess very powerful medicinal and poisonous properties, such as the Aconite (Monkshood), the Hellebore, &c. A powerful narcotic and acrid principle is possessed in a greater or less degree by all the plants in this order. Several of them have features of peculiar interest to the veterinary surgeon, and I shall therefore devote some considerable space to their notice, commencing with the *Aconitum napellus* (Monkshood), which I shall proceed with in my next communication.

(To be continued.)

CASES OF INDIGESTION, ACCOMPANIED WITH COLIC, GASTRO-ENTERITIS, &c.

By "ARGUS."

AN unusually large number of the horses of one of the batteries of Artillery under my charge have suffered of late from severe attacks of indigestion, colic, and gastro-enteritis, complicated in some instances with hepatic disease. During six weeks the number of cases admitted for treatment has been from one to three daily; while in the other battery only about five horses have been attacked during that time, and of these two were very slight cases. The system of stable management, feeding, &c., is the same as nearly as possible in both batteries; but the horses of the healthy one are under cover in stables, while those of the sickly battery are picketed out in the open air, without anything to protect them from sun, rain, wind, or night dew. Nearly all the cases admitted from the latter were of a severe type. Six horses have died, and as the *post-mortem* appearances were peculiar, I send you a brief description of the result of my examination of the bodies.

In *all six* cases there was inflammation of the villous coat of the stomach and the mucous membrane of the small intestines; *all six stomachs had several large irregular ulcers*, or I should say, ulcers with irregular, jagged edges, along the line of junction of the cuticular with the villous lining of the stomach. In one stomach there were two or three small ulcers upon the villous lining membrane about its centre. Three of the stomachs were ruptured, and in each instance the rupture had taken place along the line occupied by a continuous chain of these ulcers. One such chain ran almost from the cardiac to the pyloric orifice, and the stomach had there given way. In these cases the contents had escaped into the abdominal cavity and produced peritonitis. The ulcers, though most conspicuous along the line of demarcation, were not confined to it, but were to be seen here and there on the cuticular membrane. In two of the stomachs there were abscesses (one in each) close to the ulcers, having very thick walls, and an exceedingly small cavity containing a little pus mixed with black granular matter. Each abscess had a small opening inwards into the cavity of the stomach, and their situation in both cases was on the cuticular membrane. To the edge of the open mouth

of each of these abscesses a couple of bots were attached; and to the ragged edges of some (not all) of the ulcers, in like manner, one, two, or three bots were found clinging. Five of the six stomachs were immensely distended with compact grass and grain—so much so that the medicine administered by the mouth previous to death was found to have been absorbed by the hard dry mass in immediate contact with the cardiac orifice, and not to have got beyond about the first eighth of the contents of the stomach. Even those stomachs which were ruptured were found in this distended state, although some of their contents had escaped. The sixth stomach was also of large size, but filled with liquid containing undigested grain and grass. In four of the six cases there was disease of the liver (chronic), that organ being much diminished in size, of a light-clay colour, and remarkably soft and easily broken down.

The symptoms in all these cases were almost exactly the same. On first admission, dulness, the head hanging low, staggering gait, small and almost imperceptible pulse, perspiration generally over the whole body, the pupils of the eyes distended, and the horse apparently unconscious of all surrounding objects. When the head was raised to give a draught the horse became giddy and staggered; sometimes he fell if the head were repeatedly raised, and if the attempts to administer the medicine were persevered in the animal became greatly distressed, his breathing alarmingly accelerated, and his movements involuntary and unsteady, even to the extent of falling down head foremost and rolling over. After a couple of hours the patients became covered with a cold perspiration, the respiration quick and difficult, and the countenance expressive of the most intense suffering. The horse would walk round his box as if trying to escape from himself, alternately running his nose or tail into one of the corners; then turn round, paw the ground, and throw himself down with a groan. In three cases there was vomiting through the nostrils, the smell arising from which compelled those in the box to leave it for a minute or two. One horse was so violent that it was impossible to go near him for some time, until, in fact, he had become exhausted by the paroxysm of pain. In all those cases that proved fatal the brain became affected soon after admission. All treatment failed to produce any change for the better at any period of the disease, although everything was tried that under such circumstances is generally found to afford relief. The horses rapidly got worse, and died in from five to twenty-five hours from their being first attacked.

Have similar cases been seen in England—I mean with reference to the *post-mortem* appearances? Of course I know that cases of gastritis occur with symptoms like those I have described. *But are ulcers often found in the lining membrane of the stomach?* These horses were in good condition, and apparently good health, up to the time of the acute attack. In the human subject, when ulceration of the stomach exists, the patient at times suffers excruciating pain, and shows by his appearance and state of health generally that there is some serious internal organic disease. Nothing of this kind was observable in any of these horses. I showed one of the stomachs to our surgeon, and he agreed with me that the ulceration must have been a work of time, that the state of things we saw could not have been produced by the acute attack, and within a period of twelve or fifteen hours.

There was no reason to suspect that the horses had been poisoned, and indeed the symptoms were not those of poisoning—certainly not of mineral poisoning: there was no purging, no salivation, or discoloration of the mucous membrane of the mouth, fauces, œsophagus, &c.

Do bots produce ulceration of the stomach? I know that in the majority of cases in which they are found they have done no harm; but may they not occasionally produce mischief? I am aware that professional men differ in opinion upon this subject. It is, to say the least of it, a strange coincidence that bots were found clinging to the edges of some of the ulcers, and to the mouths of both abscesses. There were bots in all the stomachs, though in some they were not near the ulcerated part. I ought to tell you that the horses of this battery had recently come from another station, where they were in stables. Here they stand in the open air, exposed to the influence of the direct rays of an Indian sun (in the month of July) one day, and to torrents of rain the next, being alternately reeking wet or roasted by a burning sun. I have seen them standing for two or three days continuously without ever having a chance of becoming dry even for an hour, and then perhaps the weather suddenly clears up and out comes the sun more fiercely hot than at any time of the year. For days the poor brutes have to stand up to their pasterns or fetlocks in wet and mud. The natural effect of this must be to render the horses more liable to be attacked by disease, and less able to bear up against it when attacked; and yet Government will not sanction the erection of any more stables!

The general food of horses on this side of India is grain, rudely broken between two stones, and then steeped in

water for an hour. I think myself that this steeping of grain ought to be stopped, for even if it be properly done, and only for the time ordered, it is apt to produce colic, &c. But I *know* that it is *often* left soaking for many hours instead of the half hour or hour directed; and on two occasions I discovered that the grain for a whole regiment had been put in water overnight for the morning's feed. This accounts for the numerous cases of colic, gastritis, enteritis, and ruptured stomach, &c., which occur out here. Still I cannot see how or why it should produce ulceration of the lining membrane of the stomach without bringing on an acute attack of gastritis, or one of a sub-acute or chronic kind with symptoms of an unmistakable character. I have heard it stated that the use of steeped grain was the cause of this gastric ulceration. If it be so, why do we not come across a larger number of deaths in which the stomach is found in the state of those I have described? I have been many years in India, and have never neglected to open every horse that died under my care, but until now I have seen no ulceration, and only two or three times abscess within the stomach. We are now feeding upon *parched* grain and barley, broken and mixed with bran; and for some time past we have had no cases admitted, not even slight ones.

If you or any of your professional readers have seen and treated gastro-enteritic attacks of the peculiar kind alluded to above, you may be able to throw some light upon the cause. Please do it if you can.

In addition to the six troopers, an Arab belonging to one of the officers of the same battery has died. The horse was taken ill at half-past ten a.m., and died at three p.m. same day—*i. e.* in four and a half hours! *Post-mortem* examination showed ulceration of the cuticular and villous lining membrane of stomach, with rupture of its coats to the extent of about six or seven inches.

COMMUNICATION, &c., FROM THE GHOST OF AN INDIAN VET.

INDIA; Oct. 21st, 1863.

DEAR SIRS,—I inclose you an extract from an Indian paper, whereby you will see the fix our Government is getting into through its treatment of their veterinary sur-

geons. Our warrant is still a dead letter, and we remain on our old rate of pay. Promotion has been made in our presidency, but there is no increase of pay with it; truly an empty honour—and one the individual would gladly be without, as it increases his subscriptions to his fund, mess, &c., &c.

Again, I warn aspiring vets to think well before they take the false leap. Only fancy a great Government like ours being obliged to *hire* a private veterinary surgeon to treat their valuable horses.

The '*Englishman*' writes:—"The Government appears to be as badly off for horse-doctors as for man-doctors; and is obliged to go into the market for *ticea* veterinary surgeons, having none of its own available and at hand. There are two batteries of artillery and the Lahore Light Horse at Barrackpore with glanders and farcy in the stables, and horses being shot in numbers, with no veterinary surgeon to look after them; consequently the Government has hired a horse-doctor from one of the Calcutta livery stables at 300 rupees a month. Can it be the case that the 'vets' in England are holding back as well as man-doctors, and want a little amalgamating to induce them to come forward? It would appear so."

HORSE WARRANTY.—THE RIG.

By J. COOPER, M.R.C.V.S., Market Weighton.

MR. DYER says:—"In racing language, and in hunting phraseology, a horse means an entire animal, therefore if a horse is to be considered *sound* he should be *entire*. But it has been the custom for centuries to emasculate animals, and to consider an animal so operated on as a sound one, as regards this part of his animal economy."

Two propositions are here laid down:

1. That a horse to be sound must be entire.
2. That, the custom being to emasculate, an animal emasculated may also be considered sound.

Assuming Mr. Dyer to have here exhausted the category of soundness, the logical deduction from these premises is, that an animal neither entire nor yet completely emasculated *is not sound*.

By rig is ordinarily meant an animal with one testicle only taken away.

Mr. Dyer further says, "The warranty should have stated the animal was a gelding," in which case he appears to think the purchaser would recover.

I happen to know that the purchaser told the seller that he wanted a "young sound carriage horse, to make fresh during the winter, and sell for London work in spring."

A "gelding" may, therefore, be fairly taken to have been in the minds of both at the time of sale. Why, therefore, should not the word "gelding" be read for "horse" in the warranty as representing the animal both parties were dealing with at the time of sale?

But even then must not the purchaser show fraud in the seller to recover?

GLANDERS, A RESULT OF IMPROPER FEEDING.

By T. WALLEY, M.R.C.V.S., Weshpool.

THE perusal of the communication on glanders, in your December number, by Mr. A. C. Shaw, brought to my remembrance two cases which bear out in many particulars the excellent remarks he there makes, viz., as to many of the tubercular deposits and extensive exudations that the horse is liable to, being in a great measure due to non-nutritious, or an insufficient quantity of food, combined with an irregular mode of feeding.

The animals whose cases I am about to relate had been fed principally upon hay, Swedes, and French wheat, given at irregular intervals and in improper quantities.

I have also under my care at the present moment a hack and harness horse that had been fed largely on linseed mashes, suffering from low fever, derangement of the liver, and severe cough; but under the influence of nitro-hydrochloric acid he is gradually regaining his wonted strength.

CASE 1.—A bay cart-horse, seven years old, had received a kick from another horse on the point of the shoulder, two years previous to my having seen her, which was on the 5th of May of the present year. She had been blistered and setoned by a farrier several times, but without any benefit. The shoulder, as also the opposite one, was considerably enlarged and hard, with much lameness present. The mare had also an enlargement of a chronic nature on the poll.

Under the circumstances, I advised the owner to destroy her, which was done, and the following were the *post-mortem* appearances. Both flexor brachii were much enlarged, and in their structure were several sacs, whose walls were hard and fibrinous, containing a yellow tuberculous deposit, something analogous to the deposits found in the lungs of cattle in tubercular phthisis. The articulation of either humerus with the flexor brachii were diseased; the cartilage being removed, in some places, from the left, by attrition consequent upon the non-secretion of synovia. The cartilage of the right was not removed, but there was ulceration of the bone beneath, and a large quantity of ossific matter thrown out around the head. There was also an encysted abscess on the poll, of the same nature as those described in the flexor brachii, with ossific matter on the surface of the atlas. She was likewise the subject of splents, and ossification of the lateral cartilages. I may, moreover, mention that, on laying open the double colon at its second turn, near to the attached border, I discovered a cluster of ulcerated spots, radiating from which the intestine was drawn up in puckers; and near to each spot, and adhering to it, were a large number of strongyles. These may probably have given rise, in the first place, to the ulceration. The animal, however, did not evince any symptoms indicative of such a state of intestine during life.

This case shows that not only must there have been hereditary tendency to ossific deposit, but also to deposits of a strumous nature, requiring only slight exciting causes to favour their development.

CASE 2.—A roan gelding, fourteen years old, the property of the same farmer as the first case, a few days prior to the 8th of May, 1863, evinced the following symptoms:—Great debility; pulse quick, and weak; a copious discharge of fetid, watery pus, from both nostrils; appetite slightly impaired; serous infiltration into the cellular tissue of the upper lip, obstructing the passage of the air, and causing, consequently, difficult and stertorous breathing. He had been ailing for some time, and for some years had shown an inability to void his urine at times. He had also been the frequent subject of inflammatory œdema. On the morning of the 8th he died in great agony; great rigidity of the muscles of the neck being present for some little time previous to dissolution.

Post-mortem appearances.—Chronic disease of the lungs, there being numerous abscesses (varying in size from a large

orange to a nut) in their substance, one of which had burst and penetrated a bronchial tube, and its contents passed up the trachea, causing suffocation, the immediate cause of death. The sinuses of the head were filled with thin pus of a fetid character, and the mucous membranes had a dirty, unhealthy appearance. On examining the urinary organs, the bladder was found full of urine, which had a quantity of mucus floating in it. On passing my hand along the urethral canal, I felt a hard prominence near to its termination at the glans penis. On removing the surrounding tissues, the obstruction was found to consist of a hardened mass of the sebaceous secretion from the inside of the sheath, moulded to the exact form of the glans on one side, and the opening of the urethral canal, the lip-like portion; and in that part there was a large portion of calcareous matter deposited. Both vesiculæ seminales were greatly enlarged, and filled with a thick, glutinous fluid, of a white colour, somewhat resembling the white of an egg, and projecting into the interior of one was an hæmorrhagic tumour. These enlargements produced pressure on the neck of the bladder, giving rise to paralysis of it; hence (in conjunction with the mass of sebaceous secretion in the glans) the retention of urine at times.

The deposition of fibrine in the areolar tissue of the hind extremities gave evident proofs of the frequent attacks of the so-called inflammatory œdema. This goes to establish the fact that local dropsy often coexists with, and is the result of, chronic disease of the lungs.

This animal was also the subject of ossification of the lateral cartilages.

PROGRESS OF THE MURRAIN.

The *Roman Courier* tells of the great spread of the cattle disease throughout the Roman States. No less than 22,000 head of cattle have perished by this murrain, which has now attacked also the horses. As most of the farmers of the Campagna di Roma and the neighbourhood have their small property in live stock, this disease has been a terrible scourge to the province.

Facts and Observations.

HONOURS CONFERRED ON A VETERINARY SURGEON.—At the last general meeting of the Royal Geographical Society, Sir Roderick Murchison, president, in the chair, Mr. Fleming, V.S., Military Train, was proposed as a Fellow by Sir Harry Parkes, C.B.; the proposition was seconded by Sir R. Murchison and W. Spottiswoode, Esq. The Council also tendered him a unanimous vote of thanks for his exertions on behalf of geographical science.

In the Anthropological Society of London, in September last, Mr. Fleming was elected a Fellow on the proposition of Dr. Hunt, the president of that society, for researches in Ethnology.

At the last meeting of the British Association at Newcastle-on-Tyne Mr. Fleming likewise had the honour, at the request of the Royal Geographical Society, of reading two papers in the geographical and ethnological sections; one on the 'Geography of Eastern Mantchuria,' and the other on the 'Ethnological distinctions between the Northern and Southern Chinese, and particularly of the people beyond the Great Wall of China.'

[As honours conferred on medical men are always noticed in the columns of the *Lancet*, we have thought that those distinctions, which must have been worked hard for by a veterinary surgeon, might not be unacceptable when made known to the readers of the *Veterinarian*, and especially to those who wish to add to the reputation of our rising profession; for if one member be honoured, all participate in it: we therefore with pleasure record the above.]

ATMOLYSIS.—In a previous volume (*Veterinarian*, vol. xxxv, p. 406) we gave an account of Mr. Graham's mode of analysis by liquid diffusion, called by him dialysis. Prosecuting his scientific investigations, he has applied a similar process to the gases to which he gives the above name—atmolysis. He finds the molecules of different gases to pass through tubes of unglazed earthenware, or plates of graphite, with unequal velocities, so that a separation more or less complete of mixed gases, can be effected by means of an *atmolyser*. This is a narrow tube of unglazed earthenware, such as a tobacco-pipe stem, two feet in length,

which is placed within a shorter tube of glass, and secured in its position by corks, so as to appear like a Liebig's condenser. The glass tube is placed in communication with an air-pump, and the annular space between the two tubes maintained as nearly vacuous as possible. Air, or any other mixed gas, is then allowed to flow in a stream along the clay tube, and collected as it issues. In the gas collected, the denser constituent is thus concentrated in an arithmetical ratio, while the volume of the gas is reduced in a geometrical scale.

HIPPURIC ACID IN THE URINE OF CATTLE.—Dr. Thudichum observes, after referring to the observation that whenever benzoic acid, or other compounds of the benzoyl series was taken into the stomach, it always appeared as hippuric acid in the urine; that with regard to the food of cattle, there is no reason to suspect the existence of benzoyl compounds either in mangold-wurzel, grass, or hay, but hippuric acid is, nevertheless, voided in the urine. There are some curious anomalies in this respect already published; thus, Liebig has found hippuric acid in larger quantities in the urine of stall-fed cattle and of horses kept for pleasure, whilst in the urine of animals used for ploughing or other hard work benzoic acid was found instead. Lemann also found hippuric acid, but he remarked that by fermentation the same sample of urine gave benzoic acid. There is a difference induced by the kind of food consumed by cattle. Thus, grass-fed oxen furnished hippuric acid in the urine, but on the day their food was changed to clover, oats, or brewer's grains, this ordinary product vanished. Riley has likewise remarked that hippuric acid is more abundant in the urine of grass-fed cattle.

POTASH IN THE PERSPIRATION OF SHEEP.—A patent has been taken out in this country by MM. Maumenè and Rogelet, although never worked, for obtaining potash from *suint*, the name given by them to a compound of potash and some organic acids secreted in the sweat of sheep, and found on the wool. It is easily soluble in water and separated from the wool by merely washing it; the solution is then to be evaporated, and the potash obtained by lixivation and calcination. *Suint* constitutes about 15 per cent. of the weight of the raw fleece, and yields 33 per cent. of potash, so that if all the scourings of the wool produced were worked, the supply of this alkali from this source would be considerable.

THE VETERINARIAN, JANUARY 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ANNUAL ADDRESS OF THE EDITORS.

“We sleep and wake and sleep, but all things move;
 The sun flies forward to his brother sun;
 The dark earth follows wheeled in her ellipse;
 And human things returning on themselves
 Move onward, leading up the golden year.”

THE rapid flight of time is a subject that has been descanted on by the poet, the moralist, and the philosopher, and that so frequently, and to such an extent, as to leave scarcely a trope or figure unemployed to symbolise it. Yet this does not lessen its importance. The following thoughts on it by Foster, the Essayist, will be read with interest, and it may be with profit.

“A transient meteor,” he observes, “has often started suddenly on our sight as if from nothing, and shot across a tract of the sky, leaving a momentary trace of light, glancing past star after star, expending its fleeting lustre, its first brilliancy and its last, moving but to expire, and vanishing out of existence, while the eye is eagerly pursuing its flight, and vainly trying to seize the appearance at any fixed point. It might occur to a thoughtful mind that such, in many respects, is our time. It can never strike our attention but as in the act of passing. It is incessantly darting into annihilation with a haste more urgent than even the eagerest wishes of an atheist. It elapses with such inexpressible celerity that no human, and perhaps no angelic mind, has quickness of thought enough to fix on a moment as present. Before the act of thought is perfected the moment is fled, and a long train of additional ones while the thought glances after it, and thousands more while the mind is wondering at the speed, and millions more while we are pensively considering that not one of them can ever return. And thus considerable periods soon vanish into the eternal night of the past.”

The beginning of another year, both warrants and disposes the editors to greet their readers with all cordial and becoming wishes. These recurring periods enable us to mark the passing away of time, of which the past, the present, and the future, are integral parts. It is with the first named of these that we have principally now to do, it having been our wont to pass in review what has been done during the antecedent year, while at the same time the prospect of the future has not been unheeded by us.

It was very gratifying to be compelled to commence the past year having matter "on hand," and this although we had during it increased the size of our journal. It is now equally as gratifying, on reviewing our progress, to be able to say that throughout the year the same kind support has been accorded us.

Firstly would we allude to those correspondents whose contributions have been more or less continuous. Unquestionably their support has materially lightened our labours and enhanced the worth of our pages, although it has not withdrawn the solicitude which is both natural and right should be experienced by us, as this ensures the careful performance of our duties, and is an incentive to increased exertion.

To Professor Varnell we have been often indebted for commentations on cases forwarded to him, and especially for lucid descriptions of morbid parts sent to the Royal Veterinary College, and by him laid before the members of the Veterinary Medical Association: thus in more than a twofold sense has he benefited the profession.

Professor Brown has continued his series of valuable papers on subjects selected by him, taking the initiative in this respect, and in which he has been followed by Mr. Dyer, who has given us elaborate papers on the vexed question of soundness in horses, coupling the same with the mode to be adopted for examining the horse so as to ascertain this, and elucidating the same by observations of practical worth. The subject is far from exhausted by him, and we hope it will result in the eliciting of remarks from others on it, so that by the opinions of many members of the profes-

sion being thus obtained, *that* which has been so long a desideratum may in the end be possessed by us.

Mr. Watson's papers on the too long neglected science of "Botany as applied to Veterinary Medicine" maintain their interest, while he eagerly seizes every opportunity to enhance their value by practical illustrations.

To Mr. Ernes we continue to be indebted for translations from the continental veterinary journals, thus making us acquainted with what is being done by our professional brethren at a distance from us, yet all co-operating for the advancement of our division of science.

It is very encouraging to see appended to each last of these communications the words "*To be continued.*" Our response is, "ESTO PERPETUA." This free interchange of information resembles the mighty ocean, which, although it is constantly throwing off water in the state of vapour, that gives beauty and fertility to the earth, yet diminishes not, for the water having fulfilled its destined purposes is returned in the form of rivers, and thus the sea is always full; constituting one of the great cycles in creation, and indicating wisdom and design.

Heartily do we concur with "Mentor" that to have secrets in the profession is at once a disgrace, and signifies a plebeian character and a tendency to quackery; while to be ready to communicate to each other shows an elevation of mind which is a symptom of a sound and healthy state of the body corporate, and a proof of what we have ever been strenuous advocates for, namely, union. It will, however, be borne in mind that while advocating union, we have never for a moment entertained the utopian idea of uniformity of opinion. Differences in this respect must and ever will exist, and perhaps it is quite right they should. Controversy, *per se*, may professionally be no evil; it is the manner in which it is conducted that conduces to this. "Proud oppressors, civil or ecclesiastical, might deprecate all discussion, and wish to control all human intellect. They might desire a quietude like the calm of the Dead Sea or of the churchyard; but if silence reigned either in the social, political, or religious world, it would only be because

men had ceased to breathe the air of freedom, and were entombed as in a charnel-house. By controversy error is often eventually corrected, and truth elicited and established; nor is there any necessary connection between free discussion and personal animosity."

There is no uniformity in Nature. She seems indeed to luxuriate in variety, and in beauty of form and of colour, adding to all these a love of alternation. "It is the towering sublimity of the cloud-capped mountain that makes the sloping verdure of the valley so delicious to the eye. The placid serenity of the summer sky is intensified in its loveliness by the awful grandeur of the intervening thunder storm; and then when the clouds have rolled away, what can be more beautiful than to watch the sun as he comes gleaming out in all the joyousness of recovered strength; his beams kissing away the moisture from the bosom of the tear-besprinkled earth, and making the leaves on the trees sparkle as if covered with gems, while the feathered choristers of the woods pipe out their delight in songs of thankfulness and praise to the Great Author of light and life."

Indifference, it has been observed, has to be dreaded as much as controversy; since by it no professional progress can be made. An apathetic mind may be compared to a dark and stagnant morass, inhabited only by ungainly and noxious animals and constantly giving off mephitic vapours all around, in which only reeds and rushes will grow, while a thick green slime covers its surface. An active, well-disciplined mind, on the contrary, is like a flowing stream, that, while it irrigates the soil, adds beauty to the landscape by its waters giving life to plants that grow on its margins gemmed with ever fragrant flowers.

We are both pleased and satisfied with a survey of the past volume, believing that it contains matter of high interest to the profession, and affords proof of onward progress. It is quite possible that to some persons these commendations will prove obnoxious to suspicion from our being interested parties. They are welcome to entertain their censorious opinions, but be it remembered that we claim as editors very little of the honour connected with the

work. We have hardly done more than furnish a vehicle for communication, and at most we have been but exponents of the opinions of others—those who in common with ourselves are desirous of aiding in the march of mind. Not that we have either hesitated or feared to express our sentiments when called upon to do so—and this we intend ever to do. Still we have not always agreed with the statements advanced by our correspondents, believing it was not for us to express our dissent so much as for others to offer their objections to them, as by this means the truth is either elicited, or that which is false detected and exposed. Any laches we must be content to bear the consequences of, these being ours; for we cannot hope to be exempted from the usual responsibilities of editors, nor have we any wish to be.

In turning over the pages of the last volume we are glad to perceive the absence of communications abounding with personal invective. Believing that the members of the profession have a right to state their grievances, we have ever readily given insertion to their complaints, hoping it may lead to the obtainment of redress. We ourselves may not be unconscious of much that remains yet to be done and more to be altered. In one instance we felt ourselves called upon to write in self-defence; we have, nevertheless, cause to thank those who called it forth, and their animadversions, we hope, will do us good. However reluctant we may be to acknowledge it, there is no doubt that to our enemies, or those whom we so designate, we often owe much. There is great truth in the observation that “friends are all very well in their way, but foes bring out of men and nations the best qualities which they ever exhibit. Human nature in the individual or the community is, for the most part, uncommonly satisfied with itself. If it be left alone, it goes on in the old jog-trot way, without a suspicion that there is anything to amend in its habits and manners. It is vastly disgusted when somebody or something gives it to understand that it is selfish, arrogant, or mean; that it does dirty things and calls them honest; that it seeks its own interest, and disregards other people’s. The author who considers himself a genius is often shown to be a very

ordinary fellow, with a far greater capacity for the ledger than the Muses, and, though he dubs his critic 'an enemy,' he wisely comes down from Parnassus. The people who think themselves 'all creation' and deride the rights of others find, sooner or later, 'an enemy' who takes the nonsense out of them, and they gain modesty, self-knowledge, and experience by the process. In fact, there is hardly a wiser phrase than that pretty French one, '*Notre ami l'ennemi.*' Our friend the enemy does all of us more or less good in public, private, and international life."

It has ever been our desire to keep from partisanship, and to maintain an independent position for our journal. At times we have had a somewhat difficult course to steer, from the relative position in which we are placed; but we have never swerved from our principles, nor have our duties always been light; yet have they been cheerfully performed, because we have met with the support we both anticipated and desired.

The carping critic might after this perhaps be disposed to object and exclaim, "Mere egotism. Well has Aristotle said, 'Every one loves his own work.' 'Better let another man praise thee, and not thine own mouth; a stranger, and not thine own lips:' as says the Wise man." Now, we are in no mood to hold a disputation, but this we hesitate not to repeat, that we have never taken to ourselves the whole of the merit of the labour performed, knowing how much we owe to our contributors, without whose kind co-operation we must have long ere this have failed in the satisfactory performance of our duty. "Duty," it was said by Napoleon, "always marches between rocks." And in a twofold sense this may be accepted as true; for although there may be difficulties in its performance, these prove a defence when assailed, and also a barrier to escape, whatever may be the inclination. We are quite sensible that our endeavours have not been faultless; but we do hope that they have been condoned, because venial and such as are common to frail humanity.

We fear that the prevalence of the sad fratricidal war in America has withheld contributions from some of our

correspondents there. May peace be soon restored, and with it freedom given to the slave. "War," says Dr. Brewster, "is the master crime of nations, and when in the ascendant, all the springs of society are broken loose. On the property of the nation, whether fixed or movable, war makes its first inroad. The financial pulse beats in feverish excitement. The plough ceases to travel over the heath and the morass; and the rich cargoes floating on the ocean become the prey of the pirates of civilisation. Art and science are summoned from their peaceful labours to fabricate new weapons of destruction. The institutions of charity and philanthropy are paralysed in the labours of love; and the missionary and the schoolmaster carry on their work with more limited means and within a narrower range. Thrice happy is the nation that has weathered the storm of war without agrarian or political convulsions."

We have already stated how much we approve of provincial associations for the advancement of our common profession. They were first suggested in the pages of this journal, we believe, by Mr. W. Raddall; and again and again have we advocated their formation. It was with pleasure, therefore, that we recorded the announcement of a meeting of "The Yorkshire Veterinary Medical Association."

While writing this we have received reports of others being instituted. Thus when once the initiative is taken in a good cause many are always ready to follow. We augur great good to the profession as a body from these societies. They are steps taken in the right direction; and although there is a very useful association at Alma Mater for the students of veterinary medicine, we do sincerely hope that the *practitioners* in the metropolis will not be slow in forming one among themselves, as has been already proposed. "A word to the wise is always sufficient." In this day of competitive examinations, competitions of a higher and more useful kind may be desiderated. Each will find an ample field and scope enough, and the lesser or younger union will prove admirably preparatory to the older, more experienced, and, consequently, more practically useful association.

Such is the nature of some men, and such their inordi-

nate love of gain, that the flesh of diseased animals still finds its way into the London markets, and doubtless into others, although it is often detected and destroyed, and the parties sending it justly exposed and punished. As there are indications of diseased structure recognisable only by the scientific and observant man, we have before expressed our opinion that one so taught might be selected from our own body by the authorities, and appointed to the office of inspector. Correctly has the act been designated as one nearly allied to an attempt to poison, and effectual measures should be taken to suppress it. Something certainly has been done towards this, but more remains to be done. "The snake has been scotched, not killed." We are therefore glad to see that this subject has been at length taken up by the public press, which asserts that "skilled veterinary surgeons are the persons to whose scrutiny the meat we are destined to consume should be submitted. In some of the worst cases the symptoms of the disease may be such as to escape the eyes of any but a man of science, and a little expense is nothing compared with the preservation of the national health, and the avoidance of evils which are sickening to contemplate and grievous to suffer."

We have been called upon to record some strange and unaccountable instances of cruelty to animals. The miscreants guilty of these enormities degrade themselves far, far below the noble brute on which they malignantly satisfy their revenge. Such acts as these too plainly and too sadly show the proclivity of a debased and brutish mind. Nor have those in power been slow to express their condemnation of these acts—the Metropolitan Market Committee having co-operated with the officers of the Society for the Prevention of Cruelty to Animals with this view, and employed two sergeants and twelve additional policemen to attend on market days to carry out their regulations, and to prevent, if it be possible, a recurrence of these enormities. All this is right, and demands the co-operation of those who can render any assistance.

We fear that too nearly allied to this is sometimes the practice of vivisection. Not that it necessarily is so; and

there are certainly times and seasons when the educated and scientific man is justified in the experimental use of the lower animals. But what is to be condemned is, the want of humanity in the performance of these experiments, and their frequent and unnecessary repetition. We were therefore glad when the Emperor of the French had determined that no longer should vivisections be carried on in the schools and colleges of France. We are not ignorant of the fact that many persons are strong advocates for vivisection, although it may be that they are not altogether opposed to our views.

We cannot but rejoice to perceive that the aid of the profession is being more frequently called into requisition by the public, and especially by the agricultural section thereof; one the most likely of all others to be benefited by the application of the principles of veterinary science. Nevertheless, many of its members have been hitherto strangely indifferent to it, often preferring to seek assistance from the pretending and uneducated charlatan rather than the scientific practitioner. And we fear that this will continue to take place for yet some time to come, until the public mind becomes thoroughly impressed with the conviction that by science only can those means be acquired that will lead to both the prevention and the cure of disease. The middle class schools now being established will tend much to the promotion of this. On this account it is we have ever been desirous of giving to the aspirant of veterinary medicine an education of a high tone or character.

Reports of cases of veterinary jurisprudence have always been welcome to our columns. For them we are principally indebted to our friends, and we shall be pleased with their continuance. Reference to them, and their collation, cannot fail to instruct the profession in a very important section of their duties. The subjoined observations, taken from an address delivered by the Lord Chief Justice at a meeting of the medical profession, may not be inapplicable to ours; whilst the truthfulness of the remarks, and the high source from whence they emanate, will give them due weight and enforce their worth. The difference between the two professions is one of degree rather than of principle.

His lordship stated—

“That the profession to which he had himself the honour to belong was frequently much mixed up with, and indebted for assistance, to the medical, and there was no profession for which he felt greater esteem than the medical. Indeed, there was no one who did not feel gratitude towards that admirable profession whose task of love it was to assuage the tortures of pain and to restore the afflicted to health. The most important issues frequently turned upon medical evidence. Questions of life and death; questions of property where everything rested upon the medical testimony to the capacity or otherwise of testators to make wills. They might rely upon it that it was of the greatest possible importance in the elucidation of the truth, that medical witnesses should understand the bearing of the evidence they were giving. They had all heard at some time or other of the remarks that were made as to the frequently contradictory nature of scientific evidence. One set of scientific witnesses were called to prove one side of a case, and another set of equally scientific witnesses were then called to contradict the first, and to give a completely different complexion to the facts. He begged their attention to that well-known state of things, and he assured them that it might be obviated. It frequently arose from the fact that, although not one gentleman could be found who would wilfully and deliberately enter a witness box to pervert the truth, or to state that which was not true, yet medical men were apt to identify themselves with the cases on which they were consulted, somewhat as lawyers did with their clients; and although the medical man gave his opinion according to the best of his judgment to the person who first consulted him, he could not help feeling a sort of desire to carry that person through all subsequent proceedings. He thus, without knowing it, became interested in maintaining a particular view of the case. Now he earnestly entreated his young medical friends to endeavour to divest themselves of these feelings of preference, and to remember that they were called upon to aid courts of justice in arriving at sound, and true, and just conclusions. The next point to which he begged to call their attention was the necessity for using the plainest possible language in giving evidence, carefully avoiding technical and scientific terms, and all such displays of learning as might seem pedantic. Such displays laid witnesses open to the ridicule of the lawyers on the side opposed to that which the pedantic evidence favoured. It was there-

fore for the sake of the jury, and for the sake of justice, most important that medical witnesses should use the simplest, plainest possible language. He asked pardon for thus giving advice, but there was not a man in England who held the medical profession in higher esteem and respect than he did."

Thus have we noticed the salient portions of our last year's proceedings, and assuredly there is in them manifest proofs of onward progress, and much to encourage us to go forward. It is the nature of all science to advance. It cannot remain stationary. At the same time, the *locus standi* of any society or community may be ascertained by the state of its literature; and we hope and believe that in this among us there is at present no falling off. Nevertheless, as yet, only the outskirts of the great field of usefulness have been examined by us. We have yet to explore it and develop its riches. But if aught of blame be attributable to the feebleness and shortcomings of our labours, others, perchance, may be equally culpable. Therefore we would say, in the language of Milton—

"Let us no more contend; nor blame
Each other, blamed enough elsewhere; but strive,
In offices of love, how we may lighten
Each other's burdens in our share of woe."

Still our work is not yet done, nor have we any wish to become fossilized; and while our friends continue to afford to us the support they have hitherto done, we shall go on, strengthened and encouraged, being convinced that the cause is worthy of all the energy we can impart to it, and the full employment of the few talents that we possess. We will not say we are not emulous of fame, but we also know the brittleness of the slender thread on which popularity hangs; nevertheless, having a desire to be found useful in our day, and among those with whom Providence has placed us, and remembering that on others must soon—how soon we know not—devolve the duties we are now endeavouring to perform, we have placed before our mental vision, so as to actuate us to continued earnestness, the expressive line of the poet—

"Not to be missed is infamy."

Although our obituary is not so large as it has been in some antecedent years, we see in it the names of several friends with whom we were once associated, and of others to whom we were privileged to render assistance in their studies. Yet we are left: why, we ask not. Nature instinctively shrinks back from death; but were the subject rightly viewed, this would not be the case. The *real* man never dies. We do but “shuffle off our mortal coil,” to let our immortal part go free. It has been said—

“Death is the only thing in death that dies.”

Death, in fact, is the first stepping forth into life. Dying, we begin to live. “It is as the Psyche bursting her shell to float in the sunlight, to sip the dews and inhale the fragrance of the flowers that bloom in the new creation, and to revel in all the beauty and splendour of the celestial world.”

“Those pangs of birth,
Which men call death, unveil life’s mysteries.”

Some depart in the morning of life, others at high noon, and only a few reach its evening, when the sun sets in splendour, tinting the curtained clouds with roseate hues. It has been said, “Men for the most part die in the midst of their labours: the farmer leaves his field half ploughed; the artist dies with unformed figures on his canvas; the tradesman is cut down in the midst of his merchandize, and the statesman is arrested with great political measures in his head.” But all this is more seeming than real, for the work of each is done, or it is then too late to accomplish it; and thus we are taught that “whatsoever the hand findeth to do, to do it with all our might, for there is no work, nor device, nor knowledge, nor wisdom, whither we are all going.”

We close our address with a quotation from the same poet—Tennyson—with which we commenced it, it being in accordance with our sentiments and feelings—

“But we grow old. Ah! when shall all men’s good
Be each man’s rule, and universal peace
Lie like a shaft of light across the land,
And like a lane of beams athwart the sea,
Through all the circle of the golden year?”

Extracts from British and Foreign Journals.

THE IMPROVEMENT OF AGRICULTURAL HORSES SUITED TO THE WEST OF ENGLAND.

By Professor BROWN, M.R.C.V.S.

(Continued from vol. xxxvi, p. 754.)

Having by proper selection of parents obtained the young animals possessing the general qualities we seek, the next step will be to place them under **CONDITIONS FAVORABLE TO THEIR DEVELOPMENT.**

During the first year of the foal's existence there is nothing to suggest that would improve the system of management already pursued in well-conducted establishments. We assume that for some months the animal is mainly nourished by its mother, and is housed in the same stable or shed. When turned out to graze, a proper protection will be provided against inclement weather.* Cold, damp, undrained pastures, we take for granted, are sedulously avoided; the colt's legs⁷ are kept dry; as much time as can be conveniently given is devoted to gentle handling; and from time to time the coarse hairs which appear on the legs are removed in the way before explained.

At two years old the colt will probably be sold at one of the fairs and taken into a grazing country; the same system of treatment being continued until he is old enough to be put to farm-work.

The change from the pasture or strawyard to the stable may be looked upon as a very important one in the animal's existence. The exact period at which it may properly take place will depend to some degree upon constitution; but, speaking generally, much mischief is occasioned by employing the horse for active work at too early an age. Many colts are put to some sort of duty at two years old, and, whether in the shafts or in the middle or front of the team, it is nearly impossible to limit the animal's exertions. Weak joints, bursal enlargements, curbs and other forms of sprains,

* If wintered out, a sheltered field will be selected, with a good shed. Hay, either long or in the form of chaff, with bran and bruised oats or barley, will be suitable food for the first year. When the straw-yard is preferred, a fair quantity of pulped roots may be advantageously mixed with the chaff.

are the frequent consequences, and the animal's usefulness in the future is seriously lessened.

No doubt can exist about the propriety of keeping the horse from work until his growth is perfected, and this will not happen until nearly five years of age;* but there is much cogency in the objection to the expense attendant upon keeping an animal idle and in every way unproductive during this time. Between three and four years we may allow that most well-grown colts may be brought gradually into active use without much danger, if care be taken to prevent any undue exertion at first; although we are doing some violence to correct principles in conceding so much.

The horse once taken upon the farm commences his **STABLE LIFE** in earnest, and upon the treatment he meets with will depend the preservation and improvement of those qualities we have endeavoured up to this time to cultivate.

It will not be necessary to attempt a dissertation upon stable buildings and fittings, or upon the general management of the occupants. The sins committed in this way are not those of ignorance. Every farmer is aware that his horses should be housed in well-proportioned, commodious, well-ventilated, properly lighted, and efficiently drained stables; he is also alive to the fact that good quality and a proper quantity of food, medium temperature, scrupulous cleanliness, and general attention to the animal's comforts are essential to his well-being; the difficulty is that he does not realise the amount of injury resulting from neglect of these conditions; he knows that the opposite system is injurious, but he has hardly an idea of the extent to which the mischief reaches. It does not occur to him probably that, if he persists in keeping his horses from their youth in a cold, badly-constructed stable, a compensation in the shape of a thick, rough coat will be a necessary result; that accumulation of dirt and moisture about the leg will lead to hardness of integument and disturbance in the circulatory and secretive functions, predisposing to cracked heels and grease. He is possibly unmindful of the fact that the want of good grooming leaves the skin with its numerous pores obstructed by the accumulation of dirt, and disposes to mange and surfeit; that irritating vapours from stagnant manure disturb the eyes and nostrils; that inferior provender deranges the digestion; and that disproportionate work wears out the animal mechanism with wasteful rapidity.

* The roundness of back and defective quarters so frequent in the worst specimens, are considered, and with reason, to be due in great part to the effects of too early use.

Monstrous as it may sound, we have heard it seriously stated that it answers better commercially to work the horses "out" than to take any extra trouble for their preservation. The exact meaning to be attached to the expression "working out" involves a serious reflection on humanity; the practice, we happen to know, is by no means uncommon, although happily among agriculturists the spirit of competition and speculation has not reached so far or descended so low. We have to complain of a want of consideration very frequently, but nothing worse.

The general ROUTINE OF THE STABLE will depend upon a variety of circumstances; it would therefore be useless to attempt to lay down a particular system relating to the time of feeding, division of work, methods of ventilation, lighting, and drainage; so that all these points receive due consideration, the details may be left to individual judgment. We would stipulate that the horse should be well fed, fairly worked, as frequently as convenient subjected to proper grooming, his legs and feet receiving particular attention for reasons already assigned.

Under an appropriate system of management we may expect that the beneficial effects of BREEDING FROM WELL-SELECTED PARENTS WILL BE CONSIDERABLY EXTENDED, and consequently our next selection of parents will be made with still more scrupulous regard to the requisites before insisted on; and thus, by successive combinations of two systems, artificial selection and careful regulation of the external conditions of existence, we may hope to reap all the advantages which result from the application of scientific principles to the practice of breeding.

Journeys of observation, with any special object in view, generally result in discoveries; and certainly, since our attention has been specially directed to the subject of draught horses, we have obtained some curious evidence. What has particularly struck us in reference to cart-horses in ordinary is the singular absence of any definite character among them; doubtless, this is consequent upon indiscriminate crossing, in which the English horse has had an uncommon share. Now and then a decided trace of the Clydesdale is apparent in the black colour and the somewhat hollow back contrasted with the suddenly drooping Flemish hind quarters; but at the same time we notice a large angular head and hairy legs, indicating the English element. Again, we perceive the contour of the Suffolk Punch is associated with the colour and some of the distinctive traits of the English horse. More often the animal we meet with is indescribable; appa-

rently belonging to no country or breed, rough, ungainly, sluggish; in fact, the original of Dr. Johnson's definition.

With so large a prevalence of the mixed breeds, it would be almost a hopeless task to attempt the cultivation of any pure race; nor, in reference to draught horses, is it a matter of much importance so long as intermixture is regulated by judgment. The system of indiscriminate crossing without any reference to results is the one which we condemn, and its abandonment is essential to a radical improvement in the cart-horses of our country. Unfortunately the demand for low-priced horses fosters this reckless system of breeding, continued irrespective of the injurious results which are certain to follow. It is much to be lamented that so shortsighted a policy should find defenders, as it secures no real advantage even to those for whose especial benefit it is adopted. Under the most careful management, there would doubtless be a sufficient number of animals of moderate value for all practical purposes. Indeed, it must be recollected that the price is regulated in a great measure by the supply; and that, presuming the number of animals produced under proper selections to be equal to the demand, as would in all probability be the case, the prices would not be materially augmented, taking the whole country through. In fact, the only real difference would be, that we should in time possess an abundance of good animals instead of an excess of bad ones.

One great step towards permanent improvement has been taken by our various Agricultural Societies in offering prizes for agricultural horses, not only stallions, but also mares with foals, and yearling colts. Candour, however, compels us to add, that the good intentions of the donors are in a great degree frustrated by the uniform mediocrity of exhibited stock. Among hunters and hacks it has been our fortune to notice animals, particularly two-year old colts, that gave promise of strength, endurance, and speed combined, and whose growth and conformation were all that could be desired; but among agricultural horses we have generally found much to complain of, and save in isolated cases little to applaud.

Should breeders, in the future, think the recommendations in this paper of sufficient importance to receive their considerate attention—should they, abandoning preconceived views, discuss the subject upon a scientific basis—we should soon have to record a manifest improvement in the breed of draught horses.

If our reasonings upon the subject of breeding should

seem to some to be speculative, or our suggestions appear unpractical, we would venture to observe that we are fully aware of the difficulties that oppose themselves to the application of principles; but while we accord a profound respect to practical experience, we feel we are not likely to meet with unsympathising readers among the farmers of the present age, if we persist in forcibly urging the claims of science.

7A, NEW CAVENDISH STREET, PORTLAND PLACE,
February 10, 1863.

THALLIUM AND ITS POISONING PROPERTIES.

OUR readers are well acquainted with the history of this new metal, which has been the subject of a dispute for priority between Mr. Crookes and M. Lamy. The latter gentleman, in a paper addressed to the Academy of Sciences, now announces a property of that metal, the discovery of which undoubtedly belongs to him, viz., its deleterious power. Having experienced certain pains, especially in his lower limbs, while pursuing his studies on thallium, he was induced to attribute them to a noxious influence of the metal; and in order to ascertain whether such was the fact, he dissolved five grammes of sulphate of thallium in milk and offered it to two puppies, each about two months old. But after tasting the liquid they left it, and could not be induced to take any more. On the following day the milk, which had been left in the yard, had disappeared, and it soon turned out that it had been partaken of by a dog, two hens, and six ducks. For a few hours after ingestion the dog became sad and refused to eat. During the night it was seized with violent gripes, which caused it to utter piercing cries. Its features had undergone a change; its back was bent up through the effect of pain, the seat of which was evidently in the intestines. Its hind legs, after a continuance of convulsive motions, became paralysed, and it died sixty-four hours after taking the poison. On the day before its death a hen and six ducks died, and in those which were watched in time the paralysis of the legs was remarked. The two puppies, which had scarcely touched the milk, had meanwhile shown symptoms of fatigue; by degrees they were seized with convulsive trembling, and could hardly stand; then came the acute pains which ended in death, although every

precaution had been taken, apparently in good time, to save their lives. All these animals being subjected to dissection, there could not be found the slightest corrosion, or even inflammation of any consequence; only the gall-bladder of the dog was found considerably distended, and in some of the ducks various serous membranes, that of the liver especially, had assumed a whitish and granulous appearance. As to the nature of the poison, if there could have been any doubt about it, it would have been at once dispelled by the characteristic green band peculiar to thallium in the spectral analysis of the organs of the dead animals. Eight days later the other hen was taken ill. Its wings hung down, it could hardly walk, and when it wanted to peck its food, its neck seemed to have lost the power of bending down sufficiently, so that its beak did not reach the food. The hen was killed, and thallium found in the intestines, but in a very small dose indeed, and the other organs did not contain any. M. Lamy next administered a decigramme (a grain and a half) of the sulphate to a dog two months old, and it died forty hours after taking it. Hence M. Lamy justly infers that sulphate of thallium is a powerful poison, producing pain in the intestines and paralysis of the lower members. This poison and the nitrate have but little taste, and might therefore be used for criminal purposes; but fortunately there is not a poison that can be traced with more certainty through spectral analysis than this. The new method of analysis bids fair to render excellent service in cases relating to forensic medicine.

SMITHFIELD CATTLE SHOW.

At the recent meeting of the Smithfield Club, the following awards of medals and cups were made, in addition to the prizes awarded the several animals in their respective classes.

CATTLE.

Silver cup, value £40, to the exhibitor of the best steer or ox in any of the classes, to No. 43, Hereford ox, four years old, belonging to Mr. William Heath, Ludham Hall, Norwich.

Silver cup, value £40, to the exhibitor of the best heifer or cow, to No. 112, short-horn heifer three years and

ten months old, belonging to Mr. Charles Swaisland, Crayford, Kent.

EXTRA STOCK CATTLE.

Silver medal and £5 prize to the exhibitor of the best steer or ox, to No. 216, Devon, belonging to Mr. R. Birkbeck, Gatton, Surrey.

Silver medal and £5 prize to the exhibitor of the best heifer or cow, to No. 233, short horn, belonging to C. W. Packe, M.P., Prestwood Hall, Leicestershire.

SHEEP.

Silver cup, value £20, to the exhibitor of the best pen of Leicesters, Cotswolds, Lincolns, Kentish, or other long-woolled breed, to No. 249, Leicester sheep, twenty months' old, belonging to Mr. G. S. Foljambe, Osberton Hall, Worksop.

Silver cup, value £20, to the exhibitor of the best pen of one-year old Southdowns, Hampshire, or Wiltshire Downs, to No. 294, Southdowns, twenty months and two weeks old, belonging to Lord Walsingham, Merton Hall, Norfolk.

Silver cup, value £20, to the exhibitor of the best pen of Shropshire, Oxfordshire, cross-bred, or any other breed of sheep not specified in prize list, to No. 374, Leicester and Southdown, twenty months old, belonging to Mr. John Overman, Burnham Sutton, Norfolk.

EXTRA STOCK SHEEP, LONG-WOOL.

Silver medal to the exhibitor of the best Leicester wether, Hon. Colonel Lowther, Barleythorpe Hall, Rutland.

Silver medal to the exhibitor of the best Leicester ewe, Mr. John Lynn, Straxton, Lincoln.

Silver medal to the exhibitor of the best long-woolled sheep (not Leicester), to Mr. Thomas Porter, Baunton, Gloucestershire.

EXTRA STOCK SHORT WOOL.

Silver medal to the exhibitor of the best Southdown wether, to his Grace of Duke of Richmond.

Silver medal to the exhibitor of the best Southdown ewes, to the Right Hon. Lord Walsingham.

Silver medal to the exhibitor of the best short-woolled sheep

(not Southdown), to Mr. H. Smith, Sutton Maddock, Shropshire. Shropshire ewe.

EXTRA STOCK CROSS-BRED SHEEP.

Silver medal to the exhibitor of the best cross-bred sheep, to Mr. John Overman, Burnham, Norfolk. Down and Leicester wether.

PIGS.

Gold medal to the exhibitor of the best pen of pigs in any of the classes, to No. 431, white pigs, seventeen months and twenty-two days old, belonging to Major-General the Hon. A. N. Hood, Cumberland Lodge, Windsor.

EXTRA STOCK PIGS.

Silver medal to the exhibitor of the best pig. Small black Suffolk, twenty-one months' old, belonging to Mr. S. G. Stearn, Brandeston, Suffolk.

Silver medals were likewise awarded to the BREEDERS of all the *first* prize cattle, sheep and pigs.

PRESENTATION OF A TESTIMONIAL TO MR. WM. PRITCHARD, DEMONSTRATOR, ROYAL VETERINARY COLLEGE.

AN interesting meeting of the students of the Royal Veterinary College took place on Monday evening, December 14th, in the Theatre of the Institution, for the purpose of presenting a testimonial to Mr. William Pritchard. The Professors were present by invitation. The testimonial, which consisted of a superior microscope manufactured by Messrs. Smith and Beck, bore the following inscription:—
“Presented by the Students of the Royal Veterinary College to W. Pritchard, Esq., Anatomical Demonstrator in that Institution. A tribute of esteem and gratitude, both in acknowledgment of his assiduities as a teacher, and his kindness as a friend, Session 1863-4.”

The proceedings were opened by the Chairman of the Committee, Mr. Richard Poyser, requesting the Hon. Secretary, Mr. J. Broad, to read the resolutions which had

been come to by the committee at its several meetings. On this being done, the chairman rose and spoke as follows :

GENTLEMEN,—After the resolutions which you have heard read by the Secretary, I need scarcely inform you of the cause for which we are assembled here this evening ; in them allusion has very properly been made to the nature of the motives which have actuated us in our proceedings.

To perform the duty which your kindness has imposed upon me is an honour which I fully appreciate ; at the same time I must confess you might have elected some one more competent to undertake such a position, yet I trust I shall be favoured with your indulgence, should I fail in expressing those feelings and sentiments which are now the chief occupants of your minds, and which, I am sure, you are anxious to give vent to ; but, being prompted to duty by feelings of gratitude, it becomes a matter of extreme pleasure to me.

Our minds were influenced by sentiments such as are excited only by long-continued, unassuming kindness and benevolence, and by the recollection of personal advantages, such as are derived from the exertions of one for the benefit of others.

The heart of that man must indeed be cold who does not feel grateful for kindness, who does not endeavour to show, by his actions as well as by his words, the gratitude inspired by the sacrifices another has made for his sake.

Gratitude is the most pleasing exercise of the mind ; it is an incentive of human actions, and a feeling not only possessed by the mind of man, but even by that of the brute creation.

Gratitude is the natural impulse of a generous mind—one of the purest by which man is influenced ; he who is so influenced, feels no greater pleasure than in acknowledging his high appreciation of it by returning kindness with esteem ; it is a virtue easily to be accomplished, and is accompanied with much inward gratification and satisfaction.

I am sure, and this present which I consider to be your acknowledgment serves to substantiate my remark ; I say, I am sure that Mr. Pritchard's professional career, and his kindness towards us personally, have been such as to worthily merit the connection of such sentiments as these with his name.

We are, as students, greatly indebted to him as our teacher ; yet it cannot be supposed that we can justly appreciate his talents in that capacity, therefore it is that this testimonial assumes the character of a mark of gratitude rather than one in admiration of his professional abilities.

It is a tangible expression of the deep sense we as a body of students entertain of his kindness towards us, and his earnest labours in our behalf.

His method of instructing is such that it cannot fail to impress firmly upon our minds those things which it is his utmost endeavour to demonstrate. He does not take into consideration the irksomeness attendant upon recapitulation. It is ever his wish to elucidate those apparent mysteries which are connected with his noble department of science. His exertions on our behalf are incessant, and it appears to be his constant desire to get us to place confidence in him, not only by imparting knowledge to us, but by acting as a friend and not as an inspector.

It will be needless for me to expatiate upon the many advantages that must of necessity accrue from a possession of a knowledge of that branch of science which is entrusted to his care, viz., anatomy. A perfect knowledge of anatomy is of the most essential value to him who wishes to become a physiologist or pathologist. What would he be without it? Upon it all grand principles are based, and upon it our scientific acquirements will chiefly depend. No one can deny its extreme utility in connection with our surgical operations, its extreme usefulness as regards the application of our medicinal agents, and in the diagnosis and prognosis of disease; and, lastly, it is a thorough knowledge of anatomy that will tend to elevate our position as veterinary surgeons over that of the empiric or the quack. Mr. Pritchard's repeated anatomical demonstrations; his manner of conducting them; his unwearied assiduity and earnestness in wishing to make himself clearly understood, and his personal kindness towards us, are all excellent qualities, demanding our esteem and thankfulness; and I need scarcely remark that our honoured visitor more than deserves this gift. Without making any further observations, I will at once proceed to fulfil the duty your kindness has consigned to me.

The chairman then read the testimonial (and turning to Mr. Pritchard, said):

“To you, Sir, I have the distinguished honour of conveying with this gift the verbal expression of the grateful feelings the students as a body entertain toward you, and permit me to congratulate you in having gained for yourself such a position in their estimation. In desiring your acceptance of this tribute of our regard, allow me to express my sincere wish—and in this I know I am joined by all present—that although you are now the junior instructor in this institution, I trust that, when the infirmities necessarily attendant

upon advanced age disqualifies our worthy present principal for the discharge of his honorable obligations, you may creditably rise step by step, and at last reach that noble position which he now so ably occupies.”

The presentation being made, Mr. Pritchard in accepting it spoke as follows:—

Mr. Chairman and Gentlemen,—I cannot but feel proud of the very honorable position which you have placed me in this evening; but, at the same time, my inability to thank you for that honour stands palpably before you. I have often thought, if a person when about to make a speech labours under any difficulty, that embarrassment must be owing to one of two causes—he either must be in want of sentiments, or of language to give expression to those sentiments. Now, it is the latter of these two obstacles that I shall labour under this evening; but I hope and trust, should I not succeed in as fully giving vent to my thanks as I could wish, and you have a right to expect, you will kindly excuse my failings—in a word to accept the will for the deed. I was appointed demonstrator to this institution in September, 1860, and have held the office from that date to the present time. During that period my efforts to perform its duties have always been encouraged both by the kindness and assistance of the professors, and by the support of the students generally. I fully estimate this kindness and support, and wish now to bear testimony of my complete appreciation of both. But, gentlemen, it affords me a great amount of pleasure to find that my efforts to do my duty have so far succeeded as to stimulate the present class to make me the recipient of a testimonial during this the fourth session of my office. In carrying out the instructions of my employers, the governors of the College, I have met with little or no difficulty on the part of the pupils; indeed, I am very glad to be able to say the reverse has been the case. I doubt not a few have thought me rather too particular—perhaps severe; but I am inclined to think such severity has not been had recourse to until milder measures have been tried and have failed. Such instances I know, and am proud to know, are few; and those who entertain such views should bear in mind that in the performance of my duties I have no more right to neglect the one of preserving orderly and gentlemanly conduct in the dissecting-room, than I have to refuse to grant the request of any one of you when desired to demonstrate any portion of the animal you may wish. Not only is this so, but the study of an intricate science like anatomy requires a considerable amount of steady attention and perseverance;

and anything which would tend to divert such attention and perseverance must necessarily be accompanied with a waste of time and loss of useful information. And I assure you all, nothing but my desire for the welfare of the class generally has given origin to such occasional reprimand. Now, allow me to impress upon you the necessity of seizing every opportunity to add to your stock of knowledge. Other remarks I have made in connection with anatomy apply with equal force to the study of the other branches of your curriculum; consequently, no time is to be lost or idly spent. Pursue a steady, forward course, and leave no stone unturned; and then, when the time comes—and bear in mind it will soon be here—when you will have to undergo the ordeal of an examination as to your fitness to practise the veterinary art, although you may feel anxious, alarm will give place to an amount of confidence which nothing but the inward feeling that you have done your duty can afford you. Gentlemen, accept my warmest thanks for this your very kind and acceptable present. I much admire the choice made by you, for in the pursuance of a study like anatomy an instrument like the microscope is almost invaluable. On this account I consider your choice in itself bespeaks a good amount of kind thought and consideration on your part. Rest assured I shall ever cherish the possession of it, because it not only brings to mind many pleasant circumstances in connection with the present class, and the kind respect borne me by the different members of that class, but it will ever stand as a proof that my endeavours to perform my duty have not been wholly unsuccessful. Mr. Chairman, allow me to thank you for the kind wishes that you have given expression to, and to assure you that nothing shall be wanting on my part to render myself worthy of the honour you have thus conferred upon me.

The proceedings then terminated.

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE members of the above Association held their fifth meeting at the Brunswick Hotel, Piccadilly, Manchester, on the 2nd of December, 1863. There were present the President, Mr. Lawson, Mr. Peter Taylor, Mr. Thomas Greaves, Mr. Roger Hampson, Mr. William Haycock, Mr. Thomas

Taylor, Mr. James Haslem, Mr. A. L. Gibson, Mr. George Sermon, Mr. Malcolm, Mr. Dixon, and Mr. William Challinor.

The following gentlemen were elected, viz., Mr. Brown, of Oldham, Mr. Howell, of Rochdale, and Mr. Malcolm, of Altrincham.

The following were also nominated for election :—Mr. Adam Hampson, Bolton; Mr. Roger Bridge, Bury; Mr. James Brookes, Pilkington; and Mr. Nicholas Carney, Manchester.

Mr. Peter Taylor read a very excellent paper, "On the Physiology and Pathology of Inflammation," which elicited a very interesting discussion.

On the election of officers for the ensuing year, Mr. Thomas Greaves was elected President; Mr. Roger Hampson, Treasurer; Mr. Thomas Taylor, Secretary; and Messrs. William Haycock, A. L. Gibson, and William Challinor, were elected Vice-Presidents.

The next meeting will be held on the evening of the first Wednesday in March, when the President will deliver an inaugural address, and Mr. William Haycock will kindly give a paper "On Pleuro-pneumonia in Cattle."

THOMAS TAYLOR,
Honorary Secretary.

MANCHESTER, *Dec. 14th*, 1863.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

AN influential meeting of Veterinary Surgeons residing within the districts of Durham and Northumberland took place at the Crown and Thistle Hotel, Newcastle-upon-Tyne, on Friday the 11th of December, which resulted in the establishment of a Society under the above title, for the advancement of veterinary science, Mr. Hunting, V.S., South Hetton, in the chair. A council and officers of management were elected from their number, a code of rules adopted, and Friday the 15th of January, 1864, was fixed for the first meeting, when the President will deliver his inaugural address.

Veterinary Jurisprudence.

SOUTH LANCASHIRE ASSIZES.

NISI PRIUS COURT—*Dec.* 14.

Before Mr. JUSTICE WILLIAMS.

CLAIM AGAINST A VETERINARY PRACTITIONER.

ARMITAGE *v.* WARD.

THE plaintiff in this case was Joshua Armitage, a yarn agent, residing in Blackburn, and the defendant was William Ward, a veterinary practitioner, carrying on business in the same town. The action was brought to recover the value of a valuable cart-horse belonging to the plaintiff, which had died, owing, it was alleged, to the negligence of the defendant. Mr. Attorney-General James, Q.C., and Mr. Torr appeared for the plaintiff, and Mr. Temple, Q.C., and Mr. Kaye appeared on behalf of the defendant.

The Attorney-General, in opening the case, said the action was brought to recover the damages which had been sustained by reason of the defendant's careless and improper treatment of a valuable cart-horse which had been entrusted to his care by the plaintiff. In the month of September last the horse had been some short time in the possession of the plaintiff, who had given fifty guineas for it. The horse was at this time taken ill, and it was sent on a Saturday to the defendant's stable, where it was put in a loose box, with the view to its treatment. From that time down to five o'clock on the Sunday nothing whatever was done to the horse. The result was, that the horse became much worse, and other medical men had to be called in. The horse, however, had gone quite beyond recovery, and it died of tetanus, or lock-jaw, on the following Friday at noon. The complaint against the defendant was, that the horse had not been treated in sufficient time, and that it had been allowed to have hay, corn, and bran—food which, it was said, was highly improper for a horse suffering from tetanus. The defendant did attend his place of business on the Saturday afternoon, but the Attorney-General was afraid that he was not then in a condition in which a medical man, whether for the human subject, or for the lower animals, ought to be. He went into his own surgery, and attended to himself; he was not, and could not be roused by his men. The horse was not attended to that night. It seemed that the defendant, supposing the horse to be suffering from sore throat, applied a blister.

Mr. Buckley, veterinary surgeon, carrying on business at Blackburn, deposed that the horse died of tetanus, produced by a prick of the foot. He was called in to see the horse on the Sunday afternoon, and seeing the defendant, he asked him if he was going to continue his treatment of the horse, when Ward said he had a relative's funeral to attend on the following day, and he could not attend to the horse. In cross-examination the witness said he had examined the horse at Lytham fair before the plaintiff purchased it. He examined it for some gentlemen, who thought of purchasing it, but he advised them not to do so, because he thought it might ultimately go lame. It was suffering from a slight

string halt in one hind leg, and it had also a slight ossification of the lateral cartilages. He was of opinion that tetanus was curable.

Mr. John Lawson, veterinary surgeon, of Manchester, and twenty-six years in practice, deposed that of the last eight cases of tetanus which had been brought under his care six of the animals had recovered.

Mr. Cuthbert Simpson, another veterinary surgeon of Manchester, deposed that hay and corn was very improper food for a horse suffering from tetanus; it ought to have had "soft, sloppy" food such as bran mashes.

Mr. William Sames, wine merchant of Blackburn, deposed that he had been asked to act as arbitrator between the parties, and on that occasion the defendant alleged that the horse had never been given into his charge for treatment; it had simply been brought to his stables, and he never treated horses brought to his place unless he received instructions from the owners, to which witness replied that that was an absurd statement.

For the defence, it was contended that the defendant was simply a smith and farrier, and though when instructed to do so he did occasionally treat horses that were disordered, yet he never took such upon himself, and, therefore, not having been specifically told to treat the horse in question, he waited instructions from the plaintiff. It was urged, too, that the tetanus was probably the result of the "side bones," or the string halt, from which the horse was admitted to have been suffering.

The Defendant, on being called, denied that he was drunk on the Saturday evening, as was alleged by Mr. Buckley.

Mr. Aked, a veterinary surgeon, who saw the horse before its death, declared as his opinion that tetanus was incurable, though he admitted, in cross-examination, he had read of cases of the successful treatment of that disease.

His Lordship, in summing up the case for the jury, remarked that it certainly appeared to him that the defendant acted like a man who had the horse under his charge as the veterinary surgeon.—The jury returned a verdict for the plaintiff, damages £20.

ARMY APPOINTMENTS.

WAR OFFICE, PALL MALL; Dec. 4, 1864.

Veterinary Surgeon of the first class, William Hacker, from the 10th Hussars, to be Staff Veterinary Surgeon; *vice* Matthew Poett, deceased; Dec. 4.

2nd Regiment of Life Guards—Veterinary Surgeon Thornton Hart, to be Veterinary Surgeon of the First Class; Dec. 4.

4th Hussars—Veterinary Surgeon Herbert Sewell, to be Veterinary Surgeon of the First Class; Dec. 4.

13th Hussars—Veterinary Surgeon William Varley, to be Veterinary Surgeon of the First Class; Dec. 4.

14th Hussars—Veterinary Surgeon Henry Dawson, to be Veterinary Surgeon of the First Class; Dec. 4.

Dec. 18, 1863.

15th Hussars—Veterinary Surgeon Martin Mence, to be Veterinary Surgeon of the First Class; Dec. 4.

Acting Veterinary Surgeon Thomas Channon has been permitted to resign his appointment; Dec. 18th, 1863.

OBITUARY.

In the *Monthly Military Obituary* we see the name of Veterinary Surgeon Mr. James Rainsford, half-pay, 4th Dragoon Guards. His diploma bears date Feb. 24, 1828.

We have also to record the death, on Dec. 5th, 1863, of Mr. H. A. Truman, M.R.C.V.S., Old Sleaford, Lincoln, at the early age of twenty-eight years. His diploma bears date May 15, 1857.

DEATH OF JOSEPH HENRY GREEN, ESQ., F.R.S.—The medical profession and the public generally will regret to hear of the death of this estimable and most learned member of that profession of which he has long been so bright an ornament. He died at his residence, the Mount, Hadley, near Barnet, on Sunday evening, the 13th inst. To the Council of Medical Education and Registration, of which he was president, and especially to that of the Royal College of Surgeons of England, of which he had been twice president, as well as a most active member, the loss will be irreparable. The deceased was an only child of wealthy parents, from whom he received a first-class elementary education, and as a rare instance of maternal solicitude it deserves to be mentioned that when sufficiently advanced in his studies, his mother (the sister of the celebrated Henry Cline, then the principal surgeon to St. Thomas's Hospital) accompanied her son to Berlin, where she remained during the whole time he was perfecting those studies which laid the foundation of his great fame. He acquired his professional knowledge at St. Thomas's Hospital, under the auspices of his uncle, Mr. Cline, and was admitted a member of the Royal College of Surgeons on the 1st of December, 1815, having for two years previously acted as demonstrator, a sure proof of his proficiency as an anatomist; and so creditably were the duties attached to this office performed by him, that in 1818 he joined Mr., afterwards Sir Astley Cooper, as joint lecturer on anatomy and physiology. In 1820, he succeeded the younger Cline as surgeon to St. Thomas's Hospital, and with Sir Astley Cooper then delivered lectures on surgery and pathology. As an operative surgeon, he was unequalled in the skill with which he performed that for lithotomy, having in 1827 operated in forty cases, and lost only one patient; this success created a great sensation at the time, as it is unequalled in any country, and in any other person's hands. In 1830 he was appointed to the professorship of surgery in King's College, of which institution he was at the time of his death a member of council. In 1831 he wrote a pamphlet called 'Distinction

without Separation,' addressed to the president of the Royal College of Surgeons, to prove that the distinction between physician and surgeon did not really exist, and that such division was highly injurious where it did. About this time he was unfortunate in entering into a wordy warfare with the *Lancet*, about the publication of his lectures, and in which he was severely handled and totally discomfited. Lecturers now see the advantages of their lectures being correctly reported in the medical papers, from which the public and themselves so largely profit. In 1834 he wrote a memorable letter to the *Times*, suggesting a plan of medical reform, to the effect that the medical student should have a sound, classical, and mathematical education, and proposing a higher and lower grade or distinction; and as showing the wisdom of these suggestions it may be mentioned that the Council of the Royal College of Surgeons has for some time past adopted the whole of them. In 1835, on the death of Mr. Lynn, surgeon to the Westminster Hospital and a member of the Council of the College, Mr. Green was unanimously elected to the chair in the Council of that College of which he had become such a distinguished member. In 1840 he was requested by his colleagues to deliver the annual oration in memory of the immortal Hunter; and so much satisfaction did this afford them that at their earnest request he published it under the title of 'Vital Dynamics;' and again in 1847 he became Hunterian orator, and published the lectures under the name of 'Mental Dynamics.' Neither were considered popular discourses; they were perhaps in advance of the times, and moreover were full of the metaphysical notions entertained by the celebrated Coleridge, his intimate friend and congenial spirit. In 1846, on the resignation of Sir Benjamin Brodie, he was elected a member of the Court of Examiners, an appointment he held up to the time of his lamented decease, and in 1849 obtained, at the hands of his colleagues, the highest appointment they had it in their power to confer—viz., the president's gown—an honour again most worthily conferred on him in 1858. From Her Majesty's Government he received the appointment of President of the Council of Medical Education and Registration of the United Kingdom."

Mr. Green's long connection also with the veterinary profession, and the eminent services he rendered it from an early period down to its becoming an incorporated body, call for especial notice in this obituary.

In May 1819 he was unanimously chosen a member of the Board of Examiners of the Royal Veterinary College, to supply the vacancy occurred by the death of the younger Cline. Associating himself in the performance of these duties with the late Mr. Abernethy, Dr. Babington, Dr. Bailie, Sir A. Cooper, Dr. Cooke, Henry Cline, Sir E. Hume, Dr. Pearson, J. Wilson, and Professors Coleman and Sewell, he lived to see all these carried to the tomb of their fathers, and to have for his colleagues an entire new list of worthies.

On the attainment of the charter of incorporation in March 1844, Mr. Green, in common with the other members of the College Board, sent in their resignations, it being considered that their services were now no longer required.

This step is thus recorded in the College archives:—

"*Resolved.*—That whereas it appears by the charter lately granted to the Royal College of Veterinary Surgeons, the present Board of Examiners is virtually dissolved, we, the medical members of the said Board, respectfully tender our resignations with every wish for the suc-

cess of the Veterinary College, an institution of such permanent benefit to the interests of the public.

(Signed) "JOSEPH HENRY GREEN.
"JOHN AYRTON PARIS.
"EDW. STANLEY.
"ROB. LISTON.
"RICH. BRIGHT.
"BRANSBY B. COOPER.

"March 20th, 1844."

At the first meeting of the Council of the Royal College of Veterinary Surgeons in April, it was resolved "that a *mixed temporary* board be appointed to examine the pupils attending the Royal Veterinary College of London, and the Veterinary College of Edinburgh, who now are, or who, between this and the first day of October next, may be ready for examination."

Mr. Green, in common with his late colleagues, was invited to take part in the duties of this *temporary* court, a request to which he and they, with one exception, Dr. Paris, having been elected President of the Royal College of Physicians, had determined to retire altogether as an examiner, most readily assented. On the assembling of the Court, Mr. Green was unanimously chosen its chairman, a post he continued to occupy till the formation of a permanent board, when, having succeeded in assisting the body corporate through a most critical period of its existence, he tendered his resignation, receiving the thanks of the Council for his distinguished and eminently useful services.

The death of Mr. Green, although at last sudden, was not altogether unexpected; for he had been labouring for some months under a severe attack of gout, complicated with disease of the heart, from which it was hoped, by the kind and skilful treatment of Dr. Brinton, his attached friend and physician, he had recovered. This gentleman had suggested the resignation of several offices held by the deceased, in order that, by affording rest, so valuable a life might be prolonged for some time, and he had so far recovered as to be able to visit his sitting-room, when on Sunday last he was suddenly seized with his fatal illness, which carried him off in his seventy-second year. He leaves a widow and a large circle of friends to deplore one of the greatest losses which the medical profession has sustained for many years.

Thus one after another goeth hence, obeying the irrevocable decree. Death has been designated "Nature's signal for retreat," and 'twould be well for us to remember the epitaph of the Roman captive, "Non omnis moriar," for soon we too must shuffle off this mortal coil, and some even now may feel their "mud-wall cottage" shake. May it be ours when the summons comes to be ready to enter the portals of the grave as peacefully as one who wraps the drapery of his couch about him, and lies down to pleasant dreams.

To sleep! perchance to dream;—ay, there's the rub;
For in that sleep of death what dreams may come,
When we have shuffled off this mortal coil,
Must give us pause.

[We are indebted to *The Times* for that portion of the Obituary of the late Mr. Green which does not relate to his connection with the Veterinary College.]

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Communications and Cases.

OBSERVATIONS ON URINE AND URINARY
DEPOSITS IN RELATION TO DISEASE.

By Professor VARNELL, Royal Veterinary College, London.

Malassimilation of the materials taken into the intestinal canal is likely to occur in the horse as in other animals, varying, however, both in its degree and nature. This being the case, we may reasonably conclude that the products of secretion, particularly those of the kidneys, would also vary, both in relation to the proximate principles of which the aliment consists as well as of those of which the animal body is composed. These variations being determined, and compared with the healthy standard, ought to give us a clue to the nature of the derangement in an animal's body, as also of the organs principally involved. It need not surprise us when we consider the probability, nay, the almost certainty, of unnatural substances, in a fluid state, being absorbed from the interior of the intestinal canal and conveyed into the circulation, that they should cause a disordered state of the whole system, but especially of those organs whose duty it is to eliminate such materials from the blood. Bearing this in view, the physical character of the secretions which we often observe—the urine, in particular—ought to suggest to us the advisability of determining the nature of the changes that have taken place. Knowledge thus obtained, but which can only be arrived at by aid of the microscope and chemistry, would, no doubt, materially assist us in forming a true diagnosis, and also in suggesting suitable therapeutics for the expulsion of that

which is injurious from the system, as well as the restoration of deranged function. It would also point out the kind of food best calculated to facilitate recovery and the preservation of health. In human practice the examination of urine, as a help to diagnosis, has long been made a study. Even before it was scientifically investigated, the *charlatan* worked upon the credulity of the public by pretending to know the nature of their maladies simply by looking at a small quantity of their urine. For many years the study of the urine, both in health and disease, has been considered of the greatest importance by the physician, and, no doubt, many valuable practical results are the fruits of such investigation. Now, if *uroscopia* is important in the practice of human medicine, surely it ought to be of some value in comparative pathology; yet how rarely do we find that the veterinary surgeon takes any special notice of the character of the urine of the horse when treating his diseases. Whether the animal urinates or not may be asked, and perhaps the quantity voided, as also the frequency of the evacuation during the day or night, may be inquired into, but the quality of the urine seldom, I am inclined to think, enters the mind of the practitioner. Even the groom, coachman, or the carter seems to attach more importance to the renal secretion than the veterinary surgeon; for whatever is wrong, either real or imaginary, with the horse he has the care of, he will tell you, "his water is bad; that his kidneys are wrong, &c.; and that he wants something to make him stale well." Of course such a one does not pretend to know the why and the wherefore, nevertheless there is often some truth in his remarks, although they may seem to be more the result of instinct than observation. These people often raise an alarm about the horse's urine when, in reality, nothing whatever is the matter, and many a half dozen diuretic balls have been supplied at their request to correct the supposed ailment. Nevertheless some heed should be paid to their statements, for valuable deductions are often to be drawn from remarks made by attendants on sick animals; in fact, as our patients cannot speak, we are obliged to depend very much on the statements of those under whose care they are placed, but then the veterinary surgeon must be on his guard against deception.

Like many others of my professional brethren, I have been only a superficial observer of the characters of the urine of the horse when labouring under disease; and not having studied the chemical character of this secretion under different circumstances, so as to be enabled to turn such knowledge to an account in forming either a diagnosis or prognosis,

I have thought of giving more attention to the subject than I have hitherto done. Should the conclusions at which I arrive be thought to possess sufficient practical value, I hope to be able to lay them before the profession, trusting that they may not only be of some benefit, but also that they may act as incentives to exertion in the same field of inquiry; one which we must all admit requires to be better cultivated.

This task I should not undertake did I not hope to enlist the co-operation of Professor Tuson, who, I think, is inclined to devote some of his valuable time to zoo-analyses, and without whose aid my remarks would fall far short of what the subject really demands. Members of the profession can also render us much service by contributing such information bearing on this subject as may from time to time come before them.

An interesting case of the kind alluded to has recently been communicated to me by Mr. Catteral, M.R.C.V.S., who also furnished me with some urine taken on two different occasions from his patient. The first sample was obtained at the time when the disease was at its height, and the second when the mare was far advanced towards recovery. Mr. Catteral wrote as follows:

DEAR SIR,—Agreeable to your request, I send you a detail account of the symptoms of the disease and the treatment I pursued with the mare I consulted you about in December last. They are as follows:

On the 14th of December I was requested to see a brown mare, the property of Messrs. Franconi, the proprietors of the equestrian troop. On my arrival I found the mare to be labouring under the following symptoms:—Pulse from 80 to 90 per minute, and thready in character; no appetite; visible mucous membranes much congested, and of a yellow hue; respiration disturbed; tongue and buccal membrane dry and hot; breath offensive; legs of a natural warmth. I was informed that she had not taken either food or water since the day previous, and that she had not voided either fæces or urine. I considered the case to be somewhat complicated, but that the liver and kidneys were the organs chiefly involved, more particularly the latter. Her work in the "ring" consisted in carrying a man, weighing upwards of thirteen stone, who was in the habit of throwing as many as ten somersaults each evening, and alighting upon her back, over the region of the kidneys. I first explored the rectum, which I found to be empty; afterwards I passed the finger into the opening leading to the bladder, when a convulsive effort was made to urinate, and about three ounces of thick, ropy fluid were passed. Upon further examination, I found that the bladder was nearly empty. I gave a draught composed of—

Decoc. Aloes com., ℥iij;
Pot. Bicarb., ℥ij;
Spit. Æth. Nit., ℥j;

threw up a clyster, and had her placed in a loose box, and ordered that she be kept as quiet as possible. In the evening she passed about three

or four ounces of thick, ropy urine of a greenish colour. The draught was repeated.

15th, a.m.—The mare is evidently worse; her coat looks more unhealthy; the visible mucous membranes are of a deeper yellow colour; the breath is fetid, and the tongue much furred; she also coughs frequently, and I was told that she had been pawing all night, principally with the right fore foot. Repeated medicine as before, and passed the catheter and drew off about eight ounces of thick, dark-coloured, ropy urine, which was very offensive. She continued much the same throughout the day.

17th.—The symptoms have undergone but little change, with the exception of the mare being evidently weaker. She had passed a small quantity of hardened dung, which was covered with mucus. Repeated the medicine.

I now began to think that both liver and kidneys were structurally diseased, the latter in particular, which induced me to collect some of the urine for further inspection. P.M.—The mare was straining frequently, as if endeavouring to void her fæces. Gave another clyster, and a draught composed of *Ol. Ricini*, ζv , and *Tinct. Opii*, ζj .

18th.—No better; bowels still constipated; had not urinated; pulse more frequent, and almost imperceptible. Knowing that I should do no good until the bowels were relieved, and taking into consideration the amount of purgative medicine she had already taken, I determined to try the effects of the following agents:

Acid. Muriat., $\zeta i s s$;
Ext. Tarax., $\zeta s s$;
Nit. Spt. Æth., ζj .

This was ordered to be repeated twice within twelve hours. In the evening she seemed much better, passed some dung, and also a small quantity of urine.

19th.—She is much better. From this time I continued the use of last-named medicine, under the action of which she improved very fast.

22nd.—She is so far recovered that I consider her out of danger.

Such is a brief account of the case, which is at your service to do as you please with.

To Professor VARNELL.

I am, &c.

I have thought it advisable to make use of nearly the whole of this communication, as the symptoms and cause of the disease therein described are so strongly characteristic of functional derangement of the kidneys and liver, and also of the blood having been, at one period at least, loaded with effete matter. To have curtailed the communication in any way would certainly have detracted from its value.

Both samples of urine were analysed by Professor Tuson, and the following is his report, which to my mind strongly confirms the opinion respecting the organs which were chiefly involved.

REPORT ON THE EXAMINATION OF THE TWO QUANTITIES OF URINE REFERRED TO IN THE FOREGOING CASE.

By Professor TUSON.

The quantity first received—

1. Was neutral to test-paper.
2. Was so viscid that the urinometer could not indicate its specific gravity. From the glairy consistence of the urine, and from the extreme slowness with which it would mix with water, together with the fact that, when magnified, the urine was observed to contain aggregations of nucleated corpuscles agreeing in appearance with those depicted in chemical and microscopical works as mucous corpuscles, I consider that the abnormal viscosity was occasioned by the presence of mucus.
3. Was turbid, owing to mechanically suspended solid particles. This solid matter was collected and specially examined. Its leading characters are as follows:
 - a.* Under the microscope it was seen to consist of collections of angular particles.
 - b.* It readily dissolved in warm water. (If the original urine be warmed, the turbidity disappears, and reappears slowly on cooling.)
 - c.* Acted upon by nitric acid and ammonia, murexid was formed.
 - d.* Treated with hydrochloric acid, it was decomposed, uric acid precipitated, and the soluble portion contained chloride of sodium.

These four reactions (*a*, *b*, *c*, and *d*) are highly characteristic of *urate of soda*.

4. Mixed with strong nitric acid, it darkened and became almost solid, from the deposition of crystals, which were not those of nitrate of urea.

Hydrochloric acid did not produce the same reaction until after the urine had been concentrated by evaporation, probably in consequence of its containing more water than the strong nitric acid.

These crystals were proved to be hippuric acid, by their being—

- a.* Acicular in shape, and by the acicular crystals arranging themselves in stellate and circular groups.

- b.* Soluble in water and alcohol, and by their depositing again, with their original shape, from these liquids, after evaporation, and by the aqueous solution being acid to litmus.
- c.* Easily melted at a gentle heat, and solidifying into a crystalline mass on cooling, and entirely vaporized at a high temperature.
- d.* By their aqueous solution, after careful neutralization with ammonia, yielding—
- a.* A white precipitate with nitrate of silver, readily soluble in nitric acid.
 - β.* A white precipitate with acetate of lead.
 - γ.* A reddish-brown precipitate with chloride of iron.
5. The urine, in the state in which it was received, was submitted to microscopic examination, when the undermentioned bodies were detected:
- a.* Epithelial scales.
 - β.* Floating corpuscles (mucous corpuscles), already referred to.
 - γ.* A few well-defined octahedral crystals, which were insoluble in acetic acid, but soluble in hydrochloric acid; thus indicating that they were composed of oxalate of lime.
6. The amount of hippuric acid in 1000 parts of the urine was determined.
- The total amount of solid constituents was likewise ascertained.

In the table below these amounts are given, as well as the quantities of the same ingredients found in the urine of a healthy horse, at two different periods, by Von Bibra.

	VON BIBRA.		TUSON.
	<i>1st Period.</i>	<i>2nd Period.</i>	<i>(The viscid urine.)</i>
Hippuric acid . . .	12.60	1.23	24.00
Solid constituents . . .	144.91	87.16	169.57

The chief peculiarities of the viscid urine are—

1. That it contains an excessive amount of solid constituents.
2. That it contains an excessive amount of hippuric acid.
3. That it contains urate of soda, a substance generally believed to be absent in the urine of the herbivora, although Fownes has asserted that he detected a minute quantity of uric acid in the urine of a horse.

The second quantity of urine received.—

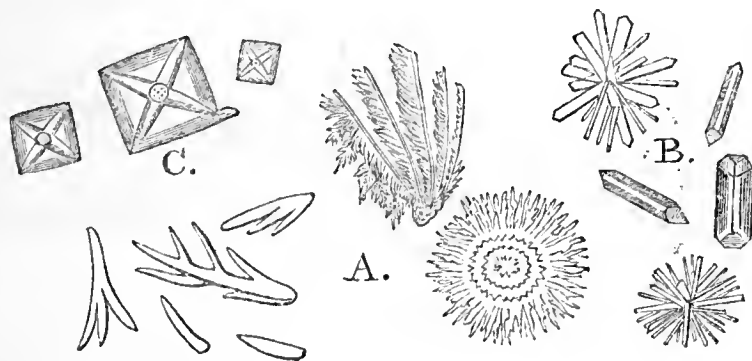
This quantity of urine was submitted to the same system of chemical and microscopical analysis as the first quantity, but it yielded none of what may be termed the extraordinary reactions already detailed, in reference to the presence of urate of soda and excesses of mucous and hippuric acid.

Its specific gravity was easily determined, and found to be 1050, which is about the average.

By the microscope, crystals of oxalate of lime were discovered; but as this substance is said to be very frequently found in the urine of the herbivora, its occurrence in the two samples of urine examined does not, as far as I can judge, call for any special remark.

In short, this second quantity of urine appears to be of normal composition.

In the annexed figure, A represents the microscopic appearance of the crystals of hippuric acid when rapidly deposited from solution; B, the same substance slowly crystallized from its solutions in water; and C, the microscopic characters presented by the crystals of oxalate of lime, as they floated about in both quantities of the urine examined.



ON COTTON-CAKE.

By Professor TUSON.

To produce the greatest weight of beef, mutton, and the various other kinds of animal food used by man, of the best quality, in the shortest time, and at the lowest cost, is a problem which the farmer is continually endeavouring to solve. At one time the solution of this problem was effected by the agriculturist feeding his stock upon home-grown produce only, but of late years the same objects have been, at all

events partly, accomplished by the employment of a great variety of vegetable materials imported into this country from abroad. Now, it is to the physical peculiarities and chemical composition of one of these foreign food-stuffs to which I beg to be permitted to direct the attention of the readers of the *Veterinarian*. The material to which I refer is called *cotton-cake*, and is obtained chiefly from the southern states of North America. It is prepared by submitting to pressure the seeds of the cotton-plant (*Gossypium Barbadosense*), by which means an oil is expressed that may be applied to many of the purposes for which unctuous oils in general are used, and there remains between the plates of the press the remaining components of the cotton-seed; these components cohere and constitute the feeding-cake forming the subject of this communication.

Dr. Voelcker, to whom, I believe, we are indebted for the first published analyses of cotton-cake, states* that this material is introduced into the market in four conditions or forms, viz.—

1. Whole-seed cake.
2. Thick decorticated cake.
3. Thin decorticated cake.
4. Meal produced by grinding decorticated cake.

In addition to these four varieties I have had a fifth occasionally submitted to me for analysis, which was evidently a meal prepared by crushing the whole-seed cake.

The peculiarities and differences of character enjoyed by these five varieties will be best considered after attention has been given to their chemical composition, a point to which I will now refer. In the subjoined table will be found a statement of the results of the analyses of various samples of cotton-cake, as determined in the laboratories of Dr. Voelcker and myself; and in order that the theoretical or scientific value of cotton-cake may be compared with that of a feeding-material of high repute, there is appended an analysis made in my laboratory of a sample of pure linseed-cake, manufactured in the Exhibition of 1862.

* 'Journal of the Royal Agricultural Society,' vol. xix, page 422.

	Prepared from whole Seed.			Prepared from Decorticated Seed.				Linseed-cake from Exhibition 1862. — (Tuson.)
	A. Cake. (Voelcker.)	B. Cake. (Tuson.)	C. Meal. (Tuson.)	D. Thick Cake. (Voelcker.)	E. Thin Cake. (Voelcker.)	F. Thin Cake. (Tuson.)	G. Meal. (Voelcker.)	
Water	11.34	13.18	12.02	9.66	9.27	11.67	9.80	12.25
Flesh-formers { Albuminous bodies	23.72	24.36	24.13	42.31	41.24	41.75	42.03	32.50
Heat - producers and fat-formers { Oil	6.18	5.97	5.19	16.69	16.05	12.61	18.55	12.74
Mucilage, &c.	30.97	23.63	27.54	14.23	16.45	20.50	13.79	24.72
Indigestible fibre	21.25	25.62	25.46	9.45	8.95	6.23	8.15	10.92
Ash	6.54	7.24	5.66	7.66	8.04	7.24	7.68	6.87
	100.	100.	100.	100.	100.	100.	100.	100.

A. These results are the means of two analyses.
 B. " " " " " five
 C. " " " " " three
 D. " " " " " two
 E. These results are the means of seven analyses.
 F. " " " " " two
 G. " " " " " two

By inspecting the foregoing table, it will be seen that the nature of the constituents forming *cotton-cake* in all its five varieties is the same as those composing our standard of comparison—linseed-cake; and as it is upon the peculiar functions of these constituents in relation to digestion, assimilation, &c., that the feeding values of the cakes depend, I may be excused for briefly reminding my readers of their leading characters and destination in the animal economy.

Water.—Although, as a component of food, water is of great value, physiologically considered, yet, looking at the question commercially, it is difficult to assign any value to it, so that one need only remark that, in purchasing feeding-cakes, all other things being equal, the less water a cake contains the higher will be its worth.

Flesh-formers.—These components are similar in chemical composition and properties to albumen, so that they have been termed the albuminous constituents; and from their containing the element nitrogen, they have likewise received the appellation of nitrogenous constituents. These are the materials of food which are chiefly concerned in contributing to the formation of the muscle or flesh of an animal, and to its other nitrogenized solids and fluids.

The respiratory constituents (heat-producers and fat-formers) contain no nitrogen, and so are often called the non-nitrogenized constituents of food. They include the oil, mucilage or gum, digestible cellular tissue, and similar bodies. These materials furnish the principal quantities of the hydrocarbonous matter which, during respiration, undergoes oxidation, evolving that heat which is so essential to the performance of the vital functions of an animal. If an animal undergo but little exertion, or take but a small amount of exercise, then a small proportion only of the respiratory ingredients of its food suffers conversion into carbonic acid and water, and the remainder is stored up by the animal as fat.

The indigestible fibre, although having the same chemical composition as the respiratory constituents, is, as its name implies, incapable of undergoing digestion, and cannot, therefore, possess a direct value as an article or component of food. However, indirectly it is said to do good service in giving that bulk to the food which appears so desirable in some animals, and of acting as a mechanical stimulant. In some cases, as we shall presently see, the physical condition of the indigestible fibre may be such as to warrant our looking upon it with suspicion, that is, as a material extremely likely to cause injurious effects to follow its introduction into the alimentary canal.

The ash is that small portion of the cake which remains after the other constituents have been dissipated by burning, and consists of the mineral components. The ash of food is the source of the mineral portion of the skeleton of an animal, as well as of the other saline matter found in the other parts of its body. It is, therefore, a highly essential ingredient of all kinds of feeding materials. The chief peculiarities of the ash of cotton-cake, according to Dr. Voelcker, are, that it contains a considerable quantity of phosphate of magnesia, and, in addition, the phosphates of potash and lime.

Having then very briefly glanced at the qualities of the components of cotton-cake, and at the applications which nature makes of these bodies in maintaining the health and life of animals, we will now compare the quantities of them found in the better descriptions of the various conditions of cotton-cake with the quantities of the same food-components found in the linseed-cake of good quality.

Products from whole seed.—These are two in number, viz., the cake obtained by crushing the entire seed, and the meal produced by grinding the cake. By inspecting the table, we find, as, indeed, we might expect, they both have a very similar composition. On comparing the relative quantities of each constituent contained in the whole-seed cake and meal with those existing in the linseed-cake, we perceive that (omitting the water, as being of little importance) the former contains between 8 and 9 per cent. less flesh-formers, about 50 per cent. less oil, about 3 per cent. more mucilage and similar respiratory matters, *between two and three times as much indigestible fibre*, and about the same quantity of ash as the latter. If we were to be guided by the results of chemical analysis alone, we should conclude that whole-seed cotton-cake and meal, although containing a large proportion of indigestible fibre, and not equal in value to good linseed-cake, are nevertheless valuable feeding-materials; but if we also examine the physical characters, especially of the cake, we find that the large amount of indigestible matters which it contains is so extremely hard, sharp, and angular, that its consumption as food is likely to be attended with dangerous, if not fatal, results to the animals partaking of it. The experience of practical men corroborates these opinions, particularly in the case of inferior cotton-cakes, some of which contain as much or more than half their weight of husks; and there are cases on record wherein there is little doubt but the death of stock has been occasioned by the use of cotton-cake of this description.

For example, Dr. Voelcker, in the paper already referred

to, says, "After the foregoing pages were in type, I received a note from Mr. John Fryer, Manor House, Chatteris, enclosing a sample of cotton-cake, and giving a short account of the death of a bullock that had been fed upon the cake, and upon mangolds, barley-meal, and clover-hay. Mr. Fryer enclosed the following report of the veterinary surgeon :

"*Surgeon's post-mortem examination.*—'Internal and external appearance healthy, nothing inflammatory. Paunch enormously distended with food. The manifold (I speak as butchers speak) crammed and jammed full of substance like tough dough rolled hard, and adhering to the folds. Lower stomach quite empty. The duodenum, for twenty-four inches in length, entirely blocked up with two or more pounds of the irregular-shaped concave and comminuted husks. Upon comparing them microscopically with the cake before eaten, they were found to be identical.'

"This report leaves no doubt about the cause of death. The distension of the first bowels was evidently caused by cotton-husks, which, I am informed, were pressed so tightly into the bowel as to give externally the appearance of stones."

Again, Mr. James Crowhurst, M.R.C.V.S., of Canterbury, in the *Veterinarian* of November, 1863, has published a case to which I beg to refer the reader, and in which it appears that whole-seed cotton-cake was the cause of the death of several animals.

In addition to these published accounts of the injurious effects of the indigestible husks of cotton-seed, which appear in some cases to act as a mechanical irritant, similar testimony has frequently been verbally communicated to me, equally tending to prove that the undecorticated cake, if used for feeding purposes at all, should be given sparingly and cautiously, especially to young animals.

The products of decorticated seed, i. e. of the kernels only, are of three kinds—thick and thin cake, and meal. Again instituting comparisons as with the whole-seed products (after dismissing the water from our consideration, as being unimportant), we notice that in the decorticated products the amount of flesh-formers is 10 per cent., and the oil sometimes as much as 6 or 7 per cent. higher; the mucilage, &c., 8 or 10 per cent., and *the indigestible matter from 1 to 5 per cent. lower* than in the Exhibition linseed-cake. The proportion of ash is about the same in all kinds of cotton-seed productions. The circumstance, therefore, which most arrest our attention is the comparative absence of indigestible material; and it must be observed that that which does exist in the varieties

to which we are now alluding does not possess any of those objectionable qualities already mentioned as belonging to the husks of the whole-seed cake.

It is of great importance, also, to mention that even the decorticated cake, existing as cake, is only broken into small fragments with extreme difficulty, a circumstance which evidently interferes with the facility of its practical applications, and which constitutes one of the objections to its use by the farmer. Some manufacturers crush and grind the decorticated cake to powder, dry it, and send it into the market under the name of "Patent Kiln-dried Oil-meal." Now, here we have a material which theory and practice alike declare possesses feeding-powers not merely equal, but superior to those of good linseed-cake; and it is only recently that one of my pupils (Mr. Clarke) at the Royal Veterinary College informed me that his father is, and had been for some time, in the habit of feeding his oxen on decorticated cotton-cake; and such was this gentleman's opinion of the latter material, that he considered his stock thrived better on it than upon linseed-cake. I have received similar reports from other sources. In conclusion, I trust that the information set forth in this paper, although not altogether novel, will be, nevertheless, of some slight service to the veterinary surgeon, by directing his attention to a feeding-material which is gradually gaining notoriety amongst the agricultural community, and which, according to its kind, may be employed with great advantage; or may, we have good reason for believing, be productive of injury or even the death of animals to which it may have been given.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor BROWN, M.R.C.V.S., London.

(Continued from vol. xxxvi, p. 717.)

CATARRHAL AFFECTIONS.

DURING our observations upon catarrhal affections, we have been compelled to disregard the usual systems of classification. Maladies have not arranged themselves according to

the conventional mode. We have not succeeded in assigning precise limits to any one of the forms which the disease assumes.

From the first appearance of "common cold" we have traced the mucous irritation extending from the nasal membrane to the bronchial tubes, even to their minutest ramifications. Associated with these conditions we have found deposits in the lung tissue; and further, extensive alterations of the structure of the liver.

Diagnosis in such cases as those we have been considering must inevitably be vague; and hence the convenience of such terms as "influenza," "bronchitis," "low fever," and "bilious fever," expressions which may be liberally interpreted, and are yet sufficiently exact to satisfy the non-professional inquirer to whom an exposition of the complications of disease would prove embarrassing, rather than instructive, even supposing the whole of the elements were familiar to the practitioner; but instead of his being able to see at one view the entire state of disease the symptoms often only assist him to a suspicion, or still worse, mask the important malady completely.

After a careful *post-mortem* examination has exposed all the morbid changes, it would still be very difficult to give a name to the disease expressing all its characters; what term, for example, would indicate irritation of the mucous membrane of the respiratory tubes, the stomach and intestines with deposits in the lung structure, effusion into the pleural sacs in association with fatty degeneration of heart and liver? and yet all these are frequently co-existent in animals that presented no indications of disease previous to the catarrhal attack; if we except the fact of their being, as dealers' horses generally are, in a plethoric condition.

Allusion to diseases of heart and liver may possibly seem out of place when discussing affections of the respiratory system; the connexion between the two being by no means obvious, and the two organs in question being of sufficient importance to merit a separate notice. Our only defence is found in the fact of the very common association of such apparently distinct affections: fatty disease of nearly all the organs in the body is not remarkable in overfed animals; of these organs the heart and liver would certainly exercise a more important influence than either of the others likely to be similarly affected; but it seems that only when the system is deranged by an attack of a febrile character that these organic changes cause such disastrous consequences, inducing an irregularity of the circulation on the one hand, and leading

to an accumulation of effete products in the blood on the other.

An important question naturally arises in reference to these diseases affecting such vital organs; it is asked, "how is it possible for an animal, with his heart so changed in structure, as to have lost the appearances which belong to its healthy fibres, and with a liver enlarged to nearly double its proper size, softened, pulpy, pallid and incapable of supporting its own weight without breaking to pieces; offering no resistance to the finger; its cells charged to bursting with fat-globules; its capsule on the point of giving way to the pressure of its contents; its function perverted, to exist under ordinary conditions of stable management, performing some kind of work, subjected to the same supervision as other animals in the same establishment, without showing some signs of derangement?"

The question is pertinent and cannot be evaded; but as scientific pathologists we are not concerned with the possibility. We have to do with the facts as we observe them; and first let us clearly state a case that is not hypothetical, nor exaggerated.

A horse, young, perfectly lively, with good appetite, and in the common acceptation of the word, healthy, is sold by the dealer, who had the animal from the country in a plethoric condition, and has done his best to keep him so. The horse has had daily exercise in harness or with the saddle, and up to the moment of his removal is "fresh." Previous to his purchase he is ridden or driven, or both, and evidences by his actions an exuberance of spirits, opposed to the suspicion of serious constitutional derangement. He is not, of course, severely tried; a fat, "dealer's horse," is not supposed to be in a condition to undertake a long journey, or run with the hounds; but short of this, there is nothing which the dealer, the horseman, or even the veterinary surgeon can discover, except what is apparent to everybody, "the horse is *fat*," his heart beats quickly after a little exertion, his respiration is similarly excited, nevertheless his eye is clear and bright, his spirits are good, and his appetite excellent. In this state he is taken to his new home; during the journey or from change of stable he contracts a little cold, which quickly takes on an unfavorable character, the disease extending to the lungs, and in one week from the time of sale he dies, and on examination is found to be affected as we have described, with enlargement and softening of the liver, and fatty degeneration of the heart, in addition to the pulmonary affection which has immediately destroyed his life.

In this case one of two things must be true.

Either the heart and liver were in a condition of fatty disease previous to the catarrhal attack, or they became so during the week of the illness preceding the animal's death. If we succeed in disproving the latter position, the former becomes self-evident. The adoption of this method will be most simple, concise, and satisfactory.

Absolute evidence upon the point under consideration cannot be obtained, our conclusions therefore must be inferential; but by an inquiry into the conditions under which fat is deposited we shall not find much difficulty in forming a decided opinion.

First. The deposition of fat pre-supposes the consumption by the animal of food containing a certain per centage of fat-producing elements, for any excessive deposit of fat an excess of such elements is required.

Secondly. The digestive powers must be sufficiently active to appropriate these elements of food previous to their deposition.

Thirdly. The process of "fattening" requires some considerable time under the most favorable circumstances.

Fourthly. The artificial production of the disease occupies some weeks when animals are purposely crammed with diet rich in fat elements, and are altogether kept in a state most favorable for the development of the condition.

In the case before us none of these circumstances are present.

During his illness the horse's appetite is certainly impaired, probably lost, so that less food of any kind is consumed. His digestive functions are less active. The time is not sufficient to permit any large deposit of fat, even were its elements consumed and digested. Taking into account the period required for the production of the fatty disease when all the circumstances are favorable, it will amount to a *reductio ad absurdum*, to assume its development in a shorter period, all the circumstances being unfavorable.

It would not be difficult to strengthen this conclusion by reference to the animal's previous history, the evidence he offers in his own condition of the consumption of food containing a large amount of fat-producing materials, coupled with the fact that the object has all along been to induce such a state of obesity as now amounts to actual disease.

So long as purchasers demand the smooth and rounded outline will the same course be pursued; and good, sound, "seasoned" horses continue in scarceness. Complications such as we have been discussing do not of necessity lead to a fatal

termination in every case of otherwise tractable disease; but in every instance they diminish the chances of successful treatment, and necessitate greater watchfulness on the part of the practitioner to guard against the prostration to which there is so decided a tendency. All depletive treatment must be rigidly excluded, anything likely to depress the nervous action might cause the already faltering pulse to cease at once.

When much irritation is present, tincture of opium or hyoscyamus are the only narcotics we venture to employ. Our febrifuge medicines consist principally of nitrate of potass or the carbonate; and tincture of gentian or bark usually forms a part of every mixture, when not contra-indicated.

Fatty degeneration of the fibres of the heart of the horse is, as far as we are concerned, a more recent discovery than the same disease of liver, arising out of an examination of parts sent by Mr. Gowing, whose attention was attracted by some peculiar symptoms in a case he had been called to see, when the animal's state precluded any hope of recovery; since then we have reason to conclude the malady is as common among fat horses as is the "fatty liver."

It will not be necessary to insist further upon these points at present, to the exclusion of the subject in hand, but in a matter of such importance we may venture to offer some remarks at a future time.

After this digression, which we could hardly avoid, it will be desirable to return to the consideration of the diseases of the mucous membrane of the respiratory organs, devoting our next paper to an examination of those affections which may be properly termed inflammatory.

A COMPACT OSSEOUS TUMOUR CONNECTED WITH THE SINUSES OF THE HEAD OF A HORSE.

By B. CARTLEDGE, M.R.C.V.S., Sheffield.

I SEND for your inspection an "ivory tumour," with part of a horse's head, to which you will see it was attached by a very small pedicle. I have never met with anything of the kind before, and, no doubt, such specimens are exceedingly rare. I regret that I can give you no further account of it than that it was brought to me as you see it by the knacker,

who got possession of the horse (an aged one) because it was unable to work, and the owner had destroyed it in consequence.

Of these tumours I am not aware that any of our own authors speak; but Paget, alluding to them, says—

“These hard, osseous tumours are rarely found except in connection with the bones of the skull—sometimes, however, with the lower jaw—and are less rare amongst animals in this situation than in man; their texture is very like that of the internal table of the skull, the petrous bone, or lower jaw.”

Another writer, Rokitansky, thus describes them:

“Compact exostosis is the most frequent, and occurs on compact bones and parts of bones, particularly on the outer table of the cranial bones. It appears as if placed on the surface of the bone from without, and often separated from the bone by a furrow, which is generally narrow, and frequently deep, forming a fissure between the tumour and its basement, making the exostosis appear as if glued on, like a mushroom on a very short stalk. It often exceeds in density the bone whence it springs, and is then known as ivory exostosis. It is compact from the very first, and as the layers are added to it they at once become as dense as ivory. No spongy structure is found in them. The Haversian canals are small and far apart, and many of them surrounded by a distinct, well-defined, lamellar system. Sometimes they are numerous in the same person.”

“In the College of Surgeons Museum there is a specimen from the forehead of an ox. It is like a great spheroidal mass of ivory, measuring eight and half inches in diameter, and weighing upwards of sixteen pounds. Its outer surface, though knotted and ridged, is yet compact, like an elephant's tusk, and its section shows at one part a thin investing layer, like the bone covering ivory. It is nearly all solid, hard, close-textured, and heavy; only a few irregular cavities, and one with smooth walls, appear in its interior, and orifices of many canals for blood-vessels may be traced. Quekett found that it had a higher specific gravity than any bone, except what is found in the porcelain deposits on the head of bones affected with rheumatism. It has, however, in every part the structure of true bone.”

[Among the specimens of osseous tumours contained in the College Museum are three of the same description referred to in Mr. Cartledge's communication. No. 1, the largest, weighs 8 lb. 7 oz., and measures in its long diameter $10\frac{1}{2}$ in., and $5\frac{1}{2}$ in. in its short diameter. It is of a square

form, very solid, but somewhat convoluted on its surface. No. 2 has a form and aspect not very unlike the brain. In its long diameter it measures 6 in., and 5 in. in its short. It also is solid throughout. It weighs 4 lb. 15 oz. No. 3 weighs 4 lb. 14 oz., and is ovoid in form, having a thin but elongated point of attachment on its one side. Its long diameter measures 7 in., and its short 4 in. It was attached to the inner side of the lower jaw of a horse, but no sufficient history belongs to the other specimens, although tradition assigns the larger one to having been growing from the skull of a cow.

The specimen sent by Mr. Cartledge is spheroidal in form, and of a size somewhat larger than a cricket-ball, its circumference being in one direction $11\frac{1}{2}$ in., and in the opposite $10\frac{1}{2}$ in. It is very compact and solid, and weighs 1 lb. $5\frac{1}{2}$ oz. The surface, which is irregularly nodulated, is deeply marked also in several places with furrows by the blood-vessels which ramified upon it. At one spot it shows the remains of a small pedicle by which it was attached. On section, the tumour presented the ordinary appearance of these growths, no dentine (ivory) or other tooth-structure being present. The Haversian system was found to be very complete, both in size and development, but wanting that uniformity of arrangement met with in normal bone. The tumour had originally been formed within the maxillary sinus on the left side of the face, its base resting upon the upper extremities of the alveoli of the fourth and fifth molars in particular. In process of development it led to absorption of the osseous walls of the alveolus of the fifth molar, so as to slightly expose the fangs of the tooth, and lead to its lying partially in contact therewith. Its growth inwards effected the removal almost entirely of the bony partition between the maxillary sinus and the nasal cavity, thus not only bringing its greatest portion within the ordinary air-passage, but its surface in contact ultimately with the septum nasi. The surrounding bones, however, do not present any evidence of disease, either of their tissue or their coverings. The location of so much of the tumour within the nasal cavity must have caused a considerable impediment to respiration, which probably was one of the chief reasons why the horse was destroyed.]

OSSEOUS TUMOUR REMOVED FROM THE STIFLE-JOINT.—ITS TRUE NATURE?

By Mr. LAMB, First-Class Veterinary Surgeon, Kirkee,
Bombay Presidency.

IN the *Veterinarian* for December, 1862 (p. 774), is an account of an ossific tumour removed from the back of a mare by Mr. Longman, V.S., 9th Lancers, upon which Professor Varnell remarks that the tumour must not be considered as true bone, which, from its hardness and weight, it might be taken for, because, unlike true bone, it is wholly destitute of the Haversian system of canals for the passage of blood-vessels.

I have the pleasure to enclose you herewith a thin section of a similar though much larger tumour, upon the nature of which I should be glad to have your opinion, for to me it appears, under the microscope, to have the Haversian system of canals, &c., remarkably well developed, at least in some parts, if not in all.

The tumour was situated over the off stifle-joint of troop-horse "No. 33, B Battery, 4th Royal Horse Brigade." I believe it had been under observation for about two years, in which time it had gradually increased from the size of a hazel-nut to its present dimensions. I removed it on the 23rd of February last. It was intimately connected with the skin, from which I dissected it carefully, dividing, however, three tolerably large arteries, which had to be secured. It was very loosely connected to the bones of the stifle-joint by cellular tissue. Immediately after excision it weighed 1 lb. 11 oz. *avoirdupois*. The surrounding cartilaginous mass being removed, it presented an appearance very like a petrified sponge, and measured ten and three quarter inches in circumference lengthwise, and nine inches transversely. I cannot ascertain, nor can I suggest, any cause for the formation of this tumour.

[We felt satisfied, by an ordinary inspection only of the section sent by Mr. Lamb, that the tumour from which it had been taken was essentially of a bony nature, but still it became necessary to prepare a portion of it for microscopical examination. On this being done, all the well-known characters of bone were distinctly observable, the Haversian canals, lacunæ, canaliculi, &c., being as perfectly arranged as is usually the case in all adventitious bony tumours.]

OBSERVATIONS ON SOUNDNESS.

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from p. 22.)

“BREAK-DOWN,” as it is commonly called, is a very significant term, inasmuch as it invariably puts a stop to the career of an animal for some time, and often for ever interferes with his racing qualifications, depending upon the seat and nature of the injury—which injury, *en passant*, is generally produced by violence. There are several kinds of “break-down,” one of which is met with in young, leggy, well-bred horses, which is nothing more than a rupture of the fibres of the cellular tissue connected with the flexor tendons; a second is when the sheath of the tendon has given way; a third, when the tendon itself has been injured; and a fourth, when the lesion is situated in the suspensory ligament. There are other kinds of “break-down” known to horsemen, such as a giving way of the lateral ligaments of the pastern joint, a strain of the ligaments of the sesamoids, and also of a similar injury to the tendons, &c., *below* the pastern joint.

The appearances met with in “break-down,” are familiar to most persons, and consequently very few can be found to invest money in an animal possessing this defect. There are, however, horses purchased by a certain class who find them extremely useful, as posters for light work, car-drawing, and other labour where happily they do not *draft* more than from ten to twelve stone. Horses which have been properly treated are found to do their work in a way satisfactory to their riders and drivers; but it must be confessed that a very long time is occasionally required to bring about such a result, especially when the lesion has been a serious one. The principal thing veterinary surgeons have to consider in examining such a horse is to thoroughly understand the parts which have been injured, to reflect upon the structure and function of those parts, and what the nature of the repairs to be effected is, and what work the animal will be called upon to perform. These are the main questions with which we have to do when we find a case of break-down presented for examination. If merely cellular tissue has given way, it becomes a simple affair; if sheath of tendon, our interest increases; should it be tendon itself, more serious still; and if the suspensory ligament be the seat of injury, then it behoves us to look not merely closely into the matter, but we

must give a few moments to *thought*, and endeavour if possible to ascertain with *certainty* whether the injury has left behind any impairment of action; for *very* much of our reputation depends upon the *kind* of opinions we advance when an *unsound* animal is *recommended by us to be purchased*. In these days, we shall be frequently called upon to scrutinise an unsound horse, and very often, no doubt, advise our clients to take the animal, although *pronounced* unsound. But we must exercise much discretion in making public our views, or we shall in a short space of time have war waged against us.

The most serious of all the "break-downs" I have met with is when the lateral ligaments of the fetlock-joint participate with that of the suspensory, being as it were "off-shoots" of this, as some term it, "tendon," and we may naturally seek for a participation of any great violence sustained by that ligament in the small appendages which are thrown off for the support of the sessamoids as well as of the extensor pedis, from the carpus to the joint below, made up as it is of the lower end of the metacarpal bone, the suffraginis and the two sessamoids. So much diversity of structure is here met with, that we need never feel, as some do, astonished to find our hands and eyes at fault when lameness exists in the front leg, if we can neither see nor feel anything wrong upon a slight examination. If we will but take into consideration the fact of the suspensory ligament being unlike any other ligament or tendon, and that bursæ are situated immediately underneath it, we can, I think, account in some measure for the difficulties we occasionally meet with in diagnosing lameness. I fear we do not sufficiently bear in mind the many peculiarities which exist in the various structures present within a given space.

I have before hinted that the fetlock-joint is not only an important one, but exceedingly complicated as a piece of mechanism; for example, let us look for a moment into its component parts, or in other language, the anatomy of the joint, taking into account the different textures which go to make up the whole; then the situation of those parts as they are related one to another in a *passive* state, comparing them with each other during locomotion, and consider their uses, and, lastly, dwell a short time upon the pathology of the whole joint, which will, I have no doubt, give us some idea of the many difficulties met with, and account for some of the failures which are occasionally witnessed by those who are more sanguine than others are in their practice. There are several methods adopted for ascertaining the probable extent of injury in a break-down. The usual one I employ is that

which I have no doubt is employed by most others, which is simply flexion and extension, and displacing the common integument both upwards and downwards, as well as in a lateral direction. By these means it will soon be learned whether any change has taken place in any of the structures. In one instance an *enlargement* of the parts will be seen; secondly, the integument will be closely allied to the sheath of the tendon, the tendon and its sheath cemented together, the tendons and suspensory ligament become as one. In another it will be found that the ligament is fixed to the metacarpal bone, and lastly, it becomes apparent to the close observer that the suspensory ligament is so changed that it has lost its peculiar character, a hard cartilaginous substance being produced in its place. In each and every case impairment of action is the result; the extent of which will depend upon the nature of the parts affected (and it may be added, the derangement of function will be visible in the same ratio as the alterations of structure which have been attempted to be described). A short time ago I met with a case in which integument, cellular tissue, sheath of tendon, tendon, ligament, and metacarpal bone were all amalgamated. This animal was destroyed by my wish, and afforded much information of an interesting kind afterwards. On looking at a dried specimen—a dissection for ligaments and tendons of a fore-leg, we shall be forcibly struck with its beauty and admirable arrangement for all the purposes of locomotion. At the same time we cannot help thinking how much simplicity is manifested in some portions of the limb, and it will be conceived without much reflection, that the simpler the arrangement the less liability there is for impairment of function; if we take for example the shoulder-joint, made up as it is of soft parts chiefly, we can soon understand how it is those parts are so seldom found to suffer injury. We all know that the farriers of old and some of the modern practitioners of veterinary surgery, who do not possess a knowledge of anatomy, still look to the shoulder for most cases of lameness in the front limbs. Those, however, who have received a liberal education are fully aware of the many blunderers who have preceded us. Take another example—the structure of the parts connected with the large metacarpal and the smaller bones—we find the anatomy between the lower carpal joint and the fetlock particularly simple, which will account for the immensity of wear and tear these several parts will bear; nothing short of a shock will disturb these structures, if we except that of splint and wind-gall. If they were not so constructed disease would oftener manifest

itself. I believe it is a law in mechanics that a simple spring is not so liable to err as one of a complex character, and so it is in the animal machine. We must not lose sight of other arrangements in this particular part of the animal mechanism; for instance, we must well consider that the metacarpal bone, the suffraginis, and the coronal bone, are standing one upon another *perpendicularly*; there is, indeed, not much obliquity at any part. We may, therefore, take it for granted that there must be considerable concussion, especially if the parts below are upright also. These reflections will guide us in some measure as to any opinions we may form when spoken to in reference to upright joints. On looking at the close connection existing between the metacarpal bones and the suspensory ligament, we can readily understand how an abnormal growth of bone must interfere with the even working of those parts (if carried to any extent), and more particularly at the setting up of inflammation. We sometimes hear of the tendon being rubbed against by a splint and causing lameness, I am inclined, however, to believe that the parties who hold such opinions know but little of the subject upon which they are dilating. If we look closely at the suspensory ligament at its bifurcation, we shall remark that it is making its way towards the lateral portions of the sesamoid bones; that these offshoots become intimately connected with those little bodies, an arrangement which tends to hold them in position. Still, it can be seen they have play enough to go out of position, if forced. If any portion of the suspensory ligament, either above the bifurcation or below, becomes materially injured, it must of necessity include some portion of this joint. It is the peculiar arrangement of the ligament, running, as it does, from behind the limb to the front, to form its attachment to the extensor tendon, which accounts for the fact that serious lameness is the result of a break-down of these particular structures; and it must be observed that when a limb is very upright, and the fetlock goes wrong, in many cases it will be found that inflammation will set in, and include all the structures found at this place. I have two specimens, which have been in my possession but a few months, taken from two young horses, both hunters, which are remarkable for what I have stated, viz., that all the parts connected with the fetlock-joints are diseased, more especially the bones; I will describe one case, which will suffice for both. A bay gelding, with upright pasterns, was ridden by a gentleman (who was much too heavy and too hard a rider for so young and unseasoned an animal) for some months, when

the horse gave way, or, in other words, broke down in one fetlock-joint (the other was also slightly affected). The owner of this horse treated him at his own house for some weeks in the usual manner, by employing water-dressings to the parts affected. Not feeling satisfied with the progress the case was making, he sent for me to go and fire both front legs, provided they were in a proper state. I examined both legs, and could not detect any abnormal heat in them, and I gave an opinion to the effect that firing was the best remedy to employ; and that, *if all went on well*, the horse would be fit to put to work in about three months. He was cast and carefully fired. In a few weeks the servant called to say the horse was going on well, that a *good job* had been made of the case, and that no blemish would take place, which I was pleased to hear. In about three months, or more, I learned that the horse was more lame than he had ever been, and that the opinion of a veterinary surgeon had been sought, which was to the effect "that the horse had been fired too severely" (this was a gratuitous piece of insolence). The owner took advantage of the opinion he had received from a "horse-dealing vet.," and held the operator responsible for the state of the parts at that time. An explanatory note was written, which led to some angry remarks from the owner, who, however, afforded me an opportunity of examining the state of the limbs of his horse. I found that the joint had been injured in three places by the *heel* of the *shoe* of the opposite foot, and it was plain that the horse had been in the habit of rubbing the skin upwards and downwards for several inches, so as to produce blemishes at each part, leaving the intermediate parts *untouched*. The *uninjured* parts bore marks of the iron, and the hair had grown in such a manner that they were scarcely discernible without looking closely at the leg. The joint was double its natural size, and externally inflamed—indeed, red—and remained so for six months. I kept the animal at my own expense, in order to see the termination of the case and to secure the limb after death. Finding no chance of relieving the horse, I advised he should be destroyed, unless kept for farm work, to which the owner would not consent. He was destroyed, and the bones from the knee to the foot are in my possession, a brief description of which may not be unacceptable. I found the large metacarpal, the sesamoids, the os suffraginis, the os coronæ, the navicular and the pedal bones discoloured; their hue is *purple*. The lower half of the large metacarpal bone is covered with spiculi, both anteriorly and laterally; the suffraginis is like-

wise covered by these osseous deposits. The result of the case gave ample proof of what amount of injury had been inflicted by the animal himself, if the story of the servant can be believed, which may be received as truth, or the owner would have spoken out before. This was a break-down of a peculiar character, which would, I have no hesitation in asserting, have terminated in a satisfactory manner if the horse had received proper attention at home; unfortunately, however, for the horse and also for the veterinary surgeon, both the owner of the animal and his servant knew too much in one sense and not enough in another. (I would warn all young men to beware of these very clever horse amateurs; if all goes on well and safely, they are very friendly indeed, but if cases turn out adversely, they are the most dangerous people we have to deal with.) The front leg, when found in a passive state, is, I have said, standing almost perpendicularly, so that a plumb-line placed at the point of the shoulder should touch the point of the toe on the ground; this is allowed by all judges of horses to be the acme of perfection as regards position. These several parts outside the hoof have never been known to become diseased or to sustain injury by long standing, except in mountainous districts or in ill-paved stables; in either case there is liability to injury of the flexor tendons. It will be inferred from these remarks, together with some at the commencement of this paper, that most, indeed all the injuries to which I have given the name of break-down result from violence, and that, as a general rule, when in motion. I chose the term break-down for all these lesions in preference to "strain of back tendon," "sprain of the sinews," and many others which I need not mention, as I consider the term sufficiently plain to be understood. If we will just take a glance at the limb of the horse during the various movements he is capable of producing, we shall, doubtless, commence with the walk or first movement. In this pace there is not much to bring about break-down; nor in the trot, it being so regularly and evenly performed, are we likely to find it, unless there be a hole into which a horse places his leg; nor does the canter afford many cases of injury of sheath of tendon, or anything bordering on break-down. When we increase the pace, and by it increase weight—for by increasing pace weight is increased at the same time, although no more weight is carried—we shall find cases of break-down frequently occur, and at the time the distance (if on a race-course) has been nearly run. I have known but

few breaks-down at the commencement of a race, except under extraordinary circumstances. When all the muscles are in full play, as they are found to be in a strong gallop, and an animal excited, amongst others, it is when these lesions take place, and especially so when the horse is almost used up at nearing the goal, and his jockey has *left go his head* and sat down to flog. This is the time the mischief is done, for it is at this juncture the horse is all abroad. I believe there are more races lost and more horses injured by this sitting-down system than by any other. If the horse, instead of having his head to himself, were to be held together, and a stimulus applied with the heel or even a shout, in many instances success instead of failure would be the result. I have witnessed many races where these reflections have been forced upon me; besides, the animal being held together, the jockey, watching the movements of his horse, would be less likely to take him upon uneven ground or give the chance of a break-down, as is too often done. It is when the limb is extended too far beyond its powers of recovery, that break-down takes place, and, as a general rule, under no other circumstances. To be plainer, I would state that the extensor muscles have been exerted beyond the power of the flexors, so that the latter have not sufficient strength left to overcome the former; a *dwelling* upon the soft parts below the knee is effected, and a giving way of those soft parts the consequence.

(*To be continued.*)

RETROSPECTS OF VETERINARY PRACTICE.

By "MENTOR."

To me it is always an incalculable source of delight to turn over the pages of the *Veterinarian* contemporaneously with those of my note-book, or otherwise to settle quietly down by the stillness of my own fireside, bent upon an extended overhaul of past volumes. It is thus that I have been impressed with the rapid strides the profession is making in its mode of viewing and dealing with disease. It is thus, also, we are taught to "go forward," under a deep sense of "self-insufficiency" and dependence upon the efforts of our brethren for their records, which, if we are candid to confess it, occasionally point out a little want here or there on our part. The feeling of healthy dissatisfaction with one's self

arises, and we are tempted to press on with renewed vigour.

He who feels otherwise than this—viz., satisfied with his stock of knowledge, having no need to cause himself trouble—should divest himself of all appertaining to a man of science. His is a hopeless case; to him I apply no further remarks.

Whilst recently engaged as above described, my attention was arrested by communications of various kinds; all of which are highly instructive and suggestive in their character. For some of these I would briefly refer in the succeeding papers, not, however, with the motives of cynicism, but with the view of mutual good.

The growing improvement, under your able direction, of the *Veterinarian*—a *multum in parvo* of the profession—thanks to each contributor, warns me against inattentiveness, and prompts me to give a push, however feeble, to the wheel which so faithfully represents the motions of the collective machine.

I am well convinced of the great talent and erudite attainments of many of your contributors, amongst whom I feel my own insignificance; but, nevertheless, I fearlessly throw myself upon their impartial judgment, under the full assurance that they value opinion, although it may differ with theirs. By it many have been assisted over stupendous difficulties, whilst it has afforded them the gratification of being able to perceive and rectify error. With these preliminary remarks I proceed to narrate some cases of—

POISONING BY YEW.

Several communications of this kind have appeared in the columns of the *Veterinarian* from various quarters. The following occurred under my immediate observation.

Near sixty black, Irish, cattle were purchased during November by a noble lord, now no more, and for a short time were turned into the park to graze. In consequence of the season having been unusually severe, the grass was exceedingly bare, and therefore all portions of rank grass, weeds, &c., which could be obtained, were eagerly devoured by the animals, and, in addition, the cuttings likewise of some yew trees, which had been thrown by the gardener into the ha-ha, in ignorance of their poisonous effects.

The land-steward, suspecting the cause of the sudden and serious indisposition among so many cattle to be due to the yew branches, at once despatched a note to me expressive of his forebodings. I attended, and found three of the number dead, and immensely swollen. Two others were

beyond hope; and they also shortly succumbed. The rest were more or less affected. Symptoms of great urgency presented themselves, such as haggard countenance; accelerated respiration; small, feeble, and wiry pulse, having a sensation of clicking under the finger. The beats were upwards of 90, but from the extreme uneasiness of the animals worst affected, I was unable to reduce them to any specific number. Horns, ears, and legs, cold. Eyeballs protruding; pupils dilated, with complete blindness in those cases which proved incurable. Abdomen tympanitic; severe tenesmus, with discharge of blood and slime; true alvine evacuations being either suppressed or very scanty. The animals kicked at the belly; twisted about; lashed the tail furiously, and threw the head violently from side to side; lay down, groaned, and rose to renew the actions as before.

The whole of them were at once driven into a spacious straw-yard, well littered down; and each had a drench administered as soon as possible, composed of—

Chloride of Sodium, ℥xvj;
Hydrarg. Chlor., ℥ij;
Ol. Crotonis, gutt. xv;

with large doses of aromatic powders.

My prognosis was unfavorable in many instances, and I fully anticipated an extensive addition to the number of casualties.

It was with fearful forebodings that I shortly paid a second visit, feeling greatly what a *desideratum* there was for an antidote of direct qualities against the active principle of the yew. My patients were, however, all alive, and certainly appeared easier, but the dejected look, languor, and feeble circulation, with a driveling of saliva from the mouth, bethokened but little improvement, if any, upon previous affairs.

Eight or ten hours having elapsed, I at once administered to each, in some cold water, Ammon. Sesquicarb. ℥vj, with Zinjib. Rad. Pulv. I allowed them tepid water to drink, and left orders to administer the ammonia every four hours.

Whether or not we should look upon the chloride of sodium as possessing any power of neutralizing the poisonous principles of the plant, I leave to more experienced minds for decision: Probably, I should infer, the purgative medicine only acted in the usual manner. However, be that as it may, by the use of the stimulants, enemas, &c., and the employment of a staff of excellent working and anxious attendants, our labours were rewarded by a recovery *en masse*. The fæces of each animal were, subsequently to convalescence, greatly impregnated with the undigested plant.

In the spring following, two valuable colts, under the same ownership, of the Suffolk breed, had strayed through a broken fence into a plantation of yew trees of not very aged growth, and, as gathered subsequently from uninterested persons, they were proved to have been there for several hours, the state of the trees being such as to show that a good meal had been obtained by the animals.

The terrors attending the previous case of wholesale poisoning were again aroused, and I was speedily summoned; but instead of finding the same symptoms, or thereabouts, as noticed in the black cattle, I was rather amused at the total absence of all such as would indicate the least sign of disturbance of health. A dose of purgative medicine was administered, and no ill effects whatever were noticed.

Whether the shoots of the young yew trees are irritant, I am not aware, but we might infer not from the above fact, and coupled with it that many times afterwards, when driving through the beautiful avenues of yew trees in the district, cattle were seen by me cropping them with an apparent relish. Besides, in no instance of poisoning that has occurred in my practice has death originated otherwise than from eating the dried cuttings at the close of the year.

With Mr. Dickens (*vide Veterinarian*, December, 1859, page 686), I am of the opinion that "very much of the deleterious action depends upon the quality or quantity of the ingesta contained in the stomach at the time the yew is taken, the season of the year, &c. The cases I have recorded are in favour of this. The black cattle, coming from a long journey only a few days prior to the occurrence, were low in condition, and the state of the grounds affording but scanty morsels; the digestive organs were, in consequence, the more exposed to the action of the plant.

The reverse, however, was the case with the cart-colts. They had been turned from the stable after the six o'clock feed, in the morning, which had consisted of oats and wheat, with chaff, pea-straw, &c. It was intended to fetch them up again when the ploughman returned at three o'clock p.m., but the steward, finding them in the *interim* as described, had them removed.

Owing to some misunderstanding having taken place between the men who carted away the dead animals and the steward, no *post-mortem* examinations were made. I was greatly disappointed at this, for I had promised myself a treat, and hoped to gather much from the appearances of the viscera, by which I might deduce reasonable inferences as to the origin of certain of the symptoms in the living animals,

and the probable quantity partaken of by them, from which, probably, also we might account for the recovery.

I have read with interest your remarks upon the subject at page 423, for July, 1859, which tend greatly to favour the view already taken of the above cases; but I hope to have an opportunity of practically testing the effects of the plant under different or modified circumstances, the result of which I shall forward for publication.

If any of my brethren should be able to institute any experiments of the above kind, I trust they will record them also.

COLIC.

During the past year various opinions have been expressed on the treatment of this complaint, subject, no doubt, to the views of the practitioner as to its real pathology. Each article will amply remunerate the reader for a reperusal.

“Argus,” at page 13, in the January number for 1863, reasons well and plausibly in reference to the treatment of colic by aloes, as advocated by Mr. Gamgee. He does not object to their use when symptoms of constipation indicate the necessity of purgatives, but questions, and wisely I think, the propriety of relying solely upon this drug in every case of colic. He sums up his remarks by the powerful observation—“*That cases (pure colic, I argue) often present themselves in which it would be injudicious to use this drug, if not absolutely dangerous.*” And further—“*In very simple cases a ball of camphor and ginger is all that is required to set the animal right. Why, then, should we give from five to eight drachms of aloes?*” I have italicised the extracted sentences, because I think particular attention should be directed to them.

With regard to the employment of aloes as an internal remedy for colic, I should infer that Mr. Gamgee, as stated by Mr. Greaves (*vide Veterinarian*, p. 132, March, 1863) relies upon their effects as much, if not principally, as an antispasmodic. Mr. Gamgee, like a true champion of liberty, warmly admires an opinion in which he feels he is not bound to coincide. Now, had I not, in the spirit of search, carefully contrasted the specific virtues of both lines of practice, I should not, perhaps, have felt so disposed to say a word about colic; but after some years of trial, I have come to a decision as to its treatment, which not only is highly successful, but also very effective, speedy, and satisfactory, at least in my hands. I have no faith in “Parr’s Life-pills,” or any such medicament, which are set forth as a “Cure-all”

in every form and variety of disease. "Argus" complains, and not without reason, that it would be absolutely dangerous in some stages of this disease to administer aloes; and, *ergo*, turpentine and other stimulants, opium, &c., must, under certain modified influences, be equally prejudicial.

Colic, we know, will attack an animal when the digestive organs are not distended with food, but, as is well known, for the want of it, more properly. Under these circumstances a stimulant, almost of any kind, will answer, whether it be camphor and ginger, gin, warm ale, aqua ammoniæ, ether, or any allied medicament.

In other cases a certain quantity (not nearly the usual meal) of food may be taken, and upon quick exercise colic supervene; or the food may be slightly altered in quality, the system, probably, also wanting tone at the time, and spasm of the bowels follow. Such cases as these have frequently come under my notice; and I have invariably found that a stimulant, particularly the aromatic spirits of ammonia, has effected most marvellous results.

I recollect being summoned early one morning to go a journey of ten miles. The animal I drove was regularly fed upon chaff (*i. e.* cut food), bruised oats and beans, mixed; but she had been taken out when only half the meal was eaten. Symptoms of pain were evident before I completed the distance; and fearful of not meeting with accommodation in such a wild district as I then was in, I hurried on for the last two miles. The animal became very restless before being loosed from the gig; but I quickly had her removed to the stable, the harness taken off, and the stall well littered down.

The medicine chest in the vehicle supplied me with the Spts. Ammon. Aromat., one ounce of which I gave in cold water. Mr. Graves's words best describe the action of ammonia:—"It is electrical, and the finest antispasmodic we possess."

Some time before the occurrence just related, now several years ago, my confidence in aloes in *all* cases of colic had been shaken. Whether my dissatisfaction was inevitable from using the best Barbadoes instead of Cape or Socotrine, I do not know; but certainly I had cogent reasons for looking upon colic as possessed of various modifications dependent upon different causes. In the first place, I found that in ordinary cases of spasm (aloes, in small doses, say five or six drachms, given to moderate-sized animals) produced *nausea* and *subsequent purgation*, owing, no doubt, to constitutional peculiarities, by which some could not withstand the effects

of purgative medicines so well. This, among my class of patients, was highly inconvenient, as their work was often interfered with. On the other hand, I found the same cases after the exhibition of a stimulant progressed more favorably, the bowels resuming their action after the spasm subsided.

Aloes, although successful, were not so speedy with me in giving relief; therefore I abandoned them in these ordinary cases for ammonia, in which I find an agent of the greatest possible use.

Mr. Greaves's case of the five-year-old cart-horse is an example of such as now and then occur, in which medicine may be administered wholesale without producing the desired effect.

With regard to linseed oil, I certainly do not possess any predilection for it. If purgatives are indicated from the evident constipation or impaction of the bowels—the animal having either had access to a wheat or barley heap, or his voracious propensities not having allowed of perfect mastication or insalivation of the food—then I would give aloes, accompanied with enemata, with a view of guarding, if possible, against that sad event—rupture.

I have noticed, in animals dying from rupture of the stomach, that the small intestines, generally empty, exhibit signs of inflammation. Now, for my part, I should consider this to be due to the excited action of the muscular fibres consequent upon the over-distended stomach—a sympathetic action to assist, as it were, in disgorgement from that organ. Previous to death in such cases we have frequently urgent symptoms, the stomach giving way from internal pressure, but presenting no signs of inflammation, fermentation being always to be dreaded. It is here I give purgatives, such as aloes, mostly in solution, with croton, and in large doses; for if the first few hours are lost to the practitioner, either from rupture of the organ or by participation of the brain, death steps between him and his patient. It is reasonable to suppose that an overloaded organ will be impeded in its action; muscular fibre is weakened, and pressure from the organ itself limits the transmission of nervous stimulus. In all such cases, seen early, before the physical signs of inflammation are apparent, I have found the benefit of exhibiting the ammonia in combination with aloes.

Overloading the stomach with chaff, wheat, &c., is common amongst farm-horses. Here my success has been well repaid by the above treatment. Similar effects are also produced by the beans, &c., and hay or straw-chaff used for heavy dray-horses, all of which I treat as above.

There are cases also where the signs of inflammation are apparent. In these I have bled, blistered, and administered enemias, given opium, calomel, &c., and probably thought it a hard case when my patient has died, notwithstanding so much had been done for him. Where such evidences exist, I resort to aconite, the effects of which are not only "electrical," but "marvellous."

I believe Mr. Bond, of Buckingham, is able to furnish some valuable information as to the use of this agent in combination with Spts. Ammon. Aromat. I should feel glad if he would give, through your columns, an account of his mode of exhibiting it.

The conclusion I have arrived at in the treatment of colic is somewhat in accordance with the old adage, consisting—"not so much in *what* to give, but *when* to give it." I verily believe that slight cases are often protracted by the use of aloes, their exhibition not being necessary.

THE PAY AND POSITION OF THE INDIAN ARMY VETERINARY SURGEON.

By "ARGUS."

INDIA ; December 1, 1863.

I HAVE just read a letter in your pages from "An Indian Army Veterinary Surgeon," and agree with him completely in thinking that the profession at home should be made fully aware of the mistake it makes in supposing that we out here are well paid, and that India is a country for veterinary surgeons to make fortunes in. Your correspondent evidently belongs to one of the other presidencies, for his rates of pay and expenses are different from ours here; but we are nearly as badly off as he appears to be. I can give you the items of my expenditure for the last two years—no approximation, but the actual average *per mensem*—by which this statement would be made most clear. If I insert the particulars of one month it may prove useful in preventing young fellows from coming out here with high hopes, only to be disappointed.

I am a bachelor, and live a very quiet life; drink nothing except at dinner, and then only one bottle of beer, or a pint or pint and a half of daught beer—hence I cannot be called extravagant.

My expenses have been—

	£	s.	d.
Mess bill	13	6	0
Breakfast	1	14	0
House rent	3	10	0
Servants	5	8	0
Keep of two horses	1	4	0
Subscription to funds (compulsory)	1	4	0
	<hr/>		
Total	26	6	0
My pay, &c., has been—			
Pay and allowances	15	9	4
Horse allowance	6	0	0
House „	5	0	0
Palkee „	3	0	0
Extra batta	4	11	4
	<hr/>		
Total	34	0	8
Deduct expenses	26	6	0
	<hr/>		
Balance	7	14	8

Thus there remains a little over £7 a month to purchase clothes, uniform, horses, &c., &c., and to make a purse to pay one's passage home to England and out again (£300 at least), when the time comes round to take leave for a year or two. India is a vile hole to live in—a most trying climate for seven months of the year—no English places of amusement at any time—everything dull, dreary, and monotonous. There ought to be *some* inducement to make men spend twenty or thirty of the best years of their lives in it. At present there is *none* for *veterinary surgeons*.

Taking all things into consideration, the pay at home is *literally* better than out here; the position is unquestionably so, and an Englishman enjoys life there, instead of moping, vegetating, and cursing his fate, as in India. “Punch's” advice—I don't agree with him, though—to people about to marry, is about the best which can be given to any one thinking of coming to this country—“Don't.” Stay at home on £200 a year, rather than come out here on £500.

The “Warrant” is a dead letter in India. For three and a half years we have been waiting, waiting patiently for some improvement in our pay and position. We have been under the impression that “something was being done for us”—that “our case was under consideration.” *Now*, however, we are told by a very high authority out here that nothing has been done, nothing is being done, and nothing will be done, unless we make some stir ourselves. This suspense and disappointment is sickening.

Yours faithfully.

To the Editors of ‘The Veterinarian.’

Facts and Observations.

NEW MOTOR SYSTEM OF THE HEART.—Professor Von Bezold, of Jena, states that he has, in the course of some researches on the motions of the heart, discovered a new source of motor nerves of this organ, which connect it much more intimately and importantly than the cervical sympathetic, or even the par vagum, with the cerebro-spinal system. The experiment of poisoning various animals with woorara led him to the belief that the new central organ has its seat neither in the medulla oblongata nor in the brain. Further experiments, however, are necessary to develop the discovery.

OXYGEN GAS.—At a recent sitting of the Academy of Sciences of Munich, Baron Liebig made a very interesting communication relative to some experiments with a new apparatus—manufactured chiefly at the expense of the King of Bavaria—for detecting the existence and measuring the quantity of oxygen in various bodies. The experiments, Baron Liebig stated, had proved clearly that oxygen is not only evolved from the atmosphere by plants, but also in tolerably large quantities by decomposition of water in the bodies of flesh-eating animals. Baron Liebig thinks that the knowledge of this fact will throw quite a new light on the hitherto but imperfectly understood processes of nutrition and digestion.

PURE PEPSINE.—Pepsine may be precipitated from its solutions by agitation with cholesterine, with phosphate of lime, or even with animal charcoal. Dissolved in water containing phosphoric acid, it may be precipitated when we neutralize by lime-water; it is then contained in the precipitate of phosphate of lime without always being found in a state of combination. On these facts M. Brucke has founded a new process of procuring this important substance in a state of purity hitherto unknown, which has enabled him to correct a number of assertions respecting it to be found in treatises. The details of his process for obtaining it from the mucous membrane of the stomach of a pig will be found in a late number of the *Journal de Pharmacie*, where it is said that our notions respecting pepsine ought to be changed, and that its analysis is yet to be made.

RABIES IN BERLIN.—The Berlin police have published a statement in order to show the great efficacy which the plan of muzzling dogs exerts in the prevention of the spread of rabies. This plan was commenced being carried out at the end of 1853, since when the number of cases coming under the cognizance of the police has vastly diminished. Thus, in 1852, the number of cases of rabies reached 107, and in 1853, 94; while, since this latter year, they have occurred in the following numbers:—1854, 1; 1855, 3; 1856, none; 1857, 2; 1858-60, none; 1861, 5; 1862, 2; and 1863, 10. It is, however, to be feared that epidemic influences have been here, in some part, overlooked; for in the years 1846-51 there were nearly as few cases observed, although police interference did not then exist.—*Preuss. Med. Zeit.*, No. 48.

HYDROPHOBIA.—Mr. John Goggin, a confectioner, of Limerick, was, a few days ago, bitten by a pet monkey. The skin of his little finger only was slightly torn, and the wound seemed a mere scratch, and at first gave him no pain. He soon felt, however, a sort of irritation in his wrist. It gradually extended to the parts above the elbow, and they became swollen. Medical men were then called in, when it was discovered that the patient exhibited symptoms resembling those of hydrophobia. He died on Sunday, after suffering great pain. The monkey some time before had killed a cat and a dog.

CAVALRY HORSES OF THE FEDERAL ARMY.—General Halleck, in his report to the President on the military operations of 1863, calls attention to the waste and destruction of cavalry horses in the service. In the Army of the Potomac, he says, the cavalry men present for duty in the six months May to October, 1863, have averaged from 10,000 to 14,000; the issues of cavalry horses for the same period have amounted to no less than 35,078. Adding horses captured from the enemy and taken from the citizens, there has been an average remount every two months. There are, he says, now some 223 regiments of Federal cavalry, and at the same rate as the Army of the Potomac they will require the issue in the present year of 435,000 cavalry horses. General Halleck observes that some immediate and efficient remedy is required. He adds, "Probably the principal fault is in the treatment of their horses by the cavalry soldiers. Authority should therefore be given to dismount and transfer to the infantry service every man whose horse is, through his own

neglect or fault, rendered unfit for service. The same rule might be applied to cavalry officers who fail to maintain the efficiency of their regiments and companies. The vacancies thus created could be filled by corresponding transfers from the regular and volunteer infantry.”—*Times*.

AGE OF PIGS. WHAT CONSTITUTES A HOG.—The American Congress has decided that a pig becomes a hog at six months old, and slaughtered hogs are taxed, while pigs are not. In one of the districts of New York city 160,000 hogs were recently slaughtered in the space of two months. The assessors have no criterion by which to determine their ages, either by examining their teeth or measuring their tails, yet, in the performance of their duties, they are required to ascertain this fact. Congress will have to determine the criterion.—*American Paper*. [Congress will only have to adopt the principle of ascertaining the age of the pig as expounded in Professor Simonds’ work, to arrive at a correct decision on this matter.]

EFFECTS OF EATING MEASLY PORK AND SAUSAGES IN PRUSSIA.—If all the accounts which reach us be correct, there is an alarming prevalence of trichina disease in Prussia, in consequence of eating raw or badly cooked bacon and sausages. The last account we have seen is from Hettstädt, in the Government of Marseburg, which states that after a feast, at which fresh sausages formed a prominent dish, ninety persons became affected with trichina, of whom twenty soon died. The local governments of Cologne and Erfurt have issued proclamations on the subject, calling attention to the danger of eating this description of food.

SINGULAR ACCUMULATION OF FAT IN THE OMENTUM OF A SHEEP.—We were very recently afforded an opportunity of examining the carcass of a sheep, which had been fed with others for the butcher, in which all the fatty matter had been deposited in the omentum. The mass of adipose material here met with weighed no less than forty pounds *avoirdupois*, being nearly equal in weight to the entire carcass of the animal, which was thin and attenuated.

THE VETERINARIAN, FEBRUARY 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ELECTION OF EXAMINERS.

IF there be one privilege or right of more value than another to the profession, it is that of choosing its examiners. Take this from the body corporate, and the Charter of Incorporation becomes of little or no worth. It is true that the veterinary surgeon would still be entitled to the distinction of being a member of a legally recognised profession; this, however, could avail but little when, for all practical purposes, he is left without any means of supporting his claim to the title.

These things being so, how careful ought our representative Council to be in exercising the privilege aright. A false step may not merely lead to the loss of the *only* thing worth having, but bring public censure also to bear upon their indiscretion. Men are not to be selected as examiners simply because they are long-tried friends, or occupants of respectable or even elevated positions; but rather because they are appreciated for their scientific attainments, as well as for the efforts they have made to elevate the profession, and for the knowledge the public have of their names and their labours. It is for these reasons that we congratulate the profession on the result of the election at the last meeting of the Council. Vacancies had to be filled up, both in the medical and veterinary section of the Court, caused by the retirement of Mr. R. Quain and Mr. William Field; and it was not expecting too much that the Council should take especial care that the Court should not be weakened by the retirement of two such efficient members. As will be seen by the report of the proceedings of the meeting, Professor Ellis, of University College, takes the place of Mr. Quain, and Professor Morton

that of Mr. Field. Thus our readers will see that, as Editors of this Journal, we have a direct personal interest in the decision, and therefore it may be thought we are scarcely in the right position to criticise it. But we would ask, must our comments as Editors be necessarily partial and unjust because the act affects one of us in his official relationship to the other? Cannot one speak independently of the other? Or must it be always inferred that what is written is by the mutual consent and approval of the "*Editorial we?*" Journalism, as conducted in this country, would give a negative reply to the first and last of these queries, and an equally emphatic affirmative to the second. Were it otherwise, freedom of thought and independency of action would be stifled, and our Journal, like others so cramped, soon cease to be. Throughout our career as Editors we have been zealous for this independency, and it is this which has contributed to make our Journal what it is, and given it a vital strength of which we may be justly proud.

Much has been said against teachers being examiners; but we hesitate not to affirm that of all men they are the most efficient. In what did the strength of the Board of Examiners attached to the Royal Veterinary College prior to the obtainment of the Charter consist? Why, in the fact that it was composed of teachers; and be it remembered, its decisions will bear the closest comparison with those arrived at by the Board which succeeded it under the provisions of the Charter. Let us not, however, be misunderstood; we are not advocating the system of a teacher deciding upon the merits of his *own pupil* by his vote. No; but rather contending that his being a teacher eminently fits him for being an examiner. Unless men can examine on the *intricate details* of any given subject, they are not qualified to sit in judgment on the knowledge of another. Inquiries into scientific acquirements do not consist of a fitful and capricious jumping from subject to subject, merely because the inquirer does not get from the inquired the exact reply he had expected. We have seen these things, and deeply regretted them. It is a system which has often led to the

rejection of a good pupil; nay, even worse than that, it has more often admitted a bad one.

A retired teacher of our science, the first of his line, and the author of one of the best works we possess on Veterinary Materia Medica and Pharmacy, now takes his place as an examiner. Strength is thus given to the Board, and a further guarantee afforded to the profession and the public that justice will be done. We will venture to say that had our colleague devoted his talents to the practice merely of the profession, he would never have taken office as an examiner; but having been a teacher, he has not hesitated to accept the honour conferred upon him.

And now one word for the other newly elected member of the Court. He also is a teacher, but in a higher division of medical science, being Professor of Anatomy to University College. Mr. Ellis is too well known to need any eulogisms from our pen; his name will give weight to the diploma, while it will tend also to strengthen the union existing between medical and veterinary science. Heartily, then, do we congratulate the profession on these results of the deliberations of its representative Council.

Extracts from British and Foreign Journals.

PLEURO-PNEUMONIA AND INOCULATION.

THE prevalence of pleuro-pneumonia in the Australian colonies having induced the respective governments to adopt means for the prevention and eradication of the disease, it is instructive to know what has been the results of the means adopted. The slaughtering of cattle affected, and the placing of all animals in those districts where the disease was known to exist under the operation of quarantine regulations, were the first measures adopted. It was generally believed that such stringent means would speedily overcome the disease. It appears, however, that the failure was not only signal, but complete. In the colony of Victoria the sum voted by the Legislative Assembly for carrying out the provisions of the Act was speedily exhausted; and apparently nothing further resulted from these operations under the Act than to furnish evidence that the area of the disease spread rapidly, notwithstanding the

repressive measures adopted; and the Commissioners, as they acquired further means of observing the disease, were not agreed as to the contagious or non-contagious character of the malady.

In the adjoining colonies stringent measures were also adopted, but these failed to combat the malady. In August, 1862, the alarm caused in the colony of New South Wales by the sudden appearance of the disease in various districts induced the Legislative Assembly to appoint a Commission to consider and report upon the circumstances connected with the slaughter of cattle by the authority of the Government, under the Cattle Disease Prevention Act. The Commission not only considered the subject in relation to the compensation to be paid for cattle slaughtered, but extended the inquiry so as to embrace the operations of remedial measures which had been adopted by several owners of stock, especially as to the effects of inoculation. We gave in a previous article on this subject a digest of a portion of the evidence taken by the Commissioners in relation to the effects of inoculation, as it had appeared in the *Victorian Farmers' Journal*, and we continue to glean from the same source the principal points brought out in the report. The report concludes with the following most contradictory statements:

“Your Committee cannot conclude their report without some reference to inoculation; and from the evidence which has been given by Messrs. Pottie and Bruce, and several other parties who have tried it, apparently with great success in both diseased and sound cattle, it appears to your Committee that if it is judiciously performed at an early stage of the disease, there will be no necessity in future to resort to the destruction of infected cattle, unless they are attacked very severely; and they strongly recommend, as a preventive, that the increase should be inoculated while young. But sufficient time has not elapsed since the operations were performed to test their efficiency, so as to warrant your Committee in giving a decided expression of opinion whether inoculation can be considered as a cure or preventive, or both.”

The concluding paragraph of this report is most significant, and may be taken as conclusive evidence that the Commissioners did not attach much importance to inoculation, either as a cure or a preventive; for although it is strongly recommended “as a preventive” by the Commissioners, yet in the next sentence it is stated that “sufficient time has not elapsed since the operations were performed to test their efficacy.”

In connection with the conclusion of the report, it is

necessary to inquire into the trustworthiness of the evidence given by Messrs. Pottie and Bruce. Mr. Pottie, it is stated, is a veterinary surgeon who, being appointed by the Government to accompany the Commissioners in their tour of inspection through the infected districts, and to report upon the disease, has good opportunities for gathering the opinions of the owners of animals affected regarding the disease. He states that in all cases he had advised owners to kill those cattle which were affected, and to inoculate all those that by any chance came in contact with cattle which were diseased. He states that where he had opportunities of close observation, the results of inoculation were most satisfactory. Only a few cattle had died from the effect of what he terms the natural disease—pleuro-pneumonia—since they were inoculated, but some had died from inoculation, which he terms the artificial disease. The antecedents of this veterinary surgeon were thus brought out by the Committee during his examination. His experience of the disease in Scotland from the years 1855 to 1859 was very extensive, owing, he stated, to the disease being very virulent in Scotland during that period. In referring to the register of the members of the veterinary profession graduates of the Edinburgh Veterinary College, the name of John Pottie, Australia, appears as having graduated in the year 1858. It is therefore to be inferred that the knowledge acquired in Scotland was the result rather of observing the practice of Professor Dick than putting into practical use the knowledge acquired in the lecture and dissecting halls and the visiting peregrinations of students with the principal of the college or with his highly esteemed assistant, the late John Barlow.

He states that the disease was much more virulent in the Scotch dairies' cattle than in the colony among bush cattle. The external symptoms were very much alike, but in the Scotch dairy stock the digestive organs were deranged, while from *post-mortem* examination of bush cattle it did not appear that such derangement existed. This statement may be taken as confirmatory of two deductions—either the examinations were not carefully made, or that the bush cattle examined had not died of pleuro-pneumonia.

Mr. Pottie considers the disease to be infectious and contagious, it being capable of propagation through the air, and he states—

“I believe it is contagious, and this, I think, is proved by the fact, that by inoculation we can produce an artificial disease by means of the virus taken from a diseased animal. We cannot, so far as our experiments have been made, pro-

duce lung disease by inoculating another part of the animal, but we can produce a disease similar in its character, in another part of the animal, to that which we find produced naturally in the lungs."

It is curious to read the reasons adduced as proof that the disease is contagious. If inoculation of a herd of cattle had been attempted with *the parts of the lungs* obtained from animals in a very healthy state, would the same inflammatory condition of the parts not have been induced, with the other collateral symptoms which follow inoculation, with the matter from the lungs of an animal affected with pleuro-pneumonia? If so, what becomes of the inference that pleuro-pneumonia can be propagated by inoculation? Mr. Pottie considers it both a preventive and curative; but to be effective when the animal is in a bad state, inoculation must be performed severely and in vital parts. He had operated upon seventy-seven cattle, which he had seen several times and could speak positively of. The following extract gives the details of his method of executing the operation of inoculation:

"We inoculated the greater number in the tail; we made a slit in the tail, put in a small piece of diseased lung, and rolled a worsted thread about it. In the course of five days the majority of these showed febrile symptoms—saliva flowing from the mouth, dull, hanging head, and so on. In the course of four days the tail was perceptibly swollen; this swelling would sometimes continue in the majority of cases till the seventeenth day, and in those that went on favorably after that time the swelling would begin to abate. Those that did not get on favorably would be longer; some would be six weeks or two months before they got better. In the latter cases the tail was more swollen, and the swelling extended up the tail. Others we inoculated in the forearm; we took a piece of tow and saturated it in the matter obtained from the diseased lung." In reply to the question, "In what part did you insert it?" this witness stated, "In the muscle of the forearm, in the anterior part; I inserted the tow deep in the muscle. I had a conversation with Mr. M'Laurin about this mode of inoculation, and he told me the result in the case of some cattle he had experimented upon; and I reasoned in my own mind that the tail was not the most suitable place, for there was no muscle to form a suppurating cyst, so as to throw off any excess of virus, or any quantity of deleterious matter that might collect there—that part of the tail near the point being composed principally of skin, blood-vessels, nerves, and bones. The lung was put into a dish and squeezed

from above until the fluid was obtained from it; into this the tow was dipped, and the tow was then inserted deep into the muscle. All those cases where inoculation was performed in the forearm went on favorably, the wound suppurated, and cast off the tow and the excess of virus, and ended favorably. Those that were inoculated in the tail were weak in the lumbar region, and had to be assisted to rise; none that were inoculated in the forearm suffered in that way. In three of those cases that were inoculated in the tail the tail swelled, and the swelling extended up the tail to the buttock, and as far forward as the hip-joint; and the tail became stiff, and stood up horizontally. In two instances the rectum was closed up and the urethra stopped, and no urine or fæces passed. One of these I killed, and I have a piece of the lung here with me. I attribute the rising of the inoculation up the tail to the want of a healthy suppurating cyst, because inoculation proves this to be a disease of the aureolar tissue of the body; and it is a law with respect to this tissue, that suppuration never takes place in it unless there is great exposure to the air. Unless the air gets into the part, induration follows; and the cells being stored with lymph and cellular fluid, these become indurated as hard as this table, and very thick."

This method of inoculating cattle appears to be an awkward mode of inserting a rowel, which is often practised in this country on calves, from a belief that a rowel tends to prevent the disease sometimes termed quarter-ill. It is certainly surprising that it had not occurred to the operator, Mr. Pottie, that the insertion of a rowel in the dewlap would most probably prove equally effective, both as a preventive and a curative of pleuro-pneumonia, as the use of any matter obtained from the lungs of diseased animals.—*North British Agriculturist*.

CARBOLIC ACID AND M'DOUGALL'S DISINFECTANT PREPARATIONS.

CARBOLIC or phenic acid is one of the most recent and useful additions to veterinary medicine; it closely resembles creasote in its properties and uses, and is one of the many interesting products of late years obtained from coal-tar. In an impure state, it is a black, oily, treacle-like liquid, with a disagreeable smoky taste and smell. When purified, it is an oily and nearly colourless fluid, neutral to test-paper, and of the specific gravity 1062. When deprived of its water, care-

fully distilled, and exposed to a gradually lowered temperature, it occurs in colourless needle-like crystals. In its several forms it exhibits a smoky, creasote flavour and a warm, burning taste, is sparingly soluble in water, but readily dissolves in alcohol, ether, and strong acetic acid. It consists of $C_{12}H_5O + HO$. It is the principal constituent of M'Dougall's disinfecting powder, which conjoins the antiseptic and deodorizing virtues of carbolic and sulphurous acids; and of Mr. M'Dougall's disinfecting fluid, which is made with carbolic acid and lime water. In medicinal and surgical, as well as for sanitary purposes, these and several others of Mr. M'Dougall's preparations are often conveniently substituted for the pure carbolic acid.

Carbolic acid is a sedative, anodyne, and astringent, and an antiseptic, deodorizer, and disinfectant.

Like creasote, it acts in large doses as a narcotico-irritant poison, and appears to destroy life by interfering with the actions of the heart. In the human subject, in doses of three minims, it has proved very serviceable in checking obstinate vomiting, indigestion with flatulence, and diarrhœa, especially when depending upon bad drainage or noxious effluvia. It is found very serviceable in protracted cases of diarrhœa amongst cattle and sheep; and it will doubtless soon be more generally used for allaying stomachic irritation and vomiting in dogs. It is an admirable dressing for unhealthy wounds and indolent ulcers, for foul in the feet of cattle and foot-rot in sheep, promptly lessening irritability, improving the tone and condition of the adjoining healthy textures, and at once destroying all smell. A diluted solution, containing half a drachm of acid to a pint of water, forms a good wash for the mouth, feet, and udder of animals affected with apthous epizootic. It speedily removes the itching of skin diseases, and is especially adapted for the treatment of eczema, grease, mange, and scab. In the form of M'Dougall's sheep-dipping composition, it has been favorably reported on by the Australian Government Commissioners appointed to investigate the spread and cure of scab in that colony. The Commissioners state that it has proved very successful, perfectly restoring the diseased skin to a healthy state, and causing the growth of wool on the parts previously scabbed. Carbolic acid is likewise the principal active constituent of M'Dougall's "dipping composition" for sheep and lambs, possessing the several advantages of freedom from poisonous properties, readily destroying ticks, and preventing for a considerable period the attack of flies. Similar solutions prove serviceable in all animals for the destruction of lice and fleas.

Carbolic acid prevents oxidation, and coagulates albuminous matters, and is hence a most valuable antiseptic. A few drops mixed with fresh urine prevents its undergoing any change for several months; meat washed with a weak solution keeps unchanged for weeks; whilst skins, solutions of gelatine, starch, size, and other such substances prone to decay, are readily preserved when moistened with it. A minute quantity mixed with recent manure prevents or arrests putrefaction, obviates all smell, and, by retaining and permanently fixing the ammonia and other volatile matters, it greatly enhances the value of the manure so treated. For most of these purposes M'Dougall's disinfecting powder and fluid are now largely used, and especially for the healthful purification of stables, cow-houses, piggeries, and poultry-pens. In some of the extensive omnibus and carrying establishments of London, Manchester, and other large towns, it is employed daily at an annual cost of 5s. for each horse. It is also employed for the cleaning and purifying of railway horse-boxes and cattle-trucks; and for these and similar uses its cheapness and efficacy recommend its more general adoption.

As an internal remedy, pure carbolic acid, in the form either of the clear fluid or the crystallized solid, is preferable. For horses and cattle the dose varies from ℥xv to ℥xl, for sheep from ℥v to ℥viii, and for dogs ℥j to ℥ij. Where the crystallized form is used, grains instead of minims will be given. It is conveniently administered either in a bolus with linseed meal or dissolved in a little diluted spirit. Where there is extreme irritability of the bowels, carbolic acid may be conjoined with half a dose of laudanum, or a little chalk, carbonate of soda, or other antacid. As a dressing for wounds, a solution may be made with one part of the acid and from fifty to eighty parts of water; a few drops may be added to the sugar of lead or other healing lotion, or mixed with oxide of zinc or such other astringent ointment. Mr. M'Dougall's fluid, foot-rot ointment, and other preparations, are well adapted for the purposes for which they are intended.—*North British Agriculturist*.

CATTLE DISEASE IN INDIA.

SIR,—In the impression of the *Madras Daily News*, of 7th November, under the heading of “The Week,” I observed a long paragraph wherein is mentioned that Mr. Minchin, the Collector of Kurnool, had brought to the notice of Government the ravages among the cattle in his district from an enzootic disease, where the symptoms were violent purging, body covered with pustules, desquamation of hair, cuticle, &c.

This gentleman, like all others who are ignorant of the nature of the malady, fancies it to be “the same disease to cattle that smallpox is to man,” forgetting to start with the fact that smallpox, when passed through the bovine animal, is a harmless disease—so much so, that it frequently passes off without affecting rumination, one of the first symptoms of derangement in cattle; and next (I quote from the paper) he says, “among cattle it is highly infectious and contagious,” but he has not heard of its being either the one or the other between cattle and human beings. Now, cow-pox, as the illustrious Jenner first observed it on the hands of dairy maids, *is* communicable to the human species: *ergo*, Where is the resemblance?

I find the collector encloses a letter from Captain Nelson, “in which that officer observes that, in this country, however seriously a murrain may show itself, nothing is done—the people do nothing, the Government does nothing.” He goes on to show how the Home Government, two years ago, when the flocks of Wilts and Berkshire were attacked with smallpox, appointed a commission to inquire into and prevent the extension of the disease. True, but did the Home Government form their commission from medical, revenue, and commissariat officers, as the Revenue Board wisely recommends, or did they seek assistance from a proper source, viz., from the Royal Agricultural Society of England, who furnished their Professor of Cattle Pathology from the Royal Veterinary College?

I do not wish to throw cold water on the exertions of Mr. Minchin; but how, I ask, can a true diagnosis be arrived at by persons who have not been specially educated for the treatment of cattle, much more to treat the disease, supposing their diagnosis to be right? One might as well hand one’s watch over to a blacksmith to repair, or call in a “cow leech” to treat his wife or child. The board, in acknowledging these letters from Mr. Minchin (wherein he shows a reduction of *half* the cattle in the herds in the districts

affected with the disease), seem to be fully alive to the importance of doing something, but they "do not feel that the matter is yet ripe for action." I am not a little surprised to find Government have taken a similar view of the matter, by handing it over to the Principal Inspector General of the Medical Department. This is quite as farcical as a letter I read a few months back in the *Veterinarian*, where an unfortunate gives an account of an examination he had to undergo, shortly after his arrival in the country, to *test his professional attainments*, before he was given an independent charge. The examining board consisted of a superintending surgeon, a garrison surgeon, a surgeon from a regiment in cantonment, and *one* veterinary surgeon. Some absurd questions were asked by one member of the faculty, while the others remonstrated among themselves on the absurdity of the thing.

I am pretty confident the Principal Inspector General would rather be left alone to his own legitimate work than to be troubled with what he knows nothing about, unless he is like a certain little minister at home, who, *Punch* says, has brass enough to take charge of the Channel fleet. Now, if we are to improve the agricultural status of the natives, as I see, by a late impression of your paper, His Excellency the Governor, in his published minute, is anxious to bring about, pray let us begin, if we wish to secure good faith and confidence among them. There are, I think, ten veterinary surgeons in this presidency, all of whom must have served an apprenticeship to a practitioner at home, where he must, in a great agricultural country like England, have seen some cattle practice, besides, at least, two or three sessions of lectures and practice at College under the ablest cattle pathologist in Europe, whose services the Continental Governments have more than once engaged to co-operate in scientific inquiries, when murrain, rhinderpest, and other epizootics, were devastating Europe. Trusting you will pardon the length of this letter, and support me in urging the necessity of a head to the veterinary medical profession, as is the case in Bombay and Calcutta, to whom those Governments, I think, would have applied if similarly situated; also please remind Mr. Minchin if he wants assistance and advice, he had better apply to Government for the temporary services of a

VETERINARY SURGEON.

To the Editor of the Madras Times.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Journal des Vétérinaires du Midi, Oct., 1863.

DISCUSSION ON VIVISECTION IN THE ACADEMY OF MEDICINE.

THE question of vivisection has during the last month been the subject of discussion at the Imperial Academy of Medicine, which has had considerable publicity (*retentissement*), and the conclusion of which might be considered as a new victory obtained by common sense and science.

The origin of this discussion was the steps taken by the London Society for the Prevention of Cruelty to Animals, a committee of which had an interview with the Emperor of the French about two and a half years ago. But the form in which the complaint was made compromised the cause it was intended to serve. The Government, however, before answering the grievance expressed by the committee to the Emperor, officially enjoined the Academy to answer the following questions:—1st. Are there any foundations for the complaints made by the Preventive Society concerning the practice of vivisection in France? 2nd. Is there any occasion to take them into consideration? 3rd. Is anything to be done; and if so, by what measures?

The committee counted amongst its members MM. Claquet, Cruveilhier, Robin, Claude Bernard, Renault, Leblanc, &c., five members out of the nine belonging to the *Société protectrice des Animaux* of Paris.

They undertook to show that the vivisections, as practised in our schools, are not inhuman and abominable; nor are they those monstrous cruelties, the shame of civilization and an outrage to nature and God, they had been stated to be. The assertion that in France these vivisections are prolonged to satisfy a vitiated pleasure has been strongly repudiated, as, far from purposely prolonging the sufferings of the animals, it is customary to render these sufferings as short as possible, or to mitigate them by the use of chloroform, ether, narcotics, cold, &c.

M. Moquin-Tandon, the reporter of the commission, having died suddenly, M. Robin was charged with the reading of this report, of which the conclusions are as follows:—

Vivisections are indispensable to the progress of physiology, and the operations on living animals are necessary for the study of veterinary operative surgery.

They ought, however, to be practised with greater reservation, and, above all, care should be taken so as to avoid giving to them the appearance of cruelty.

Real progress should always be the object of the experimenter.

Students should not be allowed to make experiments, except in the schools and under the direction of the professors.

The experimentors should use all the means at their disposal indicated by science to lessen the sufferings of the animals submitted to the experiments.

M. Dubois, the perpetual secretary, objected that the conclusions were not direct answers to the categorical questions of the authorities; and having combated them in the committee, he now opposed them in the Academy, and proposed to substitute for them the following:

1st. That the Academy, without considering the injurious form of the documents which have been submitted to it, recognises that abuses have crept into the practice of vivisection.

2nd. That to prevent these abuses, the Academy should express its wish that in future vivisections should be reserved exclusively for the discovery of new facts or the verification of doubtful ones; and that consequently they should be no longer practised, either in public or private courses of instruction to demonstrate facts already definitely acquired by science.

3rd. That the Academy likewise expresses its wish that the students of veterinary medicine do in future practise their operations on dead bodies, and shall be no longer obliged to learn the operations on the living horse.

After M. Dubois, the tribune was occupied by M. Parchappe, who, in a speech which was often interrupted by applause, repelled the charges that had been made against the faculty of French medicine, to which no one had acquired a right to teach humanity, since this had been advocated by it on more than one occasion. The speaker afterwards showed that since the introduction of vivisections science had advanced with rapid strides, and he was astonished that the attacks against that mode of investigation came actually from the country of Harvey and Charles Bell, who were indebted to experiments on animals for the greatest modern discoveries. Concerning the abuses of vivisections, M. Parchappe said, in conclusion, that no one could approve of them, but he had not the slightest doubt that, in order to lessen, repress, or even suppress them, it was by no means necessary to resort to public authority.

Against abuses, which are of a nature to offend public order and morals, the intervention of authority armed with the law which is an honour to the name of Gravimant, in every instance amply suffices. As to the abuses of the laboratories and amphitheatres devoted to science, public opinion, controlled by the judgment of the authorities of the Academy, the professors, the Nestors of the faculty of medicine, and, the directors of the schools, would in all cases ensure a prompt and easy repression.

At the next sitting the subject of vivisection was successfully defended by M. J. Béclard, who showed how illusory it was to propose to restrict the experiments instituted for the discovery of new facts exclusively, as many discoveries have been the result of simple verifications of known facts; by M. Piorry, who had no trouble in demonstrating the necessity of experimentation in medicine; and finally by M. Bouley, who specially undertook the defence of the operative surgical instructions at the veterinary schools, these having been more particularly attacked by the adversaries of vivisection. He insisted on the necessity of the practice of these operations, in order to familiarise the veterinary pupils with the dangers of the resistance of the horse. M. Jules Béclard had in his speech made a reserve at this part, and condemned the operations being made on living animals, as practiced in our schools, by drawing attention to an abuse which had been reported of allowing the animals subjected to them to starve, from motives of economy.

It was not difficult for M. Reynal, who took the parole at the next sitting, to answer this gratuitous assertion, which, indeed, refutes itself by the impossibility of the administration of the schools preserving the animals if they were not properly fed. But in this sitting the vivisections were ably advocated by M. Bouvier, who, far from condemning the practice of operating on live animals, as practised in the veterinary schools, showed the advantage surgeons would derive from familiarising themselves with the performance of these operations. MM. Vernois and Gosselin, taking the parole in their turn, showed the necessity of the Academy formally repelling, by a decided motion, the accusations made by mistaken philanthropy. The Academy, adopting that opinion, decided unanimously on the following answer to the Government:—The Academy declares that the complaints made by the London Society for the Prevention of Cruelty to Animals have no just grounds, and that they ought not to be taken into account. Further, that it is expedient to leave as heretofore the vivisections and the surgical operations, as practised at the veterinary schools, to the wisdom of men of science.

It is to be hoped that this answer, the only one that could be dictated by reason, will not in the least lessen those sentiments of humanity which never ought to be departed from by those who, for a superior object, are under the painful necessity of inflicting sufferings on beings who are, like ourselves, endowed with sensations; and that humanity will lose nothing by being left to the safeguard of the consciences of men, whose only object is the acquirement of knowledge, in preference to legal enactments, of which no one could guarantee the complete execution.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

[OFFICIAL REPORT.]

THE first meeting of the above society was held on Friday, the 15th of January, 1864, at the "Crown and Thistle" Hotel, Newcastle-upon-Tyne, and was well attended. In addition to the previous list of members, Mr. John Fairbairn, Alnwick; Mr. W. S. Moore, Gateshead; and Mr. Thomas Coates, Brampton, Cumberland, were admitted.

The manner in which the proposal to form such a desirable society in the north of England has been received is very gratifying to the promoters, particularly in this instance, as it is evident that elements not only exist, but are available, for the establishment of an extensive and influential association, the tendency of which must be that of mutual good.

The usual business preliminaries having been arranged, the President, Mr. C. Hunting, proceeded to deliver the following address:

Gentlemen,—In taking a retrospective glance at our profession, there are many things upon which we are justly entitled to congratulate ourselves, but there are still some which we must regard as blots and stains upon our escutcheon. Our object, therefore, as professional men, should be to multiply as much as possible the former, and radically root up the latter.

I am not one of those who take a desponding view of the veterinary profession. That we do not stand so high in the estimation of the public as we have a right to expect, I am quite willing to acknowledge; but the fault is principally owing to us *as individuals*, and not as *members* of the profession; for although the profession does not prevent a gentleman from being received as one, yet, unlike either the clerical, legal, and medical, it does not give him a *status* in society, unless he individually, by his private and pro-

fessional conduct, deserves it. It is therefore the bounden duty of all members of the profession, who have the well-being of veterinary science at heart, to do all in their power as individuals to raise the profession to the position she has a right to occupy. This can only be done by showing to the public that we are really what we claim to be—thoroughly scientific men, willing and able to keep pace with all collateral branches of science with which our profession is so intimately connected. This alone will enable us to prove the worth of an educated veterinary surgeon over the farrier or the charlatan, who only excels him by the larger number of animals he kills.

It is the idle drones in the profession who flatter themselves that, because they have managed to obtain the diploma of the Royal College of Veterinary Surgeons, its possession alone will induce the public to entrust the treatment of valuable horses and cattle to their keeping, in preference to a non-graduated man. Woefully do they find out their error in practice, and cry aloud “empiricism! empiricism is our ruin!” Yes, empiricism is their ruin, and will always be so unless they prove their superiority by practical results. This is only to be done by those who love their profession and possess great energy of mind, coupled with constant perseverance and an invincible determination to succeed. With these essential requisites to success, in every profession—in none more than our own—the empiric cannot continue to compete in the race with the well-trained understanding of the educated veterinarian, any more than the unlettered serf of Russia can do with the free and well-trained mind of the English mechanic, in producing those wonderful pieces of mechanism which we see daily brought into operation in commercial and agricultural pursuits.

There are *three* important matters connected with our profession which I shall briefly bring before your notice. The *first* is the great need of a higher standard of education in the majority of its members.

No one knows so well the immense disadvantage—I had almost said the *irreparable* disadvantage—which the uneducated or indifferently educated veterinarian labours under in almost every step he takes, as the man who unfortunately experiences the want of education himself. However laborious, however energetic, however persevering he may be, he thoroughly understands how impossible it is for him to bring before his view all the bearings of a case, so as to reason accurately and logically upon it, and at once deduce sound data upon which to act, either in the same way or to the same advantage, as the well-educated man. If this be so,

why do we not have an educational test before entering our veterinary schools? It is not only necessary if we wish to raise the *status* of the profession, but absolutely essential for the protection and requirements of the public. I know it has been said by some, that such a proceeding would close the door of the profession to many valuable men. I do not, however, believe that it would have such an effect. The sons of the members of the profession; the young but thinking farmer; or even the intelligent groom, who might be anxious to enter our ranks, instead of being daunted by such an examination, would apply themselves in good earnest to obtain the required information, and thus be enabled to pass the ordeal which would conduct them into a noble and rising profession. Doubtless, a few who are now members of the profession would not have been so had such a test been imposed—a circumstance which would have added greatly to the respectability of the corporate body as a whole, and as well as to their own ease and comfort, and much also to the advantage of a confiding public.

Secondly, a much longer and more extensive *curriculum* of college tuition—not less than three full sessions—with the addition of botany to the other classes, is required.

Thirdly, the necessity of a greater unanimity among the corporate body is needed, by which we should, acting in earnest and in concert, be enabled to induce the professors at our several veterinary schools to acquiesce in such measures as are here suggested. I know of no step which is so likely to bring about this desirable consummation as the inauguration of veterinary medical associations in all our large provincial towns, as we have this day done in Newcastle-upon-Tyne, as will be done next week in Leeds, and has long since been in Glasgow.

Amongst the foremost objects of provincial veterinary medical associations is unquestionably the investigation of *epizootic* and *enzootic* diseases, not only with a view to the adoption of the best modes of treatment to combat their effects, but more particularly to the employment of the necessary means for the prevention of their spreading and reappearance; or, when this is impossible, the adoption of such measures as shall reduce their fatality or deteriorating consequences to the minimum point. Surely the most efficient way of obtaining such desirable results is to be found in freely discussing the general as well as the particular characters of the maladies themselves by a number of professional men engaged in the study of such diseases, and who possess the opportunity of doing this in many and widely separated districts, where each of these affections may assume a modi-

fied form or character. No true and earnest worker, be his field of labour ever so limited, can fail in making a certain amount of progress; but if he has not the power, or the opportunity of comparing the results with those obtained by others, and of thus extending, as it were, the scope of his observations, he must labour at a great disadvantage, and incur the risk of constantly being in error, or at best, he is only compensated for loss in general range by what he gains in some special department.

Again, another important, I had almost said an unlimited, subject for our investigation and discussion is the hygiene of domesticated animals. It is one which will well repay all who have the opportunity, and are willing to labour for the benefit of others and for the advancement of our knowledge of so important a branch of science, inseparably connected, as it is, with veterinary practice. For my own part, I must confess that I consider the study of hygiene to be of far more importance to the veterinary surgeon than the study of therapeutics, for surely there is much more true philosophy and more noble scientific research in the prevention of disease than in the cure of it. I do not hesitate to assert that three-fourths of the diseases of the lower animals arise from an insufficient attention to the laws of hygiene. Surely at the present day, when agriculture is making such mighty strides—when the largest portion of our farmers are beginning to read and think and reason for themselves upon the everyday facts brought before their notice—when shrewd and clever business men, bent on money-making, are concocting “concentrated aliments,” “condimental foods,” and “nutritious cakes,” made with one half bran—bought at £5 and sold at £10—and when the Hassels, Normandys, Warringtons, and Thompsons, are detecting the adulterations and exposing the impositions of the vendors of the food of man, it is not for us to allow men out of our profession to detect the adulterations and impositions of the vendors of the food of quadrupeds. No; this should be the province of the veterinary profession. If she delegate the most important scientific part of her duty to men out of her pale, what right have we—her votaries—to complain if the public judge us according to our fruits? Again, when the professional veterinarian meets with the well-educated farmer or proprietor of large numbers of animals, who has studied Comb, Carpenter, Liebig, Johnstone, and Voelcker, and filled his well-trained mind with useful information, what opinion would he, nay, must he form, when he found that many among us scarcely took sufficient interest in reading even to read our own monthly

periodicals, much less to study the subjects upon which the authors mentioned had written? I apprehend that such a man as I have just sketched—and there is many a one to be found amongst the veterinary surgeon's best customers—would not be long in forming his opinion as to how far such persons were entitled to rank with the educated and scientific of other professions.

There is nothing more obnoxious to a well-educated, common-sensed Englishman than a counterfeit, and there is no greater counterfeit than the veterinarian who imagines that, because he has spent two sessions at one of our colleges and taken his diploma, he needs no more study—that he has learned all that is necessary. Be it remembered that when we leave our *alma mater*, even the best amongst us have only laid a solid foundation upon which to raise a useful superstructure, whose adornments should be microscopical investigations, agricultural chemistry, chemical analysis, botany, geology, meteorology, &c. &c., for without a general knowledge of such things we must be content to be placed out of the pale of scientific men.

Another important subject for associations such as we have this day commenced should be to investigate the laws of breeding in all our domesticated animals, especially the horse and ox. No one has the ear of the breeder of animals so much as the veterinary surgeon, and, as a rule, his advice is asked and acted upon where he holds the position he ought amongst his employers, for no one has the same opportunity of observation as the veterinarian. On such a subject as this he ought ever to be noting down useful facts, reasoning upon them, and deducing therefrom lessons of importance to the agriculturist, and through him to the whole nation.

I know that in the south-east part of Durham, a few years ago, nineteen-twentieths of the breeders of horses were carrying out the most absurd system imaginable. The following question has been frequently put to me—“Do you know any one who has an old mare done work, that I could buy cheap to breed a foal from?” Or another inquirer, who has a wretchedly ill-shapen, worn out mare, eighteen to twenty years of age, affected with spavins, side-bones, thin walls, and flat feet, besides being long-coupled and narrow-chested, will ask, “what horse he had better put the old mare to, for she is worth nothing more than to breed a foal from?” If you tell such a man that the most economical plan is to shoot the old mare, and if he wish to breed, to do so from his prime, strong, well-made young mare, he will at first shrug his shoulders and say he cannot afford it—“the young

mare must work, and the old one cannot." But when you reason with him and show him that the old mare will cost as much or more to keep than the young one; that the foal of the latter will in all probability be worth treble that of the former; that while the defects of the old mare will certainly descend to her foal, causing great difficulty of sale, even at a low price; and that the offspring of the young mare, being free from such defects, will not only sell at a good price, but that dealers and others will soon find out where the breeders of such horses are, and will be always ready to take them for sale, even above the ordinary market value, he will thank you for your advice and adopt it.

I shall not occupy your time further on the subject of breeding, but I feel certain that the members of the veterinary profession would do well if they took a greater interest in the breeding and rearing of agricultural live stock than they do. It is by giving our customers, even gratuitously, good, sound advice, arrived at only by years of observation and research, which will make them appreciate the educated and scientific man more than the man of mere routine.

Having now touched upon a few of the subjects which, in my humble opinion, should occupy part of the time at our quarterly meetings, I shall, in conclusion, briefly notice a few of the rocks and quicksands which our professional bark must be exceedingly careful to steer clear of, or she will inevitably go to pieces, and the compound body will rapidly assume its elementary forms.

The first in importance is, that no personal matter whatever should ever be allowed to enter into our discussions. There is, as we all know, a certain amount of clashing of interests between professional men of the same calling everywhere, and the veterinary profession is no exception to this rule; hence it should be thoroughly understood that the least allusion to anything of a personal nature would be considered as an insult to *all* the members of this association. If the Association is to go on and become of any use to us as professional men, we must firmly maintain this position, or, so to speak, rally round this point as one of honour, with all the tenacity which brave soldiers do to the standard of their regiment. I press this advice the more earnestly because I know this has been the rock upon which similar societies in the medical profession have foundered—societies with which I have been connected as an honorary member.

Another shoal which we should steer clear of is the rate of remuneration we receive for our services. This, in my

opinion, should be left an open question, for every man has a perfect right to put his value on his services. If one man thinks his services are not worth more than half that of his neighbour, by all means let him take the half, for the probability is, if he did not, he would think he was doing an act of dishonesty to his employer. Low-priced professional services are, as a rule, like nearly all other low-priced articles, thrown aside by all sensible men, as being by far the most expensive when tested and brought into use.

I will not, however, occupy any more of your time by further remarks of my own, more especially as I know there are some very interesting cases for discussion, and also morbid specimens for examination, which will doubtless interest you far more than anything which I may be able to bring before you in this address.

I must, however, before I conclude, award "honour to whom honour is due." It may not be known to all the members of this association that the sole merit of bringing together so many of us to-day, and the establishing of "The North of England Veterinary Medical Association," is entirely due to our worthy secretary. I confess that when the matter was first mentioned to me I did not hesitate to pronounce its failure, not because I could not see its value if properly carried out; but because I feared that the want of unanimity amongst the members of the profession in this district was not sufficiently felt. However, Mr. Armitage was nothing daunted by my faithlessness in his undertaking, and now I can say that no one is more delighted than myself to see his most sanguine expectations so fully realised.

The address was warmly received by the members. A vote of thanks to the President followed, which was cordially agreed to, and in reply further valuable remarks were elicited from him.

Mr. H. E. Wilkinson afterwards introduced to the notice of the meeting a very interesting specimen of a rare form of tuberculosis in the lungs and liver of a cow.

The first-named organs, when taken from the animal, were found to be of the enormous weight of seventy pounds. The structure was compact, the interlobular spaces being replaced by condensed tissue, finely studded with calcareous granules. A few collections of pus-like fluid also existed here and there.

What gave the case greater singularity was the fact that *half only of the right lung was pervious*, yet no symptoms of dyspnoea nor accelerated breathing were observed during life.

The prevailing indications of disease were those of a rheumatic affection terminating in paralysis.

The next meeting was fixed for the 15th of April, when Mr. Thompson promised to introduce a paper on tetanus.

(Signed)

GEORGE ARMITAGE.

WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

[OFFICIAL REPORT.]

THE Quarterly Meeting and Annual Dinner of the West of Scotland Veterinary Medical Association was held at the "Crow" Hotel, Glasgow, on the 30th December, 1863. Mr. Robinson, of Greenock, occupied the chair.

After some preliminary business, the election of office-bearers for the ensuing year was proceeded with, when the following gentlemen were elected:—Mr. Alexander Robinson, Greenock, *President*; Messrs. Dobie, Bbye, and Sharp, *Vice-Presidents*; Mr. Alexander Pottie, *Secretary*; Mr. Andrew Robb, *Treasurer*; and Messrs. Mitchell, Anderson, Wilson, Blackie, Cockburn, and Bryde, *Directors*.

The treasurer submitted the financial account, which showed the society's funds to be in a good state, no less than £28 being in the hands of the bankers. As there was not any immediate prospect of such a sum being required for ordinary disbursements, the annual subscriptions being more than sufficient to meet all claims, the secretary proposed that a portion of it should occasionally be applied for testing the value of certain medicines, or proving the truth or error of cures said to be effected, either surgically or otherwise. In the course of his remarks the secretary observed that agents which are not possessed by many as single individuals of the profession, but which might be procured at the society's expense, ought to be given trial to; more especially as we read at times, in our monthly publications, of new methods of treatment—methods which often are, without doubt, of much practical utility. Because, however, we do not see them used; or too often it may be, because we doubt their success, knowing that what is written and spoken often suit not for practice but theory; or, perhaps, because we are prejudiced in favour of old notions and methods, these, and it

may be, other valuable appliances are entirely lost to us, and thus much monthly information passes into oblivion. Would it not then, he would ask, be right and judicious to expend a few pounds for this important purpose? We might thus arrive at a number of facts, and be able to make public results, which would be valuable to the profession, they knowing that the investigations had not been adopted for the purpose of condemning but for proving statements, and had not been executed in a corner, but before twenty or more of their members, which would be an adequate guarantee of fidelity to the profession.

After much discussion, the proposition was unanimously agreed to; the arrangements of all matters connected with it to be under the superintendence of the directors.

Mr. Anderson called attention to the death of a much esteemed member, Mr. Dunlop, late of Glasgow, who had left some time ago for New Zealand, and when within sight of his desired haven was called to his last home, not being permitted to land. After paying a high tribute to his memory, Mr. Anderson concluded by calling on all present to imitate his life.

It was agreed to enter Mr. Anderson's suitable remarks in the minutes.

Mr. Wilson, of Donne, gave a lengthened description of the method adopted by him for "horning cattle" or "polling" them, by extracting the horns when young. This practice had been carried on, he said, for a considerable time, and to a much greater extent than formerly, in various parts of the country. Some, no doubt, would condemn it, but in many respects the operation was beneficial, as it often happened that when a number of horned cattle were housed and fed together injuries occurred, and so frequently was this the case, that the breeder was compelled to resort to a system to prevent such results. When the horns are extracted it is seldom that serious injuries take place, neither are the animals so desirous of pouncing one another, so that they feed quieter and grow more rapidly, and therefore become more remunerative to the stock-owner.

Several members spoke against the practice, especially the chairman, who considered it came almost under the designation of cruelty to animals. The subject was dropped on it being announced that dinner was on the table. The members then partook of an excellent dinner, served to their entire satisfaction.

The cloth being removed the following toasts were proposed:—The royal and patriotic, by the Chairman.

“Our Association,” by Mr. Pottie, Croupeu. “Veterinary Professors,” by Mr. Dobie. “Veterinary Institutions,” by Mr. Anderson. Replied to by Mr. McBryde. “Royal College of Veterinary Surgeons,” by Mr. Wilson. “Highland and Agricultural Society,” by Mr. Robb. “Veterinary Students,” by Mr. Anderson. Replied to by Mr. Lawson, jun., Manchester.

Several songs were likewise sung during the evening, which added much to the pleasure of the meeting. After singing “Auld Langsyne,” all parted at a seasonable hour.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JAN. 13, 1864.

PRESENT:—Professors Spooner and Simonds, Messrs. Braby, Broad, Dickens, Ellis, Field, Gardiner, Harpley, Hunt, Jex, Lawson, Mavor, Moon, Pritchard, Wilkinson, Withers, and the Secretary.

The President being absent on account of indisposition:

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Pritchard*—

“That Mr. Harpley, *Vice President*, take the Chair.”

The minutes of the preceding meeting were then read and confirmed.

A letter received from Mr. Jex was read, in which he begged to present to the Museum some models of the legs of the horse. The models being laid upon the table:

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Ellis*—

“That a vote of thanks be given to Mr. Jex for this acceptable present.”—Carried.

The Finance Committee reported that they had examined the vouchers and receipts of payment during the preceding Quarter, which were found to be correct. The Quarterly Balance Sheet of the Treasurer’s Account showed that the present liabilities amounted to £74 1s. 1d., which they—the Finance Committee—recommended should be discharged. The Balance left in hand after payment of the liabilities would be £479 14s.

It was moved by *Professor Simonds*, and seconded by *Mr. Jex*—

“That the Report be received and adopted.”

The election of two Members of the Court of Examiners in the place of Messrs. Quain and Field resigned, was next proceeded with.

It was moved by *Mr. Pritchard*, and seconded by *Professor Spooner*—

“That Mr. Ellis, of University College Hospital, be elected to fill the vacancy occasioned by the resignation of Mr. Quain.”

On the ballot being taken, Mr. Ellis was found to be duly elected.

It was next moved by *Professor Simonds*, and seconded by *Mr. Wilkinson*—

“That Professor Morton be elected one of the Board of Examiners, to fill the vacancy caused by the retirement of Mr. Field.”

It was also moved by *Mr. Harpley*, and seconded by *Mr. Braby*—

“That Mr. Jex, of the 1st Life Guards, be elected to the vacant seat.”

On the Ballot being taken, there were found to be for Professor Morton, 10; for Mr. Jex, 5. Professor Morton was thereupon declared to be duly elected.

Cheques were ordered to be drawn for the current expenses.

The business of the Quarterly Meeting having terminated, a Special Meeting was held to consider Mr. Wilkinson's motion for the alteration of Bye-law 21.

SPECIAL MEETING OF COUNCIL.

After a lengthy discussion on the proposed alteration of the Bye-law as not being sufficiently comprehensive to meet the requirements of the case, Mr. Wilkinson withdrew his motion.

It was then moved by *Professor Simonds*, and seconded by *Mr. Wilkinson*—

“That a Committee be appointed to consider the alteration of Bye-law 21, in connection with other laws relating to the Secretary of the Court of Examiners acting for Scotland; and the arrangements which the Council had entered into on the appointment of its present Secretary.”—Carried.

The following gentlemen were nominated on the Committee, the President, Professors Spooner and Simonds, and Messrs. Mavor, Wilkinson, and Withers.

By order of the Council,

WILLIAM HENRY COATES,

Secretary.

ARMY APPOINTMENTS.

LONDON GAZETTE; *Jan.* 19, 1864.

James Darling, gent., to be Acting Veterinary Surgeon, *vice* Stanley, promoted.

Hugh Anderson, gent., to be acting Veterinary Surgeon, *vice* Channon, resigned.

MISCELLANEA.

THE USE OF "CASTOR" OIL.

AN amusing anecdote is related of Sir R. Jebb. One day a bottle of castor oil had been given to him, very pure; it had but lately been brought into use. Before he left home he gave it in charge to his man, telling him to be careful of it, as it was *castor oil*. After the lapse of some considerable time Sir Richard asked his servant for the oil. "Oh, it's all used," replied he. "Used!" said Sir Richard, "how and when, sir?" "I put it in the *castor* when wanted, and gave it to the company."

OBITUARY.

WE have within the last few days only been informed of the death of Mr. James Brennan, M.R.C.V.S., Curragh, Ireland, which took place a few months since. Mr. Brennan was related to the late Mr. George Watts, M.R.C.V.S., Dublin, whom he succeeded in practice. His diploma is dated May 22nd, 1850.

We have also to record the death of Mr. A. Dunlop, M.R.C.V.S., late of Glasgow, who died on his passage out to New Zealand, almost within sight of the island. His loss is deeply regretted by Scottish friends.

ERRATUM IN NO. 433.

Page 61, tenth line from bottom, *for* William Hacker, *read* William Thacker.

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Communications and Cases.

SCROFULOUS ABSCESSSES IN THE KIDNEYS
OF A COW.

By Professor VARNELL, Royal Veterinary College, London.

IN the early part of January, 1864, I received from Mr. E. G. Crowhurst, M.R.C.V.S., Amersham, Bucks, the kidneys of a short-horned cow, which proved to be very interesting specimens of disease. They were enclosed in a large amount of fat, which indicated that the animal from which they had been taken was by no means emaciated. On removing them from this adipose tissue, I was particularly struck with their enormous size and pallid appearance; but I purposely abstained from making any further examination of them until the following weekly meeting of the Veterinary Association, when, agreeably to Mr. Crowhurst's wish, I laid them before the members, and explained, as far as I was then able, the morbid changes that had taken place in those organs. I also read, at the same time, the following letter, which had been received from Mr. Crowhurst:

AMERSHAM.

MY DEAR SIR,—I forwarded to you yesterday a hamper containing two diseased kidneys which were taken from a cow, a valuable short-horn, the property of T. T. Drake, Esq., of Shordelors. The history of the case, as far as I can inform you, is as follows:—In the spring of last year, previous to my coming to this county, the cow was the subject of difficult labour, and my present partner, who was called to the case, being

unable to attend, several men attempted, under the instruction of a farrier, to effect delivery. At last, after pulling her—as the steward informed me—nearly to pieces, the calf was taken away, but the cow was afterwards found to be unable to retain her urine, or even to void her fæces in the natural way. Soon after I came here I was consulted as to again breeding from her, which I advised should not be done, but that she should be fatted. This advice was acted upon, and I heard no more about her until last Wednesday, when I was again consulted, the steward stating that, although she had always fed well up to then, she had suddenly lost her appetite. Not seeing anything to satisfactorily account for this, and she being in good condition, I advised the steward to have her killed. On going to the butcher's I found the kidneys in a very diseased condition. You will see that I have not made any particular examination of them, being busy, and, besides, being desirous that you should receive them in the state they were removed from the carcass.

Are you of opinion that at the time of parturition the kidneys were injured, and that suppurative action followed? Is it not rather an uncommon case to find both glands so much diseased, and the animal still apparently enjoying good health? I have been further induced to send you these specimens, as I was very thankful to see anything of the kind on the table of the Association on a Tuesday evening while at College, and to hear any remarks which might be made thereon. Any further information which I can obtain respecting this case, should you wish it, I shall only be too pleased to communicate.

I am, dear sir,

Yours, &c.,

E. G. CROWHURST.

To Professor VARNELL.

Very little discussion took place with reference to the case, which was no more than I had anticipated, as the pathological changes which had taken place in the organs were not sufficiently apparent to the unaided eye to enable one to speak definitively of their nature. Being desirous of obtaining more information with reference to the history of the case, I wrote to Mr. Crowhurst, requesting him to make further inquiries, and to inform me of any additional facts relative to the symptoms evinced by the animal between the period of her difficult parturition and that of her being slaughtered. Unfortunately, Mr. Crowhurst was unable to gain but little information in addition to that which he had already furnished me with, and which, considering the importance of the case, must be considered as being too imperfect and unsatisfactory. This, however, Mr. Crowhurst could not help, as he had seen the cow only once, and did not make a *post-mortem* examination. It is also to be regretted that the ureters and bladder were not sent with the kidneys, as an investigation of their condition would have added to the interest of the case.

To my communication Mr. Crowhurst wrote as follows :

AMERSHAM; *February 3rd*, 1864.

MY DEAR SIR,—I am pleased to have the opportunity at last of replying to your request. The delay has been occasioned by the person who attended the cow being away; but as he was daily expected back, I thought it best to wait. Immediately on his return I made every inquiry respecting the case, and I am informed that soon after parturition they were very anxious respecting the well-doing of the cow, as it was noticed that she was unable to pass any water. Shortly after this, a quantity of matter, so called, was seen to come away from the vagina, when it was found that, although she passed more water, it was only in a dribbling way. The same thing occurred two or three times in succession; and since then her water has run from her in small quantities, and been rather thicker than natural. I am also informed that she was pulled round and round the cow-house in taking the calf away, which probably laid the foundation for the disease. The matter said to have come away, I should suppose, depended upon the bursting of an abscess in one or other of the kidneys, but I wait your opinion on this point, and also on others connected with the nature of the disease.

I am, dear Sir,

Yours obediently,

E. G. CROWHURST.

To Professor VARNELL.

Before making any comments on the nature and probable cause of this disease, I will briefly state the appearances which the organs presented to the unassisted vision, and then, as briefly, allude to the morbid changes that had taken place in their structure. I have before stated that both the kidneys were of an enormous size. One of them measured as much as seventeen inches in length, and about ten in width. The other was about fifteen inches long and nine inches wide. The lobules of each, as might be supposed, were very large, and the *sulci* between them comparatively shallow. The surface of the lobules presented different characters; in some it appeared to be smooth, but when examined with a common pocket lens only, it was found to be very uneven. Other of the lobules were uneven in a marked degree, having somewhat the appearance of a very rough-skinned orange. At the extremity of each kidney a few of these lobules had lost a portion of their cortical and tubular structures, while in three or four of them these parts had disappeared altogether, leaving simply the outer thin capsule, with the much thickened inner lining membrane.

A very small portion of the ureter was attached to each kidney, the lining membrane of which I first traced into the pelvis of each organ and throughout their several calices, in all of which I found it to be much thickened. Both

organs contained in these cavities a large amount of a lightish-gray coloured and curdy matter, which in some of the calices was in a more fluid condition than in others, but in none of them had it any urinous smell.

I next made a section through each kidney, which developed a very unusual appearance of their structure. The cortical part was moderately firm, and of a pale-straw colour, but the tubular portion—which in the healthy organ is light in colour, excepting at the base of the cones—was of a dark-pink hue. No striæ, taking a course in the long axis of the cones, as is faintly seen in the healthy organ, indicating the presence of tubes, could be detected in this instance.

On examining the structure of the organs with the microscope, I failed to detect in the cortical portion either blood-vessels or even the convoluted commencements of the tubuli uriniferi. In the tubular portion, which, as before stated, was of a dark-pink colour, only a few tubes could be detected, and these were very much enlarged, and so fully crammed with epithelial cells as to be rendered impervious. The curdy matter in their interior, as far as I could make out, was chiefly composed of pus-cells, some large and irregularly shaped nucleated cells, and a quantity of granular matter. I also noticed a few fat-vesicles, and some free oil-particles; and at the inner edge of the tubular portion I detected a few octohedral crystals, which I considered to be oxalate of lime.

Not being quite satisfied with my own examination, and with a view of being the better enabled to speak of the true character of the disease, I sent a portion of one of the kidneys to Dr. G. Harley, Professor at University College, who wrote me in reply.

After the receipt of Dr. Harley's note, a mutual friend, who was with him at the time he examined the specimen, called on me, and more fully informed me of the views the doctor had taken in reference to the nature of the disease. He also brought me some sections of both the cortical and tubular portions of the kidney, which he had himself prepared for Dr. Harley's examination. They were better specimens than I had been able to prepare; and although I did not detect in them anything which I had not previously seen, yet the abnormal products and the changes in the structure of the organ were much clearer and better defined.

In the last number of the *Veterinarian* I suggested the advisability of paying more attention to the character of the urine of our patients than has hitherto been done. In the case in question, had the urine been examined, I have no

doubt but pus would have been found, and perhaps also some cells characteristic of the disease under which the cow was labouring.

I cannot think that difficult parturition was the sole cause of this disease, although it might have had much to do in increasing its activity and hastening its final results. I have long thought there was a great tendency in cattle to scrofula, particularly in some of our improved breeds. The members of our profession should be on the alert in looking out for indications of this affection, as it is only by numbers and comparisons that a right conclusion can be arrived at on a point like this.

The kidneys of this cow could not have performed their function, or at any rate only very imperfectly, for a long time; and it is therefore the more remarkable that she should have been apparently in good health, and have laid on flesh nearly up to the time she was slaughtered. The case is a valuable one, and it is much to be desired that if any similar one should come under the notice of the veterinary surgeon, he will not fail to record it.

I feel that, in making comments on this case, I am somewhat trespassing on the domain of Professor Simonds; but I am assured he will agree with me, that in my so doing I am but working with him for one common end.

PATHOLOGY OF STRINGHALT.

Letter from Dr. JOHN BUSTEED, New York.

GENTLEMEN,—In the October number of your Journal you were pleased to copy a letter of mine, addressed to *Wilks' Spirit of the Times*, on the subject of "Stringhalt." It will also be in your remembrance that the cases referred to in that communication received from the pen of Professor Varnell a scientific, liberal, and lengthened criticism. Concurring with the professor in all that he has said in reference to an interchange of opinions between medical men and veterinarians, I would go further, and advocate their union. No medical man, in my opinion, can become thoroughly proficient in his profession without some knowledge of comparative anatomy, and certainly the veterinary surgeon will be none the worse off if he avail himself of the text, "Know

thyself." I regret that my remarks were written in such a careless way as to give rise to doubts as to their true meaning. When I stated that my observations did not agree with Professor Spooner, or with Messrs. Goodwin, Percivall, or Youatt, I had reference only to the abnormal appearance that the scalpel presented to my view. I did not find the same lesions of structure seen and described by those gentlemen, but I did not for one moment doubt the fidelity of their dissections. They found disease of the spinal column, the spinal marrow, and sciatic nerve, and also of their coverings, and attributed to this condition of the parts the irritation which caused stringhalt. I detected none of the lesions above named, but found in an ulcerated condition the astragalus and tibia.

Having the *Veterinarian* in my possession from its first publication, and also the *Veterinary Record and Review*, and having likewise the works of Percivall, Goodwin, Blaine, Youatt, B. Clark, Coleman, Gamgee, and some two hundred and fifty other works on veterinary science, in the English language, and nearly as many more in the French, German, Italian, and Spanish languages, I could not be ignorant that ulceration of the astragalus was known to the profession. It was not to the existence of the ulceration that I desired to direct attention, but to the *nature* of the ulcer. The French, for many years before Messrs. Percivall, Spooner, and Goodwin, made known the result of their observations, and attributed stringhalt to a diseased condition of the hock. They describe it as *eparvin sec*, and call the spasmodic action *harper*. Rigot says it is caused by friction between the astragalus and tibia, and I have good reason to believe this opinion is still held by some of the best veterinary surgeons in France. From the opinions entertained by the French, from the fact also that ulceration sometimes exists without producing stringhalt, and from the further fact that man, in certain diseases of the articulations, is subject to spasm of the limb, the idea—whether worthy of anything or not—suggested itself to my mind that stringhalt might have its origin in an *irritable* condition of the ulcer; and I do not know any good reason why diseased bone and cartilage should not have their benign and their irritable form of ulcer, as well as other tissues of the body. If any of your readers should call upon me to point out the difference between the two forms of ulcer, permit me to refer them to structural anatomists, as the practical surgeon has not as yet been enlightened by them on this point.

I agree with Professor Varnell in all that he says in

reference to the experimental physiologist, and as to the results which would be produced by the experiments he suggests on the nerves. There can be no doubt that the irritated nerves excite the muscles. That, however, is not the point between us, but whether the cause of irritation has its origin in the hock or the spine, or anywhere between those two points.

In reference to the two cases of spavin, followed by stringhalt, referred to by the professor, I would ask if ulceration of the astragalus may not have existed at the same time? The professor says, "I have dissected many ulcerated hocks, but I am not aware that stringhalt could be traced, in any one instance, to disease of this nature." Has Professor Varnell made *post-mortems* on horses known to have had stringhalt without finding ulceration of the astragalus?

Again, he says, "let us see whether that which Dr. Busted describes as an ulcer is in reality one." "If such ulcers as the doctor describes had really existed, would not the synovia he so frequently alludes to have been discoloured?" That would depend on the extent to which the bone was diseased; if but slightly affected, I think there would be no discoloration; I did not, however, submit it to microscopic test.

Professor Varnell further asks, "If the depressions the doctor met with on the articular surface of the astragalus, and occasionally on the tibia also, are not true ulcers, what are they?" He answers this question himself by observing, "Why, simply those parts of the articulations upon which cartilage was never developed. They were, I have no doubt, congenital." I must confess I am at a loss to understand the professor. Does he mean that bone is to be found in the articulations of the colt at birth? or does he mean that foals are liable at birth to a particular form of ulceration? If so, I think, in all fairness, he ought to have described the appearance between congenital ulceration or defect, and ulceration arising from injury or disease, so as to enable me to judge of the difference between ulceration in man (with which I am familiar) and that of animals, as they appear to me to be alike. Again, he remarks, "I believe this form of disease sometimes suddenly assumes a different character, when the undermined articular parts of the bone and its much-thinned cartilage caves in. But this is not the so-called ulcer of Dr. Busted." In Case No. 3 I say, "the astragalus had in it a deep ulcer, which had penetrated the substance of the bone;" this is the ulcer of Dr. Busted, but not in such an exaggerated form as described by Professor Varnell,

“One word more respecting articular cartilage, for it is this variety which the doctor refers to when alluding to its extreme sensibility when inflamed.” I alluded to cartilage only in a general way; I certainly did not wish to be understood as stating that the cartilage was primarily ulcerated, or that it is sensitive, or that vessels can be traced into it when in a healthy condition; it is, nevertheless, subject to disease—call that disease inflammation, ulceration, degeneration, disintegration, liquefaction, or any other name you please.

While fully appreciating the investigations of histologists, I must confess I am not yet willing to drop the substance for the shadow. Cooper, Liston, Brodie, Guthrie, and others, hesitate not to state that cartilage plays a conspicuous part in diseases of the joints, increasing pain as it is more or less involved in disease. Kölliker, a sound histologist, states that blood-vessels have been observed in it up to the eighteenth year; Brodie and Liston have likewise traced vessels into it. I cannot divest my mind of the existence of vessels in cartilage; to do so, I should have to consider it inorganic, which I do not. I believe it must be supplied with vessels of some kind for its nourishment, and for its repair when diseased; and I also believe that wherever blood-vessels go, nerves will be found to accompany them.

Of all the tissues in the body, cartilage possesses the lowest possible degree of vitality, and herein lies its great value. It is owing to this fact that it is able to resist violent concussion and injuries, to which it is at all times liable; and for the same reason, when ulcerated or diseased, its destruction or decay is very slow. But admitting, for the sake of argument, its non-vascularity, this would not alter the fact that it is subject to inflammation.

Since my letter was written to the *Spirit of the Times* I have obtained a work on diseases of the joints, published in 1861, by Barwell, a good histologist and an excellent surgeon. He says, “It can now be certainly affirmed that any part which is capable of nutrition is also capable of inflammation; it can, I submit, be no longer denied that cartilage is liable to be inflamed, and consequently ulcerated.” Again, “Cartilaginous inflammation is accompanied by a hyperæmia of the vessels; it is certain that what is called vascularity of tissue is not necessary to confer on it a power of becoming inflamed; it is equally certain that when a tissue makes increased nutritive demands, increased supply will be brought to it.” Again, “One of the circumstances in this disease which is most remarkable, and which has the greatest effect upon its subsequent course, is its constant accompaniment—the spas-

modic contraction of muscles. It must be also remembered that innervation of large joints is derived from sensory filaments of muscular branches, and that a close connection exists in health between muscular action and articular pressure. The anatomist's knife can, with the greatest ease, discover which nervous branch sends a twig to the articulation; but when the twig has passed into the joint, it is hardly possible to trace the actual spot of its distribution. Such contraction is produced by a morbid form of reflex action, carried from the nerves supplying the joint to those of the muscles." "It is generally considered that the spasms, both momentary and constant, are produced by a *semi-voluntary flinching from the pain.*" "The inflammation may be, as we have already said, acute or chronic; when acute an ulcer with clean-cut edges is produced; when the action is chronic, the hyaline structure is converted into fibres, which render the edges and bottom of the ulcer rough and uneven."

I believe I have now noticed all the points referred to by Professor Varnell, to whom I feel indebted for the considerate and friendly way in which he has handled my theory; and permit me further to say that I have no ambition to be considered a discoverer. My object was to court inquiry, and to invite investigation upon a point of "doubtful pathology."

Since I commenced writing this letter I have received the *November* number of your Journal, and in it are some remarks from Mr. Fleming on the subject of stringhalt. There are, however, but two points in his communication requiring a notice from me, as Professor Varnell has already gone over the same ground, much more ably, and in a style and manner more agreeable, I have no doubt, to your readers, and from which Mr. Fleming might, with advantage to himself, take a lesson. Mr. Fleming charges me with ignorance of comparative anatomy and physiology, because I was not aware—if such is the fact—that the sulci in the lower part of the groove of the astragalus are devoid of cartilage. Now, as I obtained what little knowledge of comparative anatomy I possess from veterinary works, that gentleman will please inform your readers the name of the English veterinary physiologist or anatomist who makes mention of these sulci being covered with cartilage, or who (with the exception of Mr. Gamgee, whose work on osteology I have just received) even mentions their existence; if he cannot do so, Mr. Fleming may have perchance, unwittingly on his part, made himself a "discoverer."

Your compositor makes me say, "the synovial tissue was

deep;" it should read "fissure," which will explain the difference between European and American synovial tissue, and might have been detected as a typographical error by Mr. Fleming, had his "imagination been lively enough," or his "knowledge of anatomy less profound."

I am,

Yours, &c.

To the Editors of the 'Veterinarian.'

REPLY TO DR BUSTEED'S LETTER, BY PROFESSOR
VARNELL.

Through the courtesy of the editors of the *Veterinarian*, I was enabled to peruse the foregoing letter prior to its publication, and have been thereby afforded the opportunity of furnishing a reply without the usual interval of a month's delay. I think no one, after having read Dr. Busteed's paper, will doubt the propriety of my defending the statements that I made in my former communication, both in reference to the doctor's ideas of the cause of stringhalt, as also of those he had expressed with regard to the views entertained on the subject by certain English pathologists. From the doctor's remarks generally, and from the host of books he has thought proper to refer to, it might be thought that I was wholly ignorant of the views entertained in respect to structural and pathological anatomy, the nature of an ulcer, or the congenital peculiarities often met with in normal anatomy.

Pathological anatomy, like normal anatomy, cannot be learned from books alone, however many a man may possess, or in whatever language they may be written. Nor can the symptoms of pathological lesions be rightly interpreted excepting by long and careful observation, aided by a knowledge of both these divisions of science. To this I have no doubt Dr. Busteed will assent, and will feel with me that our object in discussing matters of pathology should be, as far as possible, to further the ends of medical science, whether human or comparative.

The doctor says, after referring to a long list of books, "I could not be ignorant that ulceration of the articulation of the astragalus was known to the profession." To this I reply that I never for a moment supposed that he was, for ulceration of this bone, as well as of others, will occasionally exist. He goes on to say, "It was not the existence of the

ulceration that I desired to direct attention to, but to the nature of the ulcer." What ulcer? I had endeavoured to show that what the doctor considered to be the cause of stringhalt was in reality no ulcer at all, but a part of the articular lamella, varying in size and outline, upon which articular cartilage had never been developed. I may take this opportunity to state that this peculiarity is not always constant; but, nevertheless, in many instances, it is present on the articulations of the tibio-astragalean joint, and also on those of other bones forming diarthrodial joints. In another part of the doctor's letter he asks (alluding to me), "Does he mean that bone is found in the articulation of the foal at birth? or does he mean that foals are liable at birth to a particular form of ulceration?" I mean neither the one nor the other, nor do I think that any such inference can be rightly drawn from my remarks. Such *sulci* as are referred to are not ulcers, and the articular lamellæ forming their bottoms are covered with a thin membrane, so that *exposed* bone is not in the joint, either at birth or afterwards, while the part remains in a healthy condition.

The doctor goes on to say, "I think, in all fairness, he [I] ought to have described the appearance between congenital ulcer and that arising from injury or disease." What does the doctor mean? I have never said a word about congenital ulcer, nor ever thought of doing so. The congenital absence of cartilage in the tibio-astragalean articulation, which I referred to, and still have again to do, is not an ulcer, although I am afraid the doctor has mistaken it for such. Further on the doctor asks, "in the two cases of spavin followed by stringhalt, referred to by the professor, if ulceration of the astragalus may not have existed at the same time?" To this I must reply that I cannot say, not having examined the hock *post-mortem*; but if it did, or even the so-called ulcer of Dr. Busteed, I believe that neither the one nor the other was the cause of the stringhalt. Again, he asks, "Has Professor Varnell made *post-mortems* of horses known to have had stringhalt without finding ulceration of the astragalus?" Yes; in the worst case I ever saw I dissected both hocks, and not a trace of ulceration or disease of any kind existed in any of the tarsal articulations. The doctor then observes, quoting from my remarks, "I believe that this form of disease sometimes suddenly assumes a different character." In making this statement, I alluded to extensive ulceration of the joint (see page 595 of the *October* number of the *Veterinarian*), and had no reference to the supposed ulcer of Dr. Busteed, but merely to true ulceration. The doctor's case

No. 3, according to his statement, had ulceration of the articular surfaces of both hocks, attended with lameness of the off—I expect of the near one also—and stringhalt of the near limb. This may have been so, but I doubt, nevertheless, if the stringhalt was due to ulceration.

Dr. Busted further says, “I certainly did not wish to be understood as stating that the cartilage was primarily ulcerated, or that it is sensitive, or that vessels can be traced into it when in a healthy condition;” and also that “I cannot divest my mind of the existence of vessels in cartilage, as to do so I should have to consider it inorganic, which I do not.” Surely the doctor would not consider articular cartilage inorganic because no blood-vessels can be traced into its structure. This would be quite a new idea.

He then says, “I believe it must be supplied with vessels for its nourishment, and for its repair when diseased.” I may inform the doctor that if he again refers to some of his numerous books on histology, he will find it stated that articular cartilage is nourished from the vessels of the bone upon which it is placed. Or if he examine the structure of this tissue, and that of the bone beneath it, he will, I have no doubt, come to the same conclusion; and that when cartilage is lost from disease or injury, it is not again repaired by cartilage. Again, he says, “I believe that wherever blood-vessels go, nerves will be found to accompany them.” Yes, so they do; but he has stated that he did not wish to be understood that either vessels or nerves could be traced into the structure of articular cartilage.

The doctor also quotes largely from Barwell on diseases of the joints, but I do not see that the quotations have any direct bearing on stringhalt, but have reference only to the structure of articular cartilage. I would refer the doctor to pages 12 and 13 of this work, and I think he will not find any evidence therein of the existence of vessels in this structure. Again, at page 25 of Barwell’s work, which I find the doctor has consulted with reference to the nerves of a joint, no mention is made of nerves having been found in articular cartilage. At page 288 it is stated that Sir B. Brodie is said to have had “some difficulty in getting rid of the idea of there being vessels in articular cartilage.” On referring to Sir B. Brodie’s work on diseases of the joints, I find at page 154, *fifth edition*, that he says, “After the period of growth is concluded, no blood-vessels can be detected in healthy cartilage, even on microscopic examination.” Also at page 155, when speaking of Mr. Liston’s opinion on this subject, he remarks, “I do not mean to infer, nor did

Mr. Liston, as I apprehend, mean to infer, that blood-vessels extend into the articular cartilage of the adult when actually in a healthy state."

Kölliker (vol. i, page 322), distinctly says, in the last four lines of the second paragraph, "The articular cartilage has no nerves or vessels." Again, in page 324, "In the adult the articular cartilages are non-vascular."

I refer to these works to show that their authors consider articular cartilage to be non-vascular; and they, be it remembered, are those particularly alluded to by Dr. Busted. I will now quote from a work the doctor has not mentioned, viz., the third volume of 'Holmes's Surgery,' *fifth article*, "Diseases of the Joints," by Athol A. Johnson, Esq., page 752:—"The articular lamella, like articular cartilage itself, contains no blood-vessels." And further on, at page 753, "The articular cartilages, when fully developed, contain neither nerves nor blood-vessels."

For some years I have been a worker with the microscope, in investigating the tissues composing the animal body, and I must confess that I never saw either nerves or blood-vessels in articular cartilage. In making the remarks which I did upon the paper of Dr. Busted, headed "*Doubtful Pathology of Stringhalt*," published in the October number of the *Veterinarian*, I did not consult any works on histology or on pathological anatomy; but now, having done so, I feel gratified that the statements I then made are corroborated by such high authorities. Much requires to be done, and many minute investigations made, before the pathology of stringhalt will be fully understood, and I trust that Dr. Busted will feel with me that our friendly discussion on this subject will not be altogether futile, but act as an incentive to further research.

ANALYSIS OF THE COMPACT OSSEOUS TUMOUR DESCRIBED BY MR. CARTLEDGE IN THE LAST NUMBER OF THE *VETERINARIAN*.

By Professor TUSON.

THE physical and anatomical peculiarities of an osseous tumour found in the sinuses of the head of a horse having been referred to in the last issue of this Journal, from which it would appear that the tumour possessed the usual characters of bone, I have thought that a quantitative analysis of it

would tend to complete our knowledge respecting its true nature and character. Having made such an investigation, I have now the pleasure of directing attention to the following statement of the results obtained. That a comparison may be instituted between the composition of this tumour and that of normal bone, I have placed the analyses of these two substances side by side.

	<i>Compact Osseous Tumour.</i>	<i>Femur of Mare aged 14 years. Von Bibra.</i>
Phosphate of lime, with traces of fluoride of calcium	62·73	54·63
Phosphate of magnesia	Traces.	1·50
Carbonate of lime	5·84	11·28
Carbonate of magnesia	Traces.	—
Salts soluble in water	Traces.	0·40
Organic matter (gelatin, fat, &c.)	31·43	32·19
	<hr style="width: 50%; margin: 0 auto;"/> 100·00	<hr style="width: 50%; margin: 0 auto;"/> 100·00

We thus see that the osseous tumour contains about 8 per cent. more of phosphate of lime, probably from 1 to $1\frac{1}{4}$ per cent. less of carbonate of magnesia, and about $5\frac{1}{2}$ per cent. less of carbonate of lime, than the bone of the mare; but that in other respects there is a striking concordance in the qualitative and quantitative constitution of both specimens.

It may be well to remark that Von Bibra has published the analysis of the femur and humerus of a castrated horse, aged six years, and that the composition of these bones was not found to differ essentially from that of the fourteen-year-old mare. If we now compare the composition of the osseous tumour with the bone of the mare, with reference *only to the relative quantities of earthy and animal matters* contained in them, we shall find that the difference is so extremely small ($\frac{3}{4}$ per cent.), that it may be completely rejected from our consideration.

	<i>Earthy matters.</i>	} Difference	<i>Animal matters.</i>	} Difference
Osseous deposit	68·57	|	31·43	|
Mare's bone	67·81		32·19	
		} 0·76		} 0·76

Thus we are enabled to conclude, from the mutually corroborative testimony afforded by the physical, anatomical, and chemical examination of the osseous deposit, that it possesses all the characters of true bone.

OBSERVATIONS ON SOUNDNESS.

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from p. 91.)

WINDGALLS OR BURSAL TUMOURS.

THIS affection has been from time immemorial, I believe, termed *windgalls*, from its being supposed that the bladders contained air or wind. Anatomists have given other and more surgical, as well as expressive, titles to these swellings, namely, *bursal enlargements* and *ganglia*. The latter term is open to objection, because it has a wide and somewhat foreign signification. The word ganglion is generally considered to refer to an enlargement or swelling, or “knot-like enlargement in the course of a nerve, &c. ;” this term, therefore—although employed by members of the human profession when speaking to veterinarians with reference to such enlargements—is, as I have said, open to an objection, as it does not faithfully convey to persons the precise meaning of the word. I would much prefer employing that which is less objectionable, and at the same time more expressive, *i. e.* tumefied bursæ. The word windgall should never pass the lips of a surgeon. Nor, indeed, is the more modern term, *bursæ mucosæ*, less erroneous. Windgall, on the one hand, would lead us to infer that the sac contained air; secondly, the surgical and scientific one, ganglion, will indicate situation or course of a nerve; and thirdly, *bursæ mucosæ* most positively relates to its containing mucus. It will, doubtless, be easily understood why each and every one of the above appellations should be abolished for ever from veterinary nosology. It has often been remarked that it matters but little what name a disease is known by, provided it be understood; but in this the nineteenth century surely such a word as windgall ought not to be found in any work on surgery. As I don't profess to be engaged in arranging such a work in the present instance, I shall not be expected to place before the readers of the *Veterinarian* a very elaborate paper upon the nature and treatment of these affections. I write affections, from the fact of bursal enlargements being said to be found in many situations, under a variety of names, such as capped elbow, capped hock, bog-spavin, thorough-pin, &c., all of which have been considered as one and the same disease. A description of the

first would in that case generally suffice for all, although some of them undergo much greater changes than others, depending upon their magnitude as well as their situation.

A bursa is described as a small synovial sac, found in the vicinity of joints and tendinous sheaths, which secretes a fluid in every way analogous to that found within a true joint, and which is termed synovia. Indeed, many of these bursæ are actually in *direct* communication with the interior of a joint. Their use is supposed to be that of preventing friction, concussion, &c., of parts; and being placed between structures, they will naturally have such a tendency, the oil-like fluid which they contain being admirably adapted for that purpose. When, however, disease is set up, and the bursæ become enlarged or swollen, inconvenience and sometimes lameness result therefrom. This is not of *necessity* the case. Numerous causes have been assigned for the commencement of a bursal tumour, viz., work, sprain, and others, as active agents in promoting disease. Doubtless, concussion is the principal one, whether in youth or adult age. It has been declared that a colt, not having been broken, cannot have bursal enlargements through work or a sprain. It does not follow as a matter of course, because an animal has *not* been trained or put to work, that the disease which we are considering is not caused by over-work or sprain. How frequently do we witness colts exerting themselves in mere play beyond their powers and strength? The most marked case in proof of this assertion—I could relate many—occurred in my practice a few months since. A M.D. requested me—he is a great horse amateur—to call at his stables and look at a two-year-old colt, which had what he termed a bog- or blood-spavin. I found on the off hock an immense swelling of a bursal sac, which was much inflamed and extremely sensitive; and although the colt could not be pronounced lame, still the action of the joint was impaired. Various were the inquiries instituted as to the work he had performed, to all of which replies were given in the negative. I, however, found out that the colt spent the greater part of his time in a low, small-sized loose box, and to amuse himself he was in the habit of making attacks upon the rafters, to accomplish which he stood upon his hind feet and struck out with the front. This amusement caused tumefaction of the bursa before mentioned, and converted a two-hundred guinea colt into a comparatively valueless animal.

Thus, it will be seen that actual work, or the process of training, is not absolutely necessary to produce disarrangement of these sacs.

Blood-spavin and bog-spavin have usually been considered by persons ignorant of the structure of the parts to be synonymous. I have more than once refused to operate upon animals affected with these diseases, as I felt convinced I should—in the cases referred to—not add anything to my reputation as a veterinary surgeon.

I think, in our examinations as to soundness, we should bear closely in mind the *stage* in which we find enlarged bursæ. Doubtless all practitioners are aware that there are many stages or states in which these enlargements are found to exist. They do not attack every animal in a similar manner, nor do they assume the same appearance in every joint. Take, for instance, that affection termed capped elbow, which is invariably caused by the heel of a shoe. This generally terminates in suppuration or resolution; therefore, I am inclined to believe a capped elbow should *not* be classed with these diseases. Take another example—capped hock. This is generally the result of a blow, produced by kicking, or it is sometimes brought on by the animal rubbing the hock against a rough wall. This is another disease, strictly speaking, not resembling those of bursal enlargements met with in the vicinity of the fetlock-joints: this, however, and that known by the name of thorough-pin, will be considered in their proper places.

For the sake of brevity, I would divide tumefied bursæ into soft and hard. The soft bursæ—I am now referring to the front fetlock-joints—seldom produce any inconvenience, except occasionally in racing stables. The bursæ become enlarged, as a general rule, by a very slow process; hence it is that, whatever derangement there may be in existence, it is but little felt, owing to the gradual development of disease. On the other hand, when referring to tumefied bursæ in the *hardened* state, we shall have to look a little more closely to the parts or structures upon which it is found to impinge. Lameness is often produced by the pressure of a hardened bursa upon the nervous filaments, and especially will a horse be lame when that pressure is exerted upon the terminal portions of the metacarpal nerves. This being the case, it can be readily understood how it is that bandages so often are found to cause the irritation we are desirous of preventing. When, however, the bandage is wet and applied loosely, it has not that irritative effect as when it is placed *tightly* about the joint, and allowed to become dry and hard. It is this which proves so troublesome to a practitioner in the treatment of such affections; his instructions are not always carried out in a proper manner.

When bursal enlargements are small, soft, free from inflammation, and not tender upon pressure, there is but little to fear in giving an opinion as to the soundness of the animal; but when the enlargements are hard, hot, and sensitive, especially in aged horses, known or suspected to have done much work; it will be advisable to scrutinise very keenly the action of the limbs. There is often a rigid movement observable; and much also will depend upon the obliquity of the pasterns, as to the impairment or otherwise in the action of an animal having these diseases.

It is the practice of veterinarians to pass a horse as being sound when he is not actually lame. The state of the law with regard to windgalls, as it is termed, is about the same as in every other affection, most ambiguous, leaving everything to the opinions formed by those supposed to be capable of advancing them. Oliphant writes as follows:—"There are few horses perfectly free from windgalls, but they do not interfere with the action of the fetlock or cause lameness, except when they are numerous or large." "In an action which was brought on the warranty of a horse, the breach of which was windgalls, a verdict was found for the plaintiff. The windgalls had probably produced lameness, as there appeared not to have been any dispute about the *unsoundness*, but only about the form of action." I must confess this quotation is not characterised by its lucidity. It states, in the first place, "there are few horses perfectly free from windgalls, but they do not interfere with the action of the fetlock or cause lameness;" secondly, plaintiff gained a verdict; there was no dispute about the unsoundness, but only about the form of action. Whether the impairment of action was caused by this disease it does not state, but it must be presumed such is the meaning of it.

It may be inferred that by far the great majority of horses suffering from these tumefied sacs are what must or ought to be termed *practically* or usefully sound; and taking the meaning of the word sound as given by the learned judges of Great Britain, no horse with bursal disease is a sound one, but for all practical purposes he is so.

(*To be continued.*)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from p. 24.)

HAVING given a brief outline of the botanical characters of the natural order Ranunculaceæ, I purpose now bringing under notice, in detail, those plants belonging to the order which possess features of interest to the veterinary surgeon. The first plant I shall proceed to describe is one which has recently been brought before the public as the poisonous agent by which the murderer Hunt destroyed his own life—viz., the *Aconitum napellus* or *Monkshood*. The following are its chief botanical characters—*Aconitum napellus* (*Monkshood*). “*Stem*, leafy, erect, about three feet high. *Leaves* divided palmately into many narrow lobes. *Flowers* in nearly simple racemes, downy. *Sepals*, five petal-like, very irregular, the upper one being convex and compressed. *Petals*, two, hooded with a curved stalk, horizontal; three others very small, scale-like, often wanting. *Carpels*, three to five, many-seeded. *Seeds*, three-cornered, with many plaited wrinkles at the back.”—*Lindley*. This plant has been known from a very early period, and was considered by the ancients to be the most powerful amongst vegetable poisons. It is a doubtful native of this country, having been probably introduced from the woody parts of Germany, France, and Switzerland, on account of its medicinal value. There are several varieties of this plant to be met with growing in our flower-gardens and shrubberies, all possessing more or less the same characters. The tubers (commonly called the root) of the *Aconitum napellus* are from three to four inches long, tapering in form, somewhat resembling the napus or navel, the French turnip, from which it derives its name, of a pale brown colour externally and white and fleshy internally. Fatal consequences have resulted from this root having been mistaken for horse-radish (*Cochlearia armoraciaca*), although the difference in colour, taste, and odour, should at once point out the distinction. The leaves, which appear in patches about the middle of February, are of a bright-green colour, deeply lacinated and placed alternately on the stem, which attains an height of from two to four feet. The flowers, which appear about the middle of June, are of a deep violet colour and slightly covered with down. It is from the resemblance of the upper sepal to a

hood that the name monkshood is derived. In other varieties the flowers are variegated, and in some of a yellow colour. This plant is cultivated for its floral beauty and as a medicinal agent. That its green glossy foliage, with its racemes of dark blue flowers, are very ornamental to our flower gardens in the earlier part of summer, will be at once admitted; but from the tendency this plant has to extend its growth, and the careless manner in which it is allowed to propagate itself amongst those plants whose roots or leaves (such as the horse-radish or parsley) are so frequently used by us as adjuncts to our table, and from the fatal consequences which have taken place from its having been partaken of in mistake for those plants, should, I think, point out much greater care in its cultivation, or that so deleterious a plant should alone be cultivated in our medicinal gardens. All parts of the plant contain active properties, but the parts chiefly employed in medicine are the root (tubers) and leaves. These should be collected after the flowers begin to fade and before the seeds begin to ripen. The tubers may then be cut into thin slices, and carefully dried at a low temperature. From these, the two preparations most commonly used, viz., the tincture and extract of aconite, are obtained. The tincture is made by macerating the root in rectified spirit, and the formula of Dr. Fleming is generally considered the most effective, given in doses of from ten to twenty minims. The extract of aconite is made by inspissating the juice of the leaves, or more readily by evaporating the tincture to the consistence of an extract. For external application, an ointment may also be prepared, as recommended by Dr. Turnbull, by mixing one part of the extract with two parts of lard. In my next communication I shall proceed to describe its value as a medicinal agent, and its poisonous properties.

(To be continued.)

CLAIM AGAINST A VETERINARY SURGEON.

Letter from Mr. J. AKED, M.R.C.V.S., Blackburn.

SIR,—Having been subpoenaed to give evidence in the above case, and considering the history of it, as published in the *Veterinarian* for January last, not to be in accordance with some of the facts, I wish to set the public right so far

as I am concerned in the matter. Being quite a disinterested witness in the case, and having previously given the same opinion to the plaintiffs that I was afterwards subpoenaed to give in evidence for the defence, namely, that I was called in to see the horse immediately tetanus had set in (not just before his death); I informed them of the nature of the disease the horse was labouring under, and that from a previous engagement I could not possibly assist in the treatment of the case; but that in my opinion the best thing would be to put the horse out of his suffering. This advice proved to be but too true for the poor animal and the parties concerned. I also gave it in evidence that tetanus, as a rule, was incurable, or in other words, that there was no certain or known cure for the disease, and that although I had read of cases recovering (not of their successful treatment), I gave it as my opinion that when a horse did occasionally recover from that dreadful malady he did so more from the strength of his own constitution than from any fancied remedies that might have been given to him, as any such supposed curative agents, when administered to other similar cases, might prove of no earthly use.

I am, &c.

To the Editors of 'The Veterinarian.'

THE OPERATION OF " FIRING " FOR ROARING.

By W. SHIRLEY, M.R.C.V.S., Twickenham.

As firing over the course of the trachea is now attracting attention, not only among ourselves, but also among sporting men generally, I venture to address you in the hope that some of your correspondents who have witnessed benefit from the operation will kindly communicate the cases to the *Veterinarian*, so that we may fairly learn the true value to be put upon it.

The case published in *Bell's Life* is not of itself at all conclusive, as we get no history of the case, nor of the remedies applied previous to the use of the actual cautery.

I can relate several cases of roaring that have been successfully treated without such an application, yet I should no more think of treating a case of *confirmed* roaring, and leading the owner to believe that I could cure it, than I should one of confirmed glanders.

The cases alluded to were of recent date, and the animals not predisposed by conformation to become roarers; and as I am soliciting others to give, through your pages, accounts of cases that have come under their notice, wherein firing has been the means of establishing a cure, I perhaps may be excused if I relate one that was successfully treated by blisters alone. The patient was a brown gelding, belonging to the Duke d'Aumale. I think the horse was about nine years old, rather under fifteen hands two inches high, short legged, and not long in the neck, with a well-bred head and good shoulders; he had been constantly used as a hunter, and when my attention was called to him had been a roarer about three weeks. He had no cough, but there was a little stiffness about the throat, the glands of which were slightly swollen; he fed well, drank without difficulty, his spirits were good, and there was nothing else in any way the matter with him, except that he made a great noise, not only in his gallop, but also in his trot. As I did not express myself very sanguine about the cure, the duke was inclined to get rid of him, but Mr. Coates, the chief of the stables, wishing the horse to be treated, the duke complied. I find, by reference to my case-book, that the horse was blistered three times, and had fourteen draughts given him (principally composed of nitrate of potash) between the 16th of April and the 28th of May; during which time he was kept perfectly cool and quiet. He was hunted two seasons since, and the cure is as perfect as can be wished. Now, I am of opinion that this case, satisfactory as it is, only encourages us to attempt a cure whenever the circumstances and form of the animal are to almost an equal extent favorable.

I can also mention another horse that was cured by keeping a seton constantly over his larynx, he doing his work as a hunter and feeding well all the time. Being a black horse, I put brown tape in, bringing it out as much on the off side as I could: the mane thus covered the eyesore. But there were peculiarities about this case that, as I thought, admitted the hope of a cure, otherwise I should not have treated it. Of course cases will sometimes occur in practice which, if handled with tact, give us a great hold on the confidence of the public, when in reality nature has done all, or nearly all the work for us; but even in such cases the veterinary surgeon is worthy of his hire, when he has learnt to bow with submission to and patiently watch the working out of laws which the more he studies the less inclined he becomes to interfere with. What I wish is, to guard the profession against running away with the notion that, as a

general rule, they can cure roaring *by any means*. I have a horse now on my premises that I will give any one fifty guineas to cure of this disease.

I feel that I am trespassing on your time and space. If you think any useful purpose will be answered by inserting the above, I shall feel obliged; if otherwise, please consign it to the flames, though I own I shall be glad to learn something more about firing as a cure for roaring. At present I do not believe in it.

RUPTURE OF THE STOMACH OF A HORSE, ASSOCIATED WITH THE EXISTENCE OF CYSTS BETWEEN ITS COATS CONTAINING LARGE NUMBERS OF WORMS.

By "ARGUS."

THE following case is, I think, one of rare occurrence in veterinary practice; and as I am somewhat puzzled to account for the original cause of such a state of things as the *post-mortem* examination revealed, I shall feel much obliged if you will kindly express your opinion on the subject.

A troop-horse of the Australian breed was admitted into hospital one morning some months ago with all the symptoms of severe gastro-enteritis. At first the treatment usually adopted under such circumstances was resorted to, and about three hours after admission I gave the patient chloroform and opium in some acacia mucilage, and repeated it every half hour. Six hours from his first coming into hospital it became evident that a rupture of the walls, or rather coats of the stomach, had taken place, and that he was labouring under peritonitis. The case of course now became hopeless, and the animal died in about ten hours afterwards, or sixteen hours from first being attacked.

On examining the body after death I found the following lesions:—inflammation of the mucous coat of the stomach and intestines; rupture of the stomach, the rent in its coats being five inches long. The contents of the stomach were floating about in the abdominal cavity, and extensive peritonitis had resulted therefrom. On examining the stomach, after detaching it, I found indications of several large ulcers having existed along the line of the rupture, and that the coats of the organ were unusually thin and weak in this part.

It was the *cuticular* portion. In addition to these ulcers there were three good-sized tumours, each being as large as a big walnut, and having a small opening at the top. I made a vertical incision through each, and found that the cavity within was about half an inch in diameter, and somewhat less than an inch in depth. The contents consisted of a muco-purulent-looking fluid, a gritty substance like sand, and scores of minute worms similar to those found in the eye of the horse, but smaller. Each worm was about the third of an inch in length, and the thickness of very fine sewing cotton. Their colour was whitish and semi-transparent. At each end they tapered to a fine point. Were they *filariæ*? Have you ever seen them in the stomach? If so, how do they get into it—with the food, or water, or how?

When the worms were first removed from their *nidus* they were quite lively, but died in about ten minutes afterwards.

Is it not strange that horses with these lesions, akin to ulcers and abscesses in the stomach, look healthy, feed well, do their work all right, and are never sick until they are suddenly attacked with gastro-enteritis, when the coats of the stomach give way, and the animal dies in some ten to twenty hours?

Several cases of ulceration and rupture of the stomach have occurred in my practice, but only this solitary one where worms have been found within cysts connected with the lining membrane.

To the above case allow me to append the following statement, as an example of the way in which veterinary surgeons are treated in India. One of our assistant-surgeons completed six years' service on the 5th of this month, and from that date he takes rank as a captain, as a matter of right, and without any examination. Prior to the 5th instant I ranked senior to him, but I am now of course his junior. Is this fair? Has it a tendency to make veterinary surgeons zealous in the performance of their duties and fond of their profession and the military service, or the reverse? I have been three years longer in the army than the assistant-surgeon in question, and I am his senior in age by four years, but I remain a subaltern in rank, and (for all I know to the contrary) have every prospect of being one for the next eleven years. Although I am now in my tenth year of service I am still upon the pay of a *cornet* of cavalry, and shall be for several months more. On completing ten years I shall get the *magnificent* increase of the difference between a *cornet's* and *lieutenant's* allowance, *i. e.* I shall come upon

the pay of the latter rank, thus receiving £5 10s. a month more than now. This service in India is a great mistake. To people in England the sum total of our pay and allowances, looked at as a whole, sounds large; but if we deduct the special allowances given for certain purposes, such as house allowance, &c., we find that the *pay* of a veterinary surgeon in India is, after all, but 13s. 4d. a day during his first ten years, and 17s. during his second ten years' service. What is this in a country where our ordinary clothing and uniform cost at least 100 per cent. more than at home, and our food and wines from 50 to 75? We ought to be better paid for serving in such a country and climate; and I am certain the Veterinary Surgeon-General at home would be only too glad to urge the claims of the whole body were the matter laid before him in a clear and true light.

I think the older veterinary surgeons out here have even still greater cause for complaint. I know several who have served over twenty years, and yet they get but *captain's* pay and allowances. There are two or three of about thirty years' service, who, if they were serving at home, would get 23s. a day. Out here they draw 26s. 8d. Surely 3s. 8d. is scarcely enough to make up for the difference in price of *everything* in England and in India! leaving out of the question the extra pay expected for serving in such a vile country as India; far away from home and friends, and from every amusement to which an Englishman in England is accustomed.

Remember, there is no barrack accommodation in India for officers; no free quarters, coals, or candles; no soldier-servants for nominal wages; no part payment of forage cost by the Government: all this has to be paid for by the officer himself out of his extra allowances given for these special purposes. I have given you his pay minus these allowances.

[The case of rupture of the stomach containing worms, communicated by "Argus," is a most interesting and instructive one. It opens up a rare field of research, especially perhaps in India and other tropical climes, as to the real causes which are occasionally in operation to produce a weakening of the coats of the stomach, and which may ultimately end in rupture of that organ. The ulcers of which "Argus" speaks are probably the effect only of parasites. Many of the spots in which loss of structure was observed by him we should be inclined to regard as *cicatrices* which had followed the obliteration of cysts originally containing worms,

rather than ulcers. The non-existence of any perfect worm-cysts in connection with these cicatrices would almost of necessity divert the mind to other origins of them rather than the true one; but in the case in question the coexistence of the two things throws light on the real cause which had been in operation. The closer we investigate diseases the more are we daily assured that very many which hitherto had been but little understood owe their origin entirely to parasites. A few years since we met with an analogous case to the one in question, in a pig—a wild one—originally sent from Germany to the Zoological Society of London. Here several cysts existed in the submucous tissue of the stomach, in each of which *strongles* were being developed in a most remarkable manner, and when perfected they perforated the mucous membrane, and entered the stomach. The strongle is an entozoon remarkable for its existence in many and diverse parts of the body. We have ourselves recorded several instances of this worm being found beneath the peritoneal membrane, as well as in other situations indirectly only connected with the intestinal canal. Our belief is, that the worms met with by “Argus” were *strongles*, but as to the way in which they became located in cysts connected with the stomach we prefer at present to offer no opinion.

Many of the revelations of science in connection with the natural history of some of the entozoic worms are very remarkable; and it may be that the above case will be of use to investigators in this comparatively new field of research. We would earnestly ask assistance of the members of the profession in the important object of studying the natural history of entozoa. “Argus” could scarcely do us greater service than by sending us any specimens of entozoa he may meet with in unusual situations within the bodies of animals, and, if it be possible, we should, above all things, like to have some of the worms in question. Have any of them been preserved?]

RETROSPECTS OF VETERINARY PRACTICE.

By “MENTOR.”

I. RUPTURE OF THE ŒSOPHAGUS IN A FOAL.

A FOAL about three months old exhibited symptoms which the owner considered arose from the presence of a foreign body in the gullet, for which my attendance was requested.

The symptoms were considerably augmented and alarming when I arrived. Pulse imperceptible; respiration laborious, short, quick and catching; cold perspiration bedewed the entire surface of the body; countenance deeply expressive of pain; mouth cold and clammy; breath fetid, and a fluid discharge escaped from the nostrils, principally composed of grass and its colouring matter; the animal pawed much with the fore feet, and violently threw his head from side to side, and towards the ground; frequent attempts were made to eructate, as he stood propping his haunches against a corn-bin. After a time he would rush violently forward, and fall within a few paces as if in convulsions.

A large puffy swelling existed upon each side of the neck along the trachea, that on the right extending from the shoulder upwards about four inches, and terminating at a point opposite to that on which the left or superior swelling existed; it was not quite so large, but nevertheless reached to the throat. The character of these tumours were soft and yielding, leaving the impression of the fingers, and rising in other portions when touched, having the sensation of crepitation similar to that of tissue paper beneath.

The owner felt confident that a portion of swede turnip was the cause, and stupidly insisted upon having the probang passed, notwithstanding my assurances to the contrary and the consequences of so doing. However, it was done, the instrument passing easily down, but greatly increasing the severity of the symptoms.

From the evident nature of the injury little good was expected from any kind of treatment, but as a means of relief the trachea was opened between the swellings, which had the desired effect, and gave exit to a frothy pultaceous mass which was beneath the skin, consisting of masticated hay, grass, &c., greatly reducing the general size of the tumours.

The symptoms were at length lessened in their severity, but no hopes of recovery apparent; still the owner, seeing the animal swallow a morsel of hay, gathered courage, and gave me credit for seeing farther into the case *at first sight* than himself; but in *this* instance formed conclusions as to his own superiority.

In passing through the village early next morning, my patient having died in a short time after I left the previous day, I found the body divested of his integument, except at the neck, awaiting an examination. The skin being reflected on each side from the trachea, showed that tube was separated nearly its whole length down the neck from its relations by the presence of half masticated food. Effusion of lymph

in consequence had taken place to a great extent, and a state bordering on gangrene within the muscles existed. The gullet, which accompanied the trachea in its separation, was empty and collapsed, having a rupture extending about three inches along the middle third, at the posterior portion, the edges of which showed that the injury had not been confined to the day on which my attention was directed to the animal. The quantity of food within the spaces also proved that the rupture must have existed some time, and this appears to be corroborated by the evidence afterwards obtained.

About a week previous the animal was shut up in a stable alone, whilst the dam was taken to work, and as might be expected was very uneasy, screaming and jumping towards a hole—an apology for a window, common to English farm stables—having one of those “hit or miss” slides. The day before I saw him, symptoms of dulness came on; he had been before noticed unwilling to suck when the dam came home, but still chewed grass, &c. The swelling also increased remarkably from this time.

In the oak bar forming the bottom part of the *hole* was a large iron spike, standing out four inches at least, the head of which was covered with hair from the animal, and I have no doubt this was the cause of the rupture, for he had been known to eat at the manger, and afterwards to rush towards the place when he heard anything outside, when, the gullet being probably distended by food passing down at the time, a violent concussion took place against the nail, favouring the injury. The action of the muscles of the neck, in the acts of apparent eructation as witnessed, under the effects of the presence of a foreign body, will account for the accumulation of food, separation and effusion, with their consequences.

2. CHRONIC EPISTAXIS.

A gray mare, eight years old, fifteen hands three inches high, of good form and proportions, whose daily work was “cabbing,” had suffered from a discharge of blood from the nostrils, particularly the left, for several months.

The animal was lean, nevertheless did her work well, and consumed the food allowed with a good appetite. After some days’ rest the flow was increased, but when she was regularly worked the quantity lost per diem would probably amount to five or six ounces. In the stable it subsided to about half the quantity.

My opinion as to a probability of cure was solicited on account of the valuable services of the creature, although a

professional friend had given up the case as hopeless, after a trial during three months of laxatives, purgatives, astringents, and various forms of injections.

After a careful examination, and knowing the results of the previous trial, I resolved to take the mare to my establishment for treatment, feeling strongly that the whole of our resources were not exhausted.

Several medical friends to whom I mentioned the nature of the case intimated their intention of seeing my patient, and wished me to try the effects of remedies they would suggest; and being open to anything productive of good, and desirous of information, I readily consented.

The leaves of *Artanthe elongata* (Matico) were finely powdered, and sharply blown up the nostrils, by means of an ebony instrument not unlike a pipette, the bulb being made to unscrew to admit of the powder. One end was small, and would allow a knitting needle to pass in, the other for the mouth, was like the mouthpiece of a bugle.

From the first I felt satisfied of the inefficiency of this treatment, believing the bleeding orifices to be too high up, beyond the reach of such remedies; nevertheless, for the establishment of a sound opinion and doctrine, and at the desire of my friends, I steadily persisted, and each day noted progress.

A fortnight elapsed; no progress was made, the blood hung in long twig-like strings, coagulating as it flowed, and reached sometimes near to the ground, irritating the animal. To get rid of this, the walls of the loose box and her body were bedaubed, presenting a spectacle not very sightly.

Creosote and tannic acid were also used for a great length of time as injections, but with no good resulting. Next creosote was given internally; still no amendment.

Turpentine was then seized upon, my friend losing no opportunity of being loud in his praise of its effects in hæmorrhages. I suggested the probability of its inertness in this case, from the long-standing nature of the malady; but having previously promised obedience, had no alternative but to "*do as I was told.*"

Four ounces, morning and evening, were fixed upon to commence with; oatmeal and water being chosen as the vehicle.

After four or five days a third dose was added at noon, and continued for a like period.

By this time the loose box had gained the most penetrating odour of the drug, and the bowels were relaxed; the conjunctival and other membranes being injected, and slight un-

casiness having occurred, and the pulse also increased, the medicine was discontinued for a few days, but the discharge of blood was not one whit the better.

At the end of a week, six ounces of turpentine were given three times a day, and continued for several days, with a recurrence only of the former symptoms, but no abatement in the disease.

During the use of the turpentine the appetite became impaired, but the mare drank about as usual; still, with all the doses given, the kidneys were not inordinately aroused.

Plugging, cold water, ice, &c., were now spoken of, but deemed more or less too difficult of application.

Entertaining an idea that want of tone was the principal cause, I resolved to try the effects of a course of tonics, combined with astringents, given internally, and selected for this purpose iron and gentian, with tannic acid—the latter on account of its well-known effects on mucous membranes, and believing the discharge arose either from the turbinated bones, as it was arterial blood, or the sinuses.

The symptoms of improvement were speedily manifest under this treatment. The appetite was excited, condition gained, and daily the discharge grew less, the animal also becoming cleaner. A substantial diet was given in lieu of clover, which only had been previously allowed by the owner, and in ten days the nostrils were free from blood. The visible membranes had in the meantime, from the action of the astringent, become pale and blanched, scarcely a vessel being recognised in them; the bowels were costive, the mouth dry and parched, the skin hot and rough under the hand.

With these symptoms before me I felt that the arrest was only of a temporary character. I therefore continued the iron and gentian without the acid, expecting daily to see the original symptoms returned when I entered the stable. In this I was, however, agreeably disappointed. The mare was now sent to work, and continued all right for several months, when, on being excessively galloped one day, a slight trickling from the nostrils came on; but this gave way under the same treatment.

She was soon afterwards sold, taken from the neighbourhood, and I lost sight of her.

3. HÆMOPTYSIS AND TUBERCULOSIS.

A brown cart-horse, nine years old, sixteen hands high, was sent to draw a load of coals a distance of two and a half

miles. When he reached a rising part of the road, he attempted to cough, and as the man expressed himself, "looked as if he had something in his throat, which he couldn't get up."

At length he stopped, when a violent fit of coughing ensued, and clots of blood were expelled, together with a large quantity from the mouth and nostrils in a fluid state.

The symptoms were distressing, and the man loosed the animal and brought him home, when a messenger was immediately despatched for me.

I found the horse standing perfectly quiet, the bleeding having subsided; pulse thirty and weak, ears cold, legs not quite so, coat staring, appetite defective, bowels costive and alternately relaxed. In answer to inquiries I learned that he had not been observed to lie down for six weeks;—the time he had been under the care of the present attendant. He has been heard to cough but seldom, groans when he turns round, abdomen is tucked up, respiration only partially heard in the right lung, pain on intercostal pressure, visible mucous membranes pale, mouth moist and cool, great depression, staggering gait, and stiffness of the extremities.

Previous to the time above named, my patient had been lent to a farmer conspicuous for his team of skeletons, under whose care the foundation of the disease in question was laid.

By appropriate treatment a marked improvement was effected, and shortly the horse was pronounced able to do light work.

I saw no more of the animal for the space of six weeks; during which time the owner, not having sufficient work for him, lent him to a brewer, by whom he was sent out in all kinds of weather, at all hours, and eventually sent home because he was not fit for work.

I was again requested to see him, and observed the following symptoms:—

Pulse sixty-eight, full and rather strong; respiration accelerated, short and laboured; abdomen tucked up; mouth hot, ears and legs temperate; conjunctival membranes pallid; eyes half closed; Schneiderian membrane dirty pink colour, with a thin nasty discharge of mucus hanging about the nostrils; breath extremely offensive; bowels irregular; condition low; coat staring and unthrifty; staggering gait, and total loss of appetite.

Upon auscultation the left lung was found to be pervious at the base and middle portion only. In the right no respiratory murmur was heard, but a sonorous gurgling sound,

interrupted at times, and terminating in a hissing sound at the expiration.

Percussion also denoted the extreme state within, and gave rise to a cough which was feeble, hollow, and weak, with an expectoration too characteristic to be forgotten; no appetite, and diabetes present.

I informed the owner of the nature of the case, and advised him to have the animal destroyed, to which he consented.

Autopsy.—Abdominal viscera pale and flaccid, especially the stomach. The liver resembled the spleen in colour, and exhibited a kind of fracture when torn; large clots of blood rolling out, and the capsule thickened. The spleen was similarly affected. The kidneys were rather paler than natural, but of normal size; when cut in half they resembled cartilage more than anything else, and contained spots of calcareous matter. The tubes were thickened and secreted a creamy fluid. The left kidney was by far the worst, the pelvis being plugged with lymph. The intestines contained but a small quantity of fluid; the mesenteric glands were swollen and contained pus. The left lung was considerably congested; the right hepatized, gray hepatization prevailing in the centre, and having abscesses, a few of which contained small lumps of calcareous matter diffused in a creamy fluid. The membranes of the bronchi were thickened and secreting pus; the pleuræ also were thickened and opaque, and calcareous bulbs or knobs existed in glandular-shaped bodies at the base of the heart.

4. ANASARCA, DEPENDING UPON HYPERTROPHY OF THE HEART, AND DISEASE OF THE KIDNEYS.

The subject of the above was a bay horse used for farming purposes. My attention being requested in consequence of a loss of appetite, failing condition, and unthrifty appearance, with œdematous swelling of the breast and abdomen, which had been allowed to proceed unattended for six weeks. As my patient was aged (about nine or ten years), of a coarse shape and breed, with heavy head, drooping ears, and hanging lips, his appearance was not at all improved by the following symptoms:—

The anasarca extends from the point of the sternum anteriorly, along the pectoral and abdominal muscles to the sheath, which is unusually swollen and pendulous; the coat stares, and the condition is very defective; there is a general equalisation of temperature of the body; the visible,

mucous membranes are about natural in colour; the mouth cool and moist; the pulse 36, full and compressible; constant borborygmus is present, and constipation of the bowels, alternating about every twenty-four hours with diarrhœa. There is likewise a constant disposition evinced to turn across the stall and stretch at full length, in which position he would stand for a considerable time, pawing with the fore feet, *principally the near foot*; at other times he would lie upon his side, with his legs straight out, groaning as if in pain, and afterwards roll as in indigestion.

It was little that I could learn in addition from the attendant, and although I felt convinced of serious changes going on within, of what precise nature they were I could not determine.

I had him led out, when he appeared weak and staggered in his walk, dragging his hind limbs in a careless manner after him, one sometimes coming in forcible contact with the other. Auscultation furnished but little information, but *I thought that a peculiarly forcible action of the heart existed*. The sound was dull, and appeared the result of a more than usual muscular contraction, in which an apparent preparation took place for the accomplishment of the ordinary beat. Thinking such might arise from irritability, as the animal was very nervous when led out, dependent upon some organic disease, I did not pay so much attention to this symptom as I have since felt in justice should have been done; however, I was convinced that little could be expected from treatment, and informed my friend the owner so, who immediately placed the animal under my care, although more for experiment. I commenced by giving a draught consisting of—

Ol. Lini, ℥viiij;
Spt. Ammon. Aromat., ℥j;
Tr. Opii, ℥j.

This had the effect of bringing about a regular state of the bowels. My patient evincing a desire for food, hay tea, good oats, &c., were supplied, of which he partook satisfactorily. The exhibition of opium and catechu, with vegetable tonics and diuretics, followed for two or three days, during which my attention was called to other cases of urgency, which prevented my seeing him. On my return, however, I found that, although the appetite had increased, all the other symptoms were of a more formidable character. The chest, abdomen, hind legs, and sheath, were intensely swollen, the

latter hanging within a few inches of the ground; the abdomen was enlarged, and, together with a loss of condition, the animal had a strange pot-bellied appearance; the pulse had risen to fifty-six beats in the minute, and was weak.

I now suspected disease of the liver or kidneys, and accordingly scarified the swellings. Making further inquiries as to the state of the urine—of which previously I could gather no account—I was now informed “*it was not right.*” Orders were left to collect some for examination.

Mustard embrocations were applied to the loins, and Potassii Iodidi given internally.

Next day a quantity of urine, measuring about a pint, was brought to me, which exhibited the following characters:—

Sp. gr. 1.60, slightly acid to test-paper; colour a dark red or brown, not unlike boiled linseed oil, which it also resembled in viscosity. The usual chemical tests revealed the presence of pus and biliary matter in the secretion, which, after standing at rest for some hours, deposited a thick sediment of matter, that occupied the bottom of the vessel to the height of two inches, but which on agitation freely mixed with the fluid.

No alteration was effected either in the symptoms or the character of the urine by the treatment, in fact, daily the former indicated rapid dissolution. The weakness of the loins increased; the animal almost constantly lay down, groaning as before; the swellings were, however, removed, and appetite tolerable; but the borborygmus and alternate diarrhœa were worse than ever, with offensive evacuations, and after suffering complete paralysis for twenty-four hours, death put an end to the scene.

I regret the *post-mortem* examination, which was made about six hours after death, was not productive of greater satisfaction; for the man appointed to open the animal, in a fit of drunkenness, had so sadly mutilated the various viscera, that a perfect state of their diseased condition could not be ascertained.

The intestines contained fluid only, and in places the peritoneal surfaces were ecchymosed. A few bots clung to the inner coat of the stomach. The kidneys were about the natural size, but lighter in colour; the uriniferous tubes thickened, and the pelves contained pus. The liver was not seen entire; that portion which was brought was congested and disorganized.

The lungs were healthy, and the heart in appearance was *double the normal size*, but it was greatly augmented from the mutilation it had received. I could detect no dilatation

of the ventricles. All parts appeared to be correspondingly enlarged.

There was a small quantity of serum in the abdomen.

The bladder I did not see, it having been thrown away before I arrived.

FRACTURE OF THE SESAMOID BONE.

By D. B. HOWELL, M.R.C.V.S., Reading.

As fracture of the sesamoid bone is of very rare occurrence, I forward the particulars of a case presenting several peculiarities which I recently met with.

About two years since, as J. J. Blandy, Esq., Highgrove, was out with the South Berks hounds, riding an aged brown gelding, the beau-ideal of a first-class weight-carrying hunter, they ran very fast across a turnip-field, in which the roots were very large, when the horse forcibly struck the near pastern against one of them, but it did not impede his course in the slightest degree.

The next morning he was very lame, and, after preparation, the joint was well rubbed with a powerful liquid blister.

He was not hunted any more that season, and being summered was again prepared for the chase. The first time he was hunted he went very fairly, but on the second occasion came home extremely lame. The pastern-joint was now enlarged all round, but no injury could be detected to the sesamoid bone, or, in fact, any other part of the leg. On January 13th, 1863, I fired him, and applied at intervals the Ung. Hydrarg. Biniod. At the commencement of the present season he went nearly free from lameness, being shod with a shoe gradually thickened from the toe backwards.

On the 9th of December he was hunted for the first time, the meet being at Basildon, about eight miles from here. In jumping on to a bank, about six feet in height, his owner noticed he gave a peculiar grunt on landing, but he did not appear affected by it, and his rider was perfectly satisfied with his day's performance.

He was brought quietly home, ate his food, and left comfortable for the night as usual. The next morning he was exercised (walking only) and returned to his box. In the evening I was sent for, and found him apparently suffering

from tympanitis, but not evincing anything like the pain usually met with.

I left him about 1 o'clock much easier, with directions for frequent enemata to be given. The medicines I employed were—

Ol. Lini cum Liq. Ammon. Acet. et Tinct. Opii.

11th, 7 o'clock a.m.—He had freely urinated during the night, but nothing had passed *viâ* rectum, nor had the injections been expelled. Gave—

Sol. Aloës, ℥iv ;
Tiglii Ol., ℥xx ;
Antim. Pot. Tart., ℥iss.

A slight weakness in the loins was now apparent.

10 o'clock a.m.—Restless, but still not violent. He was down, lying on his side, and on endeavouring to get up he could only sit on his haunches, paraplegia having now attacked the posterior quarters. Gave—

Ol. Tiglii, ℥xx ;
Antim. Pot. Tart., ℥iss.

7 o'clock p.m.—I now called in the assistance of Mr. W. A. Wheatley, M.R.C.V.S., Reading.

Our patient was now on his legs, having a lull in the more prominent symptoms, but the paralysis had increased. We applied a hot sheep-skin to the loins, and as the bowels had not yet responded, gave—

Sol. Aloës, ℥vj ;
Tr. Opii, ℥ij.

Continue the enemata.

11 o'clock p.m.—He urinated freely, but the urine was rather offensive.

12th, 9 o'clock a.m.—Animal in a state of profuse diaphoresis. I removed by the hand a small quantity of pultaceous feculent matter from the rectum, and being now in hopes of a passage, medicines were discontinued, but the enemata to be still employed. After a time he became tranquil, and we left.

4 o'clock p.m.—Worse. The paralysis had now extended throughout the whole system, the breathing was very laborious, and he evinced greater pain. The bowels were still dormant, and the last four injections returned uncoloured.

His owner, having been away from home since Wednesday, had not returned, and on my acquainting him with

the unfavorable state of the animal, consented to have him destroyed, which I did with hydrocyanic acid.

The following morning I made a *post-mortem* examination, first removing the off shoulder and the ribs on that side. On tracing the intestines, nothing abnormal was met with until arriving at the colon, where about five inches of that bowel had protruded through a rupture of the mesocolon two inches in width; there was only a slight blush of inflammation in the protruded part. Anterior to it the ingesta was very liquid; posteriorly, the pellets were hard and entire. The near kidney was highly congested, the other not. The heart was large, but healthy, as also the liver; the lungs bore traces of the poison given.

On removing about eighteen inches of the spinal cord contained in the dorso-lumbar vertebræ, I found the enveloping membranes much congested, but not the substance of the cord itself involved. Examining the near fore leg, I found the suspensory ligaments, the perforans and perforatus tendons, perfectly healthy. The capsular ligament surrounding the pastern-joint was thickened to about three times its normal state; the outer sesamoid bone was entire, but the inner one was broken into five irregular pieces.

The structure of the bone was entirely changed, and the whole articular surface, with the exception of a small portion about the size of a pea, destroyed. The surfaces made by the fracture showed marks of slight attrition, and were much denser than the bodies (if we may use the term) of the parts not exposed to this trifling motion. No portion was in the least displaced, separation not taking place until the ligamentous connections had been removed. The articular surfaces of the pastern-joint contained some small grooves from before backwards, as though grit had been introduced, but these appearances were obliterated in boiling. The pedal bone was very spongy, and had ossification of its inner lateral cartilage.

Having thus far described the case, let us inquire when the sesamoid bone was broken. My opinion is that it occurred when the horse struck against the turnip; and the bone being broken in such a manner that no bony spiculæ were detached to work through the surrounding parts, and crepitus being prevented by the powerful force of the encircling structures, will account for the mischief not being discovered during the animal's lifetime. Again, if the fracture had not taken place until after the exfoliation of the bone, then the broken edges would have been equally soft with the other parts.

In the *Veterinarian*, vol. iii, Mr. Fuller, of March, records a case of a horse being destroyed for rupture of the perforans and perforatus tendons of the near fore leg, the sesamoid bone being found fractured in a transverse direction. No mention is made of any crepitus being detected, but probably, as the horse was at once destroyed, this was not noticed.

Vol. v also contains a report of a case by Mr. Harris, of Preston. The horse was galloped rapidly about 100 yards, when he fell, and was with difficulty got to his stable, about two miles away. There was considerable swelling in the off fore leg, the fetlock nearly touched the ground, and on the animal's attempting to walk great pain was evinced. A slight crepitus could be felt, but not the exact seat of mischief.

Mr. Harris considered it a hopeless case, but the owner would have some treatment attempted. The horse was bled and physicked, and cold lotions and bandages applied to the part. Two days after, bony spiculæ protruded, and he was destroyed. The inner sesamoid bone was found shivered to atoms.

In this case I consider that either the perforans and perforatus tendons, or the suspensory ligament, was severed to account for the fetlock nearly touching the ground.

Mr. Blandy's horse did not fall, neither were the tendons or ligaments injured; the swelling was inconsiderable, and the foot was slightly rested.

What may we consider was the exciting cause to produce the paraplegia?

The horse had been hunted for the first time, but he had been carefully prepared and had daily exercise, was not ridden hard, nor exposed to cold or wet, or fell or cast, or rolled in his box. Turning suddenly round to follow another horse, and perhaps making at the time an unconscious movement, might have caused the injury, as it was then he gave the peculiar grunt. Or was it now that the rupture in the mesocolon occurred?

In all cases of obstruction of the bowels, whether arising from calculi, polypi, intromission, &c., we find the pain most excruciating; but in this case it scarcely amounted to more than uneasiness, although, if disease had been allowed to run its whole course, most likely the pain would have been increased as death approached, because at the time I gave the prussic acid he was suffering more than he had at all before.

Perhaps the slightness of the pain may be due to the

diseased state of the spinal cord, by which the supply of nervous force to the parts was curtailed, for it is well known that to destroy a nerve all sensation is destroyed with it.

The small quantity of soft feculent matter (a small handful) which I removed from the rectum was broken down by the action of the enemata alone, as the dung-balls were hard close up to the obstruction.

Facts and Observations.

PARASITIC DISEASE OF POULTRY TRANSMISSIBLE TO MAN AND ANIMALS.—Our readers are aware that from time to time the pages of the *Veterinarian* have contained accounts of skin disease in the horse, produced by near location to poultry-houses and hen-roosts, and that it had been ascertained that this affection was due to parasites which found their way from the birds to the horse. It was, however, a matter of conjecture as to whether *lice* or *acari* were the real cause of the malady. Poultry, as is well known, are often affected with lice to a very great extent, and frequently also with acari; but it is not so generally known that no less than *four* varieties of lice attack these birds, and that one of them in particular—the *Menopon pallidum*—possesses remarkable migratory habits. From this cause, many authors inferred that it was this louse which gave origin to the disease of the skin of the horse, while others were of opinion that it depended upon the ordinary acarus of poultry. Investigations into the subject have recently been made in France, by Professor J. Reynal, of the Alfort Veterinary School, and Dr. Lanquetin, who seem to have satisfactorily proved that neither *Menopon pallidum* nor any other louse, nor the common acarus, is the cause of the malady; but that it is due to a *special* acarus, one which was discovered by M. Ch. Robin, and named by him *Sarceptes mutans*. This acarus, it appears, burrows in the scarf skin of poultry, attacking chiefly at the commencement the comb, the legs, and the upper part of the beak, where it produces an allied disease to scabies of man. In time the parasites extend to other parts of the body, and the entire skin of the bird becomes

involved in the disease. From the scratching of the bird, acari are dislodged, and if by chance they fall upon the horse, or are otherwise conveyed to his skin, they immediately commence their instinctive habits of obtaining food by burrowing in the epidermis, and thus become the direct cause of transmitting poultry scabies to this animal. MM. Reynal and Lanquetin enter into full particulars of the indications of the disease as existing in the bird, with a view of combating it at its commencement, and thus preventing its extension either among the poultry or other animals.—See *Annales de Médecine Vétérinaire*, Feb., 1864.

DISEASES OF CATTLE.—VETERINARY INSPECTORSHIP.—AT a meeting of the Town Council of Exeter, held on Feb. 10th, a memorial was presented from several farmers, praying for the appointment of an inspector to prevent the introduction of diseased cattle into the market. The question, after some discussion, was referred to a committee.

SUPPRESSION OF HORNS.—M. Charlier has introduced an operation for the suppression of the growth of horns of cattle. He says, in the early period of life, when the rudiment of the horn begins to appear, it may be resorted to without any danger or expense, as the owner of the animal may himself operate. The instrument to be used is a kind of trephine—a small cylinder of good steel, having a sharp cutting-edge at one end, and a point at the other. This instrument is placed around the young horn, bearing sufficiently on it to cut through the skin and subjacent tissue at the base of the horn, and then everting the soft horn, which offers no resistance. The wound heals in a few days afterwards, without suppuration, and generally without any febrile symptoms.

[The above operation was advocated at a late meeting of the West of Scotland Veterinary Medical Association, by Mr. Wilson, of Donne (see page 125), but condemned by the president and others as likely to come under the designation of cruelty to animals.]

CONDITION OF DIFFERENT PORTIONS OF THE BLOOD-CORPUSCLES.—Mr. Lionel Beale says that in man and in mammalia there are circular, coloured corpuscles, without a nucleus, and the so-called white or colourless corpuscles, which are spherical. He believes that the colourless corpuscles, and the colourless nuclei of the red corpuscles, consist of matter in a living state, while there are reasons for

the conclusion that the coloured material has ceased to exhibit vital properties. "The red material is not living, but results from changes occurring in colourless living matter, just as cuticle, or tendon, or cartilage, or the formed material of the liver-cell, results from changes occurring in the germinal matter of each of these cells. The colourless corpuscles, and those small corpuscles which are gradually undergoing conversion into red corpuscles, are living, but the old red corpuscles consist of inanimate matter."

ACTION OF OXYGEN ON ANIMALS.—MM. Demarquay and Leconte have ascertained by experiment that a dog might inhale thirty or forty litres of oxygen gas with the effect only of increasing his appetite and spirits. Further, that the respiration of this gas, up to a certain amount, produces a remarkable beneficial action on large wounds which they made on animals. Also, that nearly two litres of oxygen may be injected into the veins of an animal without killing it.

All this only goes to prove what was known long ago—that oxygen has the property of exalting the vital powers.

DISEASES AMONGST CATTLE.—Accounts from Lausanne state that the disease of sore mouth and sore feet has attacked horned cattle in Switzerland in a terrific manner. The Executive Council have consequently commanded that no more cattle-markets shall be held. A strict watch is set upon all farmyards where the disease prevails, and upon those within a hundred yards of them. Cattle in the suspected farmyards are not to be permitted to drink at the public fountains. All strangers are forbidden to approach any farmyard, nor is any mendicant to pass the night there. Veterinary surgeons and police agents are desired, when they quit an infected stable, to wash and change their clothes before they enter another. Farmers are to adopt similar precautions when they attend a fair or market.

NEW STYPTIC COMPOUNDS.—Two powerful styptics have lately been introduced. One consists of one part crystallized perchloride of iron dissolved in six parts of collodion. The union is to be effected slowly and carefully. After the application of this compound to the bleeding vessel or wound, an elastic pellicle is formed over it.

The other consists of equal parts of a concentrated solution of chloride of iron and chloride of iodine. Lint saturated with this is to be applied to the bleeding wound.

THE VETERINARIAN, MARCH 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE PROVINCIAL VETERINARY MEDICAL ASSOCIATIONS.

It is exceedingly gratifying to us to record the admirable beginnings of our provincial medical associations. They are harbingers of good, germs of onward progress, and adumbrate what the profession may become, nay, *must* become, if the members be only true to themselves.

The inauguratory addresses evince an earnestness of purpose and intention which is more than hopeful. We have perused them with pleasure, and hereafter they will be referred to on account of their containing, not only an outline of what is anticipated to result from these meetings, but much that is suggestive. We are glad, also, to perceive that it is not intended that the meetings of the associations shall always take place in the same town, but other towns of importance in the county are to be from time to time selected. This will prove conducive to the maintenance of a friendly feeling, as well as tend to the greater acquisition of knowledge and its diffusion, since different localities are oftentimes productive of diseases that are rarely met with in others; an account of which cannot fail to awaken interest, and to prove mutually profitable.

We have said there is much that is suggestive in the addresses. We need not particularise, as we are sure they will have been read by the members of the profession with equal satisfaction to ourselves. A few salient points we may, perhaps, be permitted to advert to. Mr. C. Hunting, President of the North of England Association, sensibly observes that “amongst the foremost objects of provincial veterinary medical associations is unquestionably the investigation of *epizootic* and *enzootic* diseases, not only with a view to the adoption of the best modes of treatment to

combat their effects, but more particularly to the employment of the necessary means for the prevention of their spreading and reappearance; or, when this is impossible, the adoption of such measures as shall reduce their fatality or deteriorating consequences to the minimum point." With these observations we must heartily concur; and we also perfectly agree with him when he asserts that "the study of hygiene is of far more importance to the veterinary surgeon than the study of therapeutics, for surely there is much more true philosophy and more noble scientific research in the prevention of disease than in the cure of it;" albeit many may not be inclined to assent to this, they thinking that the province of the veterinary surgeon is solely the cure (so called by them) of diseases, which is a mistaken view of their duties, or, at any rate, this is only a part thereof. Science, philanthropy, and the general weal, demand a more liberal and extended application of their talents. We would only under this head suggest that a statistical account of these diseases be carefully registered, with all the facts obtainable in connection with them. Particularly should those maladies that are sporadic in their nature receive attention, and their peculiarities be noticed. By these means will the archives of veterinary medicine be both enlarged and enriched.

The proposition made by the Secretary of the West of Scotland Association, Mr. A. Pottie, meets, too, with our warm approval, namely, that "a portion of the funds of the society should occasionally be applied for testing the value of certain medicines, or proving the truth or error of cures said to be effected, either surgically or otherwise. . . . Agents not possessed by many, as single individuals of the profession, might be procured at the society's expense, and a trial made of them, more especially as we read at times, in our monthly publications, of new methods of treatment, methods which often are, without doubt, of much practical utility."

Allied to this is the suggestion of Mr. E. C. Dray, President of the Yorkshire Veterinary Medical Society, "that for the general use of the members the more expensive

books, instruments, and apparatus be obtained—those only occasionally required, such as lithotomy instruments, inhalers (should any be desirous of employing them), instruments for extracting teeth, &c.” The appropriation of the funds for such purposes as these we should consider perfectly legitimate, while the benefits resulting to the members would be great, since expenses fall heavily on an individual that are scarcely felt by a body.

Not the least valuable sources of information will be the papers read by the members; whether to be given publicity to or not, we presume will rest with their respective authors. By them scientific truths will be brought into order and usefulness, as they necessitate research. They are, likewise, acquired almost imperceptibly, and are at the same time indelibly impressed on the mind. More especially is this the case during the discussion that follows, when facts are elicited which otherwise would lie entombed, or only come forth fitfully and disconnected. Details are likewise given that might be altogether unnoticed; yet these frequently are of much moment, and render explanations, either of cause or effect, comparatively easy.

We need not say that the discussions should ever be perfectly free and unrestrained. We feel sure that the amenities of society will always be observed. Thus will these associations become so many centres of union, each member provoking the other to works conducive to the advancement of the profession. Politically, it is said to be suspicious when, instead of talking about what *is* to be done, we “rest and are thankful” with what has been done, as this implies that nothing more remains to be done. So it is with science—it indicates indifference, which indulged in would in the present day leave us stranded.

All who know us know we are no friends to inaction. We are also friends to union, and we have just said these associations will form so many centres of union, and, although at the risk of being charged with unnecessary repetition, we again revert to the subject of unity. We want not uniformity; we do not believe in it. We have before said, men cannot any more be made to think alike than they can be made

to grow alike. In nature we find oneness and yet diversity. All the planets have not the like satellites, nor do they move in the same orbits round the sun; yet they form one solar system. The light that gives colour to all bodies, and renders them resplendent, is in itself white, but by the prism it is proved to be made up of many colours. All the compound substances we know of are constituted of a few out of rather more than sixty elementary bodies, these being combined in different proportions; and it is stated that in the vegetable kingdom there are 80,000 different plants, and a far greater number in the animal, which go to make up these two grand natural divisions, in which there are, nevertheless, order and union to be seen, not only in the adaptation of each to its location, but also in the interlinks. We only wish for a bond of cohesion to exist, so that we might work amicably together in the temple of science, using no untempered mortar, and none daring to assume supremacy or undue authority over us. All this may be very trite, but we are sure that it is only by union we shall be able to present a front against which the empiric and the pretender may hurl their missiles in vain, and thus take our proper status in society. May it soon be said "*Venit hora*"—"the time is come."

Not that we object to differences of opinion, however boldly they may be advanced, provided always this is done courteously; since the more truth is questioned and investigated, the more convincing and enlightening it becomes, as the higher a torch is lifted, and the more it is agitated, the greater light it gives. Indeed, very frequently the greater amount of good is derived from these mental antagonisms, as truths are often struck out by the clash of contraries, and passions become the elements of life. Seeds will lie in the soil buried for ages, but brought to the surface of the ground, and exposed to the vitalizing influence of light and air, they germinate and grow; so facts may be reserved, and be almost useless to the possessor of them, unless communicated to others. We are under no apprehension as to the consequences some say will result from this free interchange of thought and ready communi-

cation of information. We do not believe that it would prove detrimental to our interests, but, contrariwise, advance them. We hold it is a narrow mind that would endeavour to prevent or restrain it, and the arguments advanced in favour of doing so we believe to be untenable. Mr. Dray has well said, "The sun, although it is constantly imparting to other bodies heat and light, never diminishes in splendour;" nor does the fountain lessen in its supply of water on account of the vessel it fills.

"Imparted knowledge doth not diminish learning's store."

Elihu Burritt has stated that the present age is truly one of association. Never before could the social principle have been seen working so perceptibly throughout the world of mind, matter, and motion. And in each of the three great domains its operations can at a glance be noticed in action, with all its reflex and combined movements. There can be no questioning the fact that unions such as these being referred to tend to enlarge and liberalise the mind, and to remove jealousies which otherwise too commonly arise between individuals of the same profession, while the benefits derivable from them are seen in the engendering of a friendly feeling that is reciprocated by the many, and by which the knowledge of all becomes increased. The domain of science is broad and comprehensive; its culture therefore calls for the employment of numerous votaries, all of whom derive profit according to the amount or degree of their labour, not the least of which is the awakening of sentiments that bind man to his fellow-man—sentiments of friendship and good will. Invidious distinctions become lost in the desire to advance the common interests of all, and an impetus is given which must eventuate in the obtainment of the object each has in view, namely, the advancement and elevation of the profession of which he is a member to that position which its importance demands. Nor will the public be slow to recognise the efforts thus made, and especially will the scientific portion thereof hail them with delight and an expectation of augmented good resulting. We are of opinion that few will

ever attend the meetings of the different associations without being advantaged by them. They will become both wiser and better men, and the impressions they receive will be communicated to others, so that in the end that cordial union will be brought about which is in every sense a desideratum. We consequently view this movement on the part of our professional brethren with much satisfaction, commend them highly for taking the initiative in their several localities, and wish them every possible success. Moreover, we have the gratification of knowing that they will not long stand alone. We have been informed of efforts being made in other counties to form similar associations, and we rejoice in the knowledge thereof. As progress is made, we hope from time to time to be privileged to record it. Our pages shall ever be open to receive their reports, convinced that they must tend to the promotion of that which we have so long advocated, and from which rich and abundant fruit cannot fail to be derived. Hitherto too much indifference has been manifested, and an apathetic spirit, almost amounting to torpidity, has crept over the body, which we think we perceive some signs of being now thrown off. Some coruscations of the silver lining of the cloud are being emitted which we accept as bright precursors of the future of the profession. It is time it should be so. May all, and more than all that we anticipate, be realised.

Extracts from British and Foreign Journals.

THE LATE OUTBREAK OF SMALLPOX IN SHEEP.

TESTIMONIAL TO MR. JOSEPH PARRY.

OUR readers—especially those who are flockmasters—will not have forgotten the extraordinary and virulent disease, called smallpox, which made its appearance amongst the flocks in the neighbourhood of Devizes during the summer of 1862. It was a disease which created great alarm at the time

—the more so because it was entirely new in this part of the country, and because its appearance in proverbially one of the most healthy flocks in Wiltshire could be accounted for by none of the known means by which such diseases are usually communicated.

The flock in which it first broke out was, as is well known, the property of Mr. Joseph Parry, of Allington, near this town. Seeing his sheep sicken and drop off, one after another, by a loathsome disease which no person in this neighbourhood could understand, Mr. Parry determined at once to seek the advice of Professor Simonds (the great authority at the Royal Veterinary College). He accordingly went to London, and brought the professor back with him to Allington; and we believe we may say that it was entirely owing to the promptitude which Mr. Parry thus showed, and the care which he exercised throughout to prevent contamination with his neighbours' flocks—added to the efforts of an excellent association which was afterwards set on foot—that the arrest of what threatened at one time to spread ruin amongst the flocks of Wiltshire is to be ascribed. The result, however, was, as many of our readers know, a loss of something like £1000 to Mr. Parry; and it was as an expression of sympathy on the part of his friends, and to mark their sense of his honorable conduct on the occasion, that a testimonial was some time since set on foot. The response to the movement will be best understood when we say that in a very few weeks upwards of £120 was subscribed, and Thursday last, February 4th, was the day appointed for the presentation.

At least fifty persons were present on the occasion, including Mr. Brown (Avebury), Mr. Brown (Horton), Mr. T. Brown, jun., Mr. Grant (Manningford), Mr. S. Hitchcock, Mr. Brown (Hazlebury), Mr. W. Ferris, Rev. G. T. Ward, Mr. S. R. Neate, Mr. W. Plummer, Mr. R. Coward, Mr. W. Long (Devizes), Mr. A. Giddings, Mr. J. Wentworth, Mr. C. Giddings, Mr. Sloper (Bishop's Cannings), Mr. M. Sloper, jun., Mr. Cockram, Mr. F. Stratton, Mr. N. Wentworth, Mr. J. Edwards, Mr. A. Baden, Mr. T. Simpkins, Mr. W. P. Hayward, Mr. W. P. Hayward, jun., Mr. H. Puckeridge, Mr. W. Treen, Mr. Jno. Tanner, Mr. Pearce (Haxon), Mr. Jos. Stratton, Mr. J. Young, Mr. W. Young, Mr. Arnold, Mr. Jas. Simpkins, Mr. Benjamin, Mr. T. Henly, Mr. W. Stratton, Mr. B. Baily, Mr. W. Tayler, &c.

Mr. George Brown, in proposing that Mr. Grant, of Manningford, take the chair (which was seconded by *Mr. Benjamin*), said he was anxious to take that opportunity of

expressing his interest in the movement which had called the meeting together, as every Wiltshire farmer must feel gratified in being able to show to their friend Mr. Parry the depth of their sympathy in regard to the sad loss he had been called upon to sustain by the visitation of 1862.

Mr. Grant, on taking the chair, said that, however reluctant he might feel on ordinary occasions to occupy a post so prominent as the one he then filled, he yet felt it was no less the duty than the privilege of all Mr. Parry's neighbours to come forward as they had done on the present occasion. This visitation was of no common kind. All who were owners of flocks must from time to time be necessarily exposed to losses of greater or less magnitude; but this disease of smallpox amongst sheep was of so unusual and severe a kind, that none could have anticipated its outbreak. He felt bound to refer to the excellent spirit which Mr. Parry had displayed during this trying ordeal, and the calmness which he had betrayed throughout; and, in conclusion, he would venture to express an earnest hope that God's best blessings may rest upon him, and that he, as well as those whom he then addressed, may be supported in those trials and difficulties which they would be called upon to endure in their course through life. He now begged to call upon his friend Mr. W. Ferris to present the testimonial.

Mr. W. Ferris, after having expressed a wish that the duty of presenting the testimonial had fallen into abler hands, wished it to be distinctly understood that the contributions which had purchased it were purely voluntary, and had been raised almost entirely amongst Mr. Parry's friends and neighbours. Had the testimonial been made of a more general character, it might have been on a scale of much greater magnitude; but the object had rather been to show Mr. Parry the cordial esteem in which he was held by all those who knew him intimately, as well also as to testify their sense of his efforts to do all that in him lay to prevent the disease in his flock from spreading to his neighbours'. With these few remarks he had much pleasure, on behalf of the subscribers, in handing to Mr. Parry the present which they saw before them.

Mr. Parry, in replying to the kind observations which had been made by the gentlemen who had been deputed to represent the subscribers, said that he should be ashamed of himself if he did not feel most deeply all the kindness which had been shown him throughout the trial which had befallen him. It was in vain for him to attempt to give utterance to his feelings on that occasion, for no language which he could

command would adequately express what he really then felt. Yet he must be allowed to observe, with reference to what had been said by Mr. Ferris regarding the efforts he had made to prevent the spread of the disease to the flocks of his neighbours, that he had done no more than would be done by every other Wiltshire farmer under circumstances of a like kind. Although then he felt that on this account he was in no way entitled to praise, yet he did not the less cordially thank those whom he saw present, as well as all who had subscribed to the very handsome testimonial he had just received at their hands—a testimonial which he hoped to hand down with pride to his children, as having been given him by those whose friendship he hoped he should ever continue to retain.

A cordial vote of thanks to the Chairman having been proposed by *Mr. Brown*, of Horton, and seconded by the *Rev. G. T. Ward*, brought the more formal proceedings of the meeting to a close; but the company did not separate without individually expressing to Mr. Parry the warm feelings of regard towards him which had called them together.

The testimonial consisted of a very elegant silver centre piece, vine and grape pattern, elaborately chased in relief, with glass bowl for flowers or fruit. The base, which is triangular, displays three shields, engraved with the crest and motto cyphers and the following inscription:

“ Presented, with a salver, to Mr. Joseph Parry, of Allington, by his friends and neighbours, in token of the kind feelings of regard and esteem they entertain towards him. 1863.”

Also a large circular silver salver, with richly chased and pierced shell and flower border and engraved plate, bearing the same inscription as the centre piece.

We trust Mr. Joseph Parry may long live to enjoy the gratification and satisfaction which a testimonial presented under such circumstances cannot fail to carry with it; and that the day may be far distant which shall witness the recurrence of a devastation in the flock of any farmer in Wiltshire such as that which took place in the flock of Mr. Parry in the summer of 1862.—*Devizes Gazette*.

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

(THE SECRETARY'S OFFICIAL REPORT.)

THE annual meeting of the above society was held at the Queen's Hotel, Leeds, on Friday, the 29th January, at 1.30 p.m. The attendance of members was very good, and the feeling of kindness to each other, accompanied with a desire to advance the common objects of the society, was cordially evinced by all present. In fact, it was a most successful meeting, and cannot fail to produce beneficial results.

There were present—the President (Mr. E. C. Dray, Leeds); Messrs. Secker, Knaresborough; Lecker, Ripon; Nicholson, Womersley; Pratt, Masham; Anderton, Skipton; Fallding, Wakefield; Patterson, Dewsbury; Kay, Pontefract; Edmondson, Hornby; Horne, Barnsley; Greaves, Manchester (President of the Lancashire Veterinary Medical Society); Taylor, Wetherby; Broughton, Leeds; Carter, Bradford; Cuthbert, Leeds; Fishwick, Gargrave; and the Secretary.

After the preliminary business had been disposed of, the President delivered the following inaugural address :

Gentlemen,—In the present age of intellectual progress, no one will deny the advantages that arise from association. Throughout nature we find this to obtain as a principle, and in so many ways, patent to all, that it is not necessary to advance a single instance in confirmation of the truth of the statement. Both in art and in social and political life the same also holds good. But if there be one section in which its truthfulness is most markedly manifest, it is in the associating together of the members of a profession for the purpose of its advancement.

Associations have been thus glowingly and eloquently described :—“Statesmen associate to make laws for empires, and devise plans to promote their interests. Men of science associate to study our planet, or to explore the wonders of the star-thronged universe. Men of literature associate to converse about the ideas, the figures, and style of celebrated writers, and to strike out a thousand richer notes from the golden lyre of eloquence. Students of the fine arts associate to perfect the art of sculpture, or painting, and to increase the embellishments of civilisation. Men of business associate to promote the extension of commerce. Lovers of

pleasure associate to listen to sweet songs, to join in the merry dance, and experience noisy excitement. On the Continent of Europe men are associated to burst the bonds of tyranny, and by the sacrifice of life itself to secure to their children, and their children's children, the magnificent heritage of civil liberty; and lately the Emperor of the French convoked the sovereigns of Europe to an international congress or association."

Now, although our aspirations may not reach so high as some of these, yet our lesser orb has its sphere of usefulness in which to revolve, and we shall soon be associated with others, each moving in its separate and independent circle. I hope, and believe, that our aim is to be useful. We are become wedded to our science having been long in love with it. To advance its interests, therefore, is only to advance ourselves, and surely for this we merit no commendation, for it is simply selfishness. But it fairly may be asked, What are the best means that can be devised to effect this? And we unhesitatingly answer that, among all the methods proposed, we know of none so likely to accomplish what we have in view as the periodically meeting together of those who are actuated by the same desires, influenced by the like motives, and whose aim and end are the same.

These platitudes I might almost be content to leave with you, only you will naturally expect that I dwell somewhat on the object for which we have now met together, and explain more fully the plans we purpose to adopt. The object is one—the general advancement of our profession; and the means to be adopted to attain this have been already enunciated. We claim no originality here, for it has been over and over again suggested in our monthly Journal the *Veterinarian*; but with the suggestions there would seem to have been but few, if any, efforts made to carry them out. On us, then, falls the honour of being among the first provincial veterinary medical associations formed, and the very first in Yorkshire. Nor do I think lightly of our being thus privileged to take the initiative in this county.

The course of procedure we may adopt at first, probably, will not be perfect. Indeed, it is not likely to be so; if, however, the foundation be correctly and firmly laid, and the outline of the building in like manner be truthfully traced, the superstructure, as it is gradually raised, will prove enduring, from the many labourers that will be employed in it, each bringing materials that have been tested, and each at the same time giving the result of his experience. On this

head I need not further expatiate. Every member will feel that, whilst he comes with a desire to acquire knowledge, he is equally bound to communicate all he knows on the subject chosen for consideration. We never lose by this interchange of information. On the contrary, we are more commonly gainers. Like the sun, which, although it is constantly imparting to other bodies heat and light, never diminishes in splendour. It may be further asked, Are there to be no restrictions? I know but one desirable, namely, that our members be confined to those who have graduated at one or other of the recognised schools. Surely among these our opinions may freely be made known. There must be no reserve, no exclusiveness, in our debates. We have no secrets to keep in reserve, although it is wise at all times to be cautious, and particularly at the beginning to exercise discretion. In a debate utterance is often given to an opinion that mature thought might wish to correct, or by explanation to render more plain. Sometimes we might even wish it were altogether withdrawn, from its being premature or hastily given; moreover, the progress of science may have caused new views to be entertained respecting some points, and no man is fully armed at all times.

Now, the giving of publicity to the essays may not call for these considerations. As it respects the essays themselves, from us will not be expected the elaborate and systematic theses we were wont to write in our younger days, for although the Archbishop of York has lately told us that the best master of thinking is the pen, few of us have leisure and opportunity to devote ourselves to it. On the other hand, they must not be crude and unconnected attempts, for such would disgrace us. Necessarily, we shall have to read for them, so as to ascertain the opinions entertained by others on the subject selected by us. They will, therefore, embody not only those opinions maturely weighed and considered by us, but also our own, as confirmed by experience. Still it is to the debate that follows we shall have principally to look for the benefits to be derived professionally, and to this I have already adverted. I have said it must be outspoken and free, and, *ergo*, there possibly may be objections to its being given publicity to; but not so the essays.

Few of us have forgotten what we used to write as school-boys—"Nemo mortalium omnibus horis sapit," and certain it is that no one is so wise as not to need any further instruction. In the course of our practice cases will often occur in which we may be desirous of obtaining the opinion of another member of the profession, and in this association

we shall have a brotherhood, each being ready and willing to assist the other with his advice in any doubtful case, or in a season of emergency. Nor do I see but that otherwise, when we are fully established, this association might prove to each member thereof beneficial. I allude to the obtaining, for the general use of the members, of the more expensive books, and instruments, and apparatus—those only occasionally required by us, such as lithotomy instruments, inhalers (should any be desirous of employing them), instruments for extracting teeth, &c. Of course these would call for a responsible custodian, who may be the president for the time being. I throw this out more as a hint or suggestion. There may be yet many other ways than those to which I have alluded, in which this association might be made to subserve the interests of its members, and awaken a reciprocity of friendly feeling.

Thus have I spoken of the benefits derivable from association. Whilst advocating union, I do not anticipate uniformity. Indeed, I believe not either in its desirability or the capability of its existence; in truth, the very formation of this association is a demonstrative proof that it does not exist. For what purpose do we meet? Simply to ascertain the varied means that are resorted to among ourselves to accomplish the great object of our vocation—the amelioration of the sufferings of God's creatures, those placed lower in the scale of creation than ourselves; also to prevent diseases among them, by the adoption of those sanitary measures which the laws of science have made us conversant with. During our debates these will be fully and deliberately considered, and the best or most effective selected; and all this gives proof of variety. The trim quaintness of a Dutch flower-garden may be pleasing to the eye of some persons, but for beauty I prefer the English landscape style of gardening. Leave the former, however, for a short time only to nature, and where will be its uniformity? And mental uniformity is as impossible as physical. The mind will always assert its prerogative of being free. This leads me to comment on the present state of education among us. No one in the least acquainted with the past and present condition of veterinary science will hesitate for a moment to allow the great superiority that the latter^s has over the former in this respect. Our status has thus become much higher than it was; our vantage ground greater. But are we to be contented with what has been done? to fold our arms in security and ease, as if nothing more, nothing still greater, were to be achieved? Assuredly not. What has been

hitherto done is merely as a stepping-stone to what is to be done. It has been said that veterinary science is still in its infancy. I have long heard this statement made, but now it is assuredly high time that it should get out of its leading strings and be allowed to walk alone. Of all methods most likely to accomplish this, I know of none so well suited as the free and friendly associating together of its members; while, at the same time, it will prove the means of giving health and vigour to the growing body, and cause its more perfect development. We have not the least desire to assume the office of dictators, far less to cavil at what has been done. So far as it has gone we are pleased with the progress made, and we can look back a few years; still we do think that some things have been left undone. I refer more particularly to the twin sciences of botany and materia medica, as yet scarcely taught in our Alma Mater. They should have a more prominent place given them—a chair or professor of their own. I am convinced, if so be the profession as a body, arising from the Provincial Veterinary Medical Associations hereafter uniting together, were to represent the desirability of this, it would be at once conceded. Perhaps it might be said that in this I am somewhat deviating. I have, however, no doubt in my own mind that questions of this kind will come now and then before us, especially when any uncertainty or doubt arises in the mind as to the operation of certain medicaments, and the laws that should govern their administration. We have much to learn respecting therapeutics; nor will mere practice always enable us to assign satisfactorily the “why and the wherefore” of things; science must come to our aid. While, therefore, we would be grateful for what has been done for us, we do not hesitate to say that we expect still more to be done. At the same time we are not slow to perceive, and at the same time we also thankfully acknowledge, the promises of continued improvements that have been recently made at the Royal Veterinary College, for we believe they are calculated to promote our advancement.

Hitherto I have dwelt on an honour that is mutual, one shared in common by us all. Allow me for a few moments to advert to that which is personal, namely, your election of me as your first president. Why I should have been chosen to this proud distinction, I do not know. I owe it, I am aware, to your too favorable opinion of me. Nevertheless, I accept it with much gratification, and the few talents I possess shall be honestly and earnestly devoted to promote the best interests of this association—the only return I am

able to make for the honour you have conferred. I remember, when a student at the Royal Veterinary College, the sub-secretaryship of the Veterinary Medical Association held there was filled by me, and some of you may have remembered my being in that office, and therefore may have thought me not altogether unacquainted with duties hereafter to be performed. I feel confident I shall have, during my term of office, your united support, which will materially lighten my labours, so that instead of the presidentship proving a task, it will be "a labour of love" to me.

I should not be doing my duty did I not mention the subject of our fees. I think it is a great pity we have not more uniformity here. Some of the members of the profession charge much too low, which has an injurious effect upon the profession. We ought to let our conduct, dress, and address always be such as become gentlemen. We ought never to adopt the style of the groom or stableman, and far less his general habits. They may be vulgarly called "flash," but they are unprofessional, and derogatory to our vocation. I am aware it is policy, and also necessary, to be on good terms with these persons; but it is a great mistake to suppose there is any necessity for undue familiarity with them. We should rather be anxious to gain both the ear and the confidence of our employers. Believe me, I am only actuated by a strong desire that our profession should take a higher standing than it does in making these remarks.

Further, we must not let any petty animosities divide us; on the contrary, we must co-operate for the sake of humanity and science, of which veterinary science presents so admirable a field, and especially when so much of it remains uncultivated. "There is no royal road to knowledge." The hill is often steep and difficult, and like travellers in a mountainous country, when they have laboured hard and reached one ridge, and think it is the last, they look around, and see others still higher to be ascended. These, too, we must mount, for each presents some new prospect from its summit. Difficulties often serve to awaken new energies, and call forth latent powers. To yield at the onset will prove we are cowards; to hesitate is to be beaten; while to advance is to gain the victory. Fortunes, I admit, are seldom or slowly made in our profession; the wherewithal comes in tardily. The professions generally are not like commercial speculations. Nevertheless, by probity and persevering industry, pecuniary success is certain in the long run. We shall heed not imaginary lions in the pathway of knowledge, nor become captives to Giant Despair, although "the race is

not always to the swift, or the battle to the strong." Let us keep our heads clear, by avoiding all excesses of a deleterious character, which only tend to dull the edge of wit, blunt the tenderness of humanity, make a mockery of science, dissipate all right motives, and scatter to the winds all pretensions of being a gentleman. If we wish to succeed and be respected, we must eschew all connections which involve a sacrifice of self-respect, for there is nothing so destructive in its consequences, and so difficult to recover from as this: the moral elements of man are the true conditions of his success. So long as good feeling spreads her banner over us, we need have no fear for the future. Let us maintain a sincere friendship towards each other, keeping our eyes fixed on the importance of our duties, and opening them to the brightness of the light of experimental science.

With reference to veterinary jurisprudence, the late reported trials exhibit a melancholy state of this branch of our profession, and I cannot do better than give you an extract from the beautiful and excellent "annual address" of the editors of the *Veterinarian* for this month (January), in which they remark—"The subjoined observations, taken from an address delivered by the Lord Chief Justice, at a meeting of the medical profession, may not be inapplicable to ours; whilst the truthfulness of the remarks, and the high source from whence they emanate, will give them due weight, and enforce their worth. The difference between the two professions is one of degree rather than of principle. His Lordship observed, they might rely upon it that it was of the greatest possible importance in the elucidation of the truth that medical witnesses should understand the bearing of the evidence they were giving. They had all heard of the frequent contradictory nature of scientific evidence. One set of scientific witnesses were called to prove one side of a case, and another set of equally scientific witnesses were then called to contradict the first, and to give a completely different complexion to the facts. It frequently arose from the fact that, although not one gentleman could be found who would wilfully and deliberately enter a witness box to pervert the truth, or to state that which is not true, yet medical men were apt to identify themselves with the cases on which they were consulted, somewhat as lawyers did with their clients; and although the medical man gave his opinion according to the best of his judgment to the person who first consulted him, he could not help feeling a sort of desire to carry that person through all subsequent proceedings. He thus, without knowing it, became interested in maintain-

ing a particular view of the case. Now, he earnestly entreated them to divest their feelings of preference, and remember they were called upon to aid courts of justice in arriving at sound, and true, and just conclusions. The next point to which he begged to call their attention was the necessity for using the plainest possible language in giving evidence, carefully avoiding technical and scientific terms, and all such displays of learning as might seem pedantic. Such displays laid witnesses open to the ridicule of the lawyers on the side opposed to that which the pedantic evidence favoured." This important advice, from such high authority, cannot be too often reiterated, as we must all more or less plead guilty of being biassed in giving our evidence in courts of justice; assuming the functions of the advocate, instead of the scientific witness.

It would not perhaps be altogether foreign to the subject of education were I to add a word or two respecting preliminary examinations, as to fitness for the profession. There are, we are told, some old laws that have never been enforced respecting this. Would it not be as well if these were rendered available, and their application revived? It is a day of competitive examinations for almost all governmental and many other offices, and knowledge never becomes burthensome to its possessor. This might be followed by some observations as to what is due from us, as practitioners, towards those who are placed under our charge as pupils, so as to render them competent to undergo these examinations; and here mutual considerations would be called for. I am aware some members of our profession entertain an opinion that the term of apprenticeship required is too long, it being a waste of time. But I refrain from further comment. This address may be thought by some to be too cavelling or captious, which is far from my intention; indeed, I have no wish to do aught that will tend to awaken even a controversial spirit that is not perfectly legitimate and desirable; but would rather that all our meetings should be begun and carried on with the utmost harmony and goodwill; ever steadily keeping in view the object of our associating together, namely, the general advancement of our profession. Although, in the language of the poet, we may have to

"Learn to labour, and to wait,"

nevertheless, let progress ever be our motto. For the present, we can hardly take upon ourselves to be even suggesters. Our motives, however, being pure, in accordance

therewith will be our actions, and it is alone by these we shall be judged by our professional brethren. May they prove such as shall ensure their commendation, and quickly lead to the formation of other similar associations as that which is now inaugurated.

Mr. J. Greaves, of Manchester, in proposing a vote of thanks to the President, after paying a just tribute to him for the pleasure all present had derived from his eloquent address, went on to state that, as the President of the Lancashire Society, he, Mr. Greaves, had very great pleasure in making some remarks relative to it, and said—“In the first place, I must tell you we had an association of Veterinary Surgeons in Manchester eleven years ago. We continued to meet once a month for about two years, during which we succeeded in advancing the fee for an examination of a horse from 5s. to 10s. 6d., and spent many very profitable and agreeable hours together, that resulted in the formation of a generous and enduring friendship. But by degrees it seemed to lack interest, and was not conducted with the spirit and discipline which are essential to success. Our present association appears to assemble under more favorable auspices. We have about twenty-five members, and others are joining us at every meeting. I had the honour of calling this association into being (as I had also the other one). On the 16th December, 1862, I called the profession, in Manchester and its neighbourhood, together, to consult them upon the desirability of discontinuing the custom of giving new year's gifts. This question was favorably received by them, and the custom finally and very satisfactorily discontinued. We then inaugurated our society, drew up its rules, and determined to have essays and discussions on the more interesting subjects. At our next meeting we shall have a paper read on “Pleuro-Pneumonia in Cattle.” I have every confidence in these societies. If they are only conducted in a proper spirit, they cannot fail in being productive of the happiest and most beneficial results, as they will tend to elevate the profession, assist it to attain a higher degree of excellence, render us more useful members of society, and, as a necessary sequence, we shall be individually more respected and more appreciated. All this must follow, when the watchful eye of our fellow-men sees that we are striving to assist each other in our endeavours to alleviate more effectually the sufferings of the lower animals; for it must be borne in mind that honour cannot be laid upon a man or upon society, or removed from off a man, like unto a garment; it must proceed from within him,

it is the product of a high and noble nature. A body of veterinary surgeons of the present day, without a rallying point, are imbued with one idea, chiefly with reference to each other; viz., a feeling of rivalry and antagonism. They view each other as opponents, and in no other light. Now, the tendencies of these societies are to change this state of feeling, to modify it, and if possible to entirely dissipate it; and in its stead to place a bond of sympathy, a brotherhood, which in its very nature has a tendency to produce kindly feelings and friendship; they involuntarily necessitate a better understanding, and give us an opportunity of forming a better knowledge of one another. We cannot all boast of having had a classical education; but we endeavour, whilst in each other's presence, to conduct ourselves as gentlemen, manifesting a becoming respect and amiability towards one another; this engenders kindness, and depend upon it has its effect on us in our conduct and demeanour towards each other beyond the precincts of this room. Veterinary surgeons, as a rule, are noted for their civility, industry, and integrity, and let it not be said that veterinary surgeons become the detractors of their brethren in the profession. It has been well said by one of our ablest writers, that 'man's inhumanity to man, makes countless thousands mourn.' Let it rather be said, 'have faith in one another; we may want friendship yet.' You have, I doubt not, each of you, experienced at times, as I have, a feeling of overwhelming sorrow and sadness from circumstances with which you are at the moment contending. There is not one of us but is in the mill at one time or another. It may be from some serious and protracted cases doing badly, belonging to a fidgety and unreasonable proprietor; or it may be from a number of lame horses, caused by our own smiths, and the owner coming down upon us heavily and harshly. Well, at such a moment as this, you happen to spy in the distance a fellow-member of the profession—one with whom you have frequently met at the society. At the first glance you discern a cold, sharp, thoughtful countenance; it may be that very man is writhing under the same dejection of spirits, arising from the same cause as yourself. Well, just watch his countenance as he approaches and passes you; you perceive it to relax; it warms, it brightens up, it gladdens as you near each other, and by the time you meet it assumes a brilliant radiant smile; his eyes sparkle with pleasure, while he gives a frank, easy, honest wave of the hand, and a kindly, friendly nod of recognition, as he dashes past you. All this pleasantry is mutual, and, of course, you have

shown equal amiability to him. Why, that little incident, of only a moment's duration, has flashed a ray of sunshine into each of your drooping hearts; it cheers and invigorates your whole frame; you seem to feel as if you had more of the British lion in you than you possessed before. Yes, my friends, the frank, kind, friendly nod of recognition from a 'brotherhood' is worth more than half a dozen nods from any other man, as is his contrary conduct more acutely felt. This, then, is one of the objects and aims of these societies, viz., to increase and to perpetuate this kindly feeling. Veterinary surgeons must ever feel an interest in one another; as they meet each other, therefore, let them grasp one another's hand without reserve, without that petty shyness and suspicion; for after all, they can enter into each other's feelings, hopes and fears, thoughts and views, as no other men can. Their conversation is always practical, let it be equally candid, unreserved, and friendly, and then these societies will not have been established in vain. But you may say to me, 'This is all sentiment, Mr. Greaves; can you not give us an illustration of their practical advantages?' I would reply, the practical benefits that may accrue from these societies seem to me to be self-evident; there is not one, however humble or eminent, but may impart knowledge to others. The man who can sit three hours at a time listening to the remarks—the best and most sensible remarks—of experienced and practical men, and not derive any benefit from them, must be a dolt indeed. The man of quick perception, an intelligent man, under such circumstances, cannot fail to pick up and to secure valuable knowledge, which will prove of more use to him in his daily avocations than gold, aye, than even fine gold."

After passing a vote of thanks to Mr. Greaves, the members decided that their next meeting should be held at Bradford, on the second Monday in April, at 1.30 p.m., when Mr. Secker, of Knaresborough, promised to read a paper.

Gentlemen desirous of being elected members at the next meeting should give notice to the Secretary, on or before the 30th of March.

W. WILLIAMS, Bradford,
Hon. Sec.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire.

RESEARCHES ON THE INFUSORIA OF THE BLOOD IN THE
MALADY KNOWN AS APOPLEXY OF THE SPLEEN (SANG
DE RATE).

By M. C. DAVAINÉ. (Sitting of the Academy, 27th of July, 1863.)

UNDER the name of splenic apoplexy (*sang de rate*), a malady is designated which is very destructive among sheep, and frequently prevails epizootically during the great heat of summer. In 1850 I was enabled to examine, with M. Rayer, several cases of this malady, either at his hospital in Paris or in his excursion to Chartres. Before this journey, M. Rayer had inoculated a sheep with the blood of another which had died from this malady. This inoculation terminated in the death of the animal on the third day. I repeated this experiment before him at Chartres, in the presence of several medical men and veterinary surgeons. It, too, was followed with similar results. Other inoculations on different animals performed by these gentlemen showed that the malady was transmissible, not only to sheep, but also to the ox, the horse, and other animals, and that it kills in two or three days. I have from that time made many researches on the composition of the blood in this epizootic. In the first examination, the blood was examined by the microscope, from eight to ten hours after death, when a great number of Bacteria were found in it, while in the blood of the healthy sheep, either alive or slaughtered at the butcher's, none of these infusoria are ever found.

In a sheep inoculated by M. Rayer with the blood of the former one, and examined two and a half hours after death, I found in the blood a great number of corpuscles identical with the former. In a note inserted in the 'Bulletins of the Biological Society' for the year 1850, M. Rayer gives an account of our researches in Paris and on our journey to Chartres. He expresses himself as follows on the subject of the blood in these two sheep:—"The blood examined under the microscope was in the same condition as that of the sheep affected with the malady which had served for the inoculation. The globules, instead of being distinct, as in the blood of the healthy animal, were agglutinated, generally in irregular masses; there were, besides, small filiform bodies double the length of the blood-globules. These little bodies

exhibited no spontaneous motion. The existence of the Bacteria in the blood of these two sheep more particularly fixed my attention, on account of the short space of time that elapsed between their death and our examination, principally in the second case, which leads me to think that these Bacteria were not the result of putrid decomposition of the blood, but that they were pre-existent to the death of the animals. I decided from that time to verify the fact of the existence of infusoria in the blood of animals affected with splenic apoplexy at the very first opportunity, and to discover whether the development of these microscopical beings might not be the cause of the deterioration of the blood, and consecutively of the death of the animal. This opportunity had not yet presented itself, and other business had likewise prevented me from more active researches, when M. Pasteur, in 1861, published his remarkable work on the butyric ferment, which consists in small cylindrical bodies, possessing all the characters of the vibrions or the Bacteria. The filiform corpuscles which I had seen in the blood of sheep attacked with splenic apoplexy having great similarity of form with these vibrions, I was induced to examine whether corpuscles analogous or of the same species with those which determine the butyric fermentation, introduced into the blood of an animal, would not produce the same effect as a ferment. It would thus be easy to explain the rapid alteration of the mass of the blood in an animal which had either accidentally or experimentally received into its veins a certain number of these Bacteria, that is to say, of this ferment. These reflections made me desire more ardently to re-examine the blood of animals, suffering from splenic apoplexy; but two summers had passed without my being able to procure a sheep affected with this malady. Lately, M. Diard, a distinguished doctor of medicine at Dourdan, informed me that the malady prevailed in his district; that a farmer had lost twelve sheep in ten days; and at my request he sent me the blood of one of these sheep. The blood exhibited no odour of putrefaction; it had the peculiar violet colour of the blood of apoplexy of the spleen, and examined under the microscope it was found to contain an immense number of Bacteria. They did not move, but were exactly like those I had observed in 1850.

I inoculated immediately with this blood (21st of July, 1863) two rabbits and a white rat, all in good health and vigorous, having their blood perfectly normal. Twenty-four hours after, these animals presented no change in their appearance; their blood, being examined with great care, was found to be healthy, and contained no Bacteria. Forty-three hours after the inoculation, one of the rabbits was seen

to be dying. I hastened to examine his blood, and ascertained that it contained an enormous quantity of Bacteria, identical with those found in the blood of the sheep. The number of these corpuscles was so great that I could hardly give an idea of them except by comparing them with the myriads of the spermatic filaments found in the semen of animals. The blood of the other rabbit, examined forty-eight hours after the inoculation, presented no infusoria whatever. The next day the animal died unexpectedly. The blood, examined half an hour after, contained a considerable number of Bacteria, similar to the preceding. A third rabbit was inoculated with the blood of the first, and while the blood was yet fresh, which died at the end of seventeen hours, after a very short agony. This was examined almost at the instant of death, and the blood was found to contain the same sort of Bacteria as the others. The number of these corpuscles was not so considerable; nevertheless, they surpassed by a great deal the number of the corpuscles of the blood. The rat was reinoculated with the blood of the first rabbit, but for all that it is still alive (26th of July), and presents nothing particular in its blood.

The Bacteria of splenic apoplexy are free, straight, stiff, cylindrical filaments, of variable length—between the fourth and twelfth thousandth part of a millimètre, and of extreme thinness. The largest sometimes have one, rarely two, inflexions at an obtuse angle; by a great magnifying power, traces of a division into segments may be perceived to exist. They have no spontaneous motion whatever. By desiccation, they still preserve their form. Sulphuric acid or caustic potass does not destroy them, applied either in solution or a concentrated state. They comport themselves in respect to reactions in the same way as the most simple conserves (*sic*). When the blood putrefies, the traces of segmentations are more visible. They have divers inflexions, and are divided by segments. As far as I am able to judge at present, they disappear entirely when the blood is completely putrefied. This fact alone would clearly separate them from the category of infusoria, which ferment in putrefied substances, if, on the other hand, they were not already distinguished by their development in the living blood, so to speak, and that without any characteristic odour. It is a long time since doctors in medicine and naturalists have theoretically admitted that contagious maladies, epidemic fevers, the pest, &c., are determined by invisible animalcula or ferments; but I am not aware that any positive observation has ever confirmed these views.

(*To be continued.*)

VETERINARY INSPECTION IN SUFFOLK.

At the meeting of the committee of the Suffolk Agricultural Association, at Ipswich, on Tuesday, the 19th ult., Lord Stradbroke in the chair, the question of veterinary inspection of the horses came on for discussion.

The Chairman said he had been told that it was objected that the veterinary surgeon could not, in one morning, give sufficient time properly to examine the animals. They all knew the enormous importance of having sound animals; and prizes ought not to be given to animals which were not sound both in wind and limb. [The noble earl here quitted the chair to catch the train; and Mr. Allan Ransome was called upon to succeed his lordship.]

Mr. Stearn proposed that there should be no inspection. The time allotted to it did not enable the inspector to give satisfaction. *Mr. M. Biddell* seconded the proposition, and said, let them choose good judges, and depend upon them.

A member remarked that a veterinary surgeon at the elbow of the judges must be an immense assistance.

Mr. G. Sexton said, unless the inspection could be done well, it should not be done at all; and he did not see how it could be done well in the time.

Mr. W. Biddell mentioned an instance in which the certificate of the inspector led to great injustice to the exhibitor. The animal's teeth indicated three years old, whereas it could have been proved it was only two years.

Mr. H. Biddell proposed that the last sentence in the rule, "The judges of horses to be accompanied by a duly-qualified veterinary inspector," be struck out, and that there be added, "The judges to have special regard to soundness."

Mr. Dobito proposed that the rule stand as at present; and if one inspector were insufficient, let two or three be appointed. They wanted to breed good sound horses. There was no better stock in the world; and let them keep them as pure as they could.

A member seconded Mr. Dobito's motion.

Mr. Stearn said it would be all very well if the show lasted a week.

On a show of hands, there appeared ten for the rule to stand as at present, and ten against it.

The Chairman said, where there was a rule in dispute, and the voting was even, the Chairman gave his vote in favour of the rule as it stood, inasmuch as there was not a majority against it.

Mr. G. M. Sexton then proposed that with every animal should be sent a veterinary surgeon's certificate. As they could not have a proper examination in the showyard, let the animals be examined at home.

Mr. Stearn.—You will not get ten horses into the field.

Mr. Waller.—You will have no show.

Mr. Dobito seconded *Mr. Sexton's* proposition, which was carried by ten to seven.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, HELD FEB. 17, 1864.

PRESENT:—The President; Professors Spooner, Simonds, and Varnell; Messrs. Braby, Mavor, Moon, Robinson, Wilkinson, Withers, and the Secretary.

The PRESIDENT, W. Ernes, Esq., in the Chair.

The minutes of the preceding meetings were read and confirmed.

Previous to signing the minutes, a discussion arose with regard to the legality of confirming the minutes of an *ordinary* previous meeting at a *Special* meeting, which was subsequently convened. On referring to the Charter, and By-laws 7 and 8, where it was stated that "At *each* meeting of the Council, prior to entering on the general business, the minutes of the preceding business shall be read and signed," it was held that this, as worded, rendered the act a legal one.

The question having been put by the President was carried.

The *Secretary* read a letter received from *Mr. Garrard*, the legal adviser to the College, enclosing counsel's opinion with regard to the Veterinary Medical Bill.

The *President* stated to the meeting that he had been in communication with *Ed. Holland, Esq., M.P.*, with regard to the bringing in of the Bill into Parliament. He had submitted to that gentleman some brief notes relative to the Veterinary Medical Act, and *Mr. Holland* had promised to use his interest in promoting the welfare of the profession, and as an initiatory step had given notice to the House that he should introduce a Bill for bettering the regulations of the Veterinary profession. *Mr. Holland* now awaits further instruction. A long discussion ensued, when—

It was moved by *Professor Spooner*, and seconded by *Mr. Wilkinson*,

"That a copy of the counsel's opinion be submitted to

Mr. Holland, and that the *President* and *Secretary* do wait upon that gentleman, to ascertain the probable result of bringing forward the measure in Parliament."—Carried.

The meeting adjourned *sine die*.

By order of the Council,

WILLIAM HENRY COATES,

Secretary.

FIRE AT THE EDINBURGH VETERINARY COLLEGE.

WE regret to learn that a fire broke out on the afternoon of February 16th, at the Edinburgh Veterinary College, which at one time threatened the entire destruction of the scholastic portion of the establishment. It seems to have commenced in a vacant space under the raised seats of the lecture-theatre, which had been appropriated to the putting away of forage. "About 4 o'clock in the afternoon, Professor Diek had just entered the room, and was about to commence his lecture, when a strong smell of burning, and the appearance of smoke through the crevices in the floor, gave rise to the apprehension that the hay immediately beneath the theatre was on fire. The alarm was immediately given, and messengers despatched to the police station at St. James's Street and to the main police office. The engines arrived shortly before 5 o'clock, but some little delay was occasioned from the difficulty the firemen experienced in obtaining access to the close and intricately arranged loft, which was fully packed with hay, from which there issued dense volumes of smoke. In the mean time the veterinary students present, from seventy to eighty in number, rendered signal service in removing the books from the library to the front part of the building, and assisting in clearing the museum of its valuable contents. By the time the engines were got into proper working order a large crowd of spectators had assembled, some of whom were very active in their endeavours to assist in saving the property. The firemen, on obtaining access to the hay-loft, concentrated their exertions on the removal of the burning contents, and poured in a copious flow of water; but from the difficulty of getting facility for the effectual play of the engines, a considerable time elapsed before the fire was thoroughly subdued. The lecture-room, being immediately over the flames, sustained, of course, the greatest amount of damage. The whole of the interior fittings were either burned or charred

to such an extent as will require their complete renewal. The flames ascended to the roof, partly composed of glass, and a considerable portion of it fell with a loud crash.

“Fortunately, a thick stone wall intervened between the museum and the lecture-room, or this part of the building must have shared the same fate. In the hasty removal, however, of the valuable contents of the museum, they, of course, sustained some damage. The property, we understand, is ensured in the Sun Fire Office. It is satisfactory to add that the educational course at the college will suffer no interruption from the unfortunate occurrence, as Professor Dick’s lectures will be delivered in Clyde Street Hall. Little alteration will result to the other arrangements connected with the institution.”—*Extracted chiefly from the South British Agriculturist.*

Veterinary Jurisprudence.

NISI PRIUS COURT.—FEB. 3RD.

Before the LORD CHIEF JUSTICE and a Special Jury.

QUARTERMAINE *v.* MORRIS.

MR. Hawkins, Q.C., and Mr. D. D. Keane, were for the plaintiff; Mr. Macaulay, Q.C., and Mr. Barnard, for the defendant.

This case was partly heard yesterday, and occupied a great portion of to-day. It was an action by Mr. Quartermaine, the well-known horse-dealer of Piccadilly, against Colonel Morris, C.B., Assistant-Inspector of Volunteers, for breach of warranty of a horse sold by the defendant to the plaintiff last April.

From the opening of the plaintiff’s counsel, and the evidence adduced on his behalf, it appeared that the horse was a showy animal, and attracted the plaintiff’s attention on more than one occasion, when it was ridden or driven by Colonel Morris’s groom. Having ascertained that it was for sale, Mr. Quartermaine and his son called on the defendant, who told him that the horse had been in his possession about two years, and came from Yorkshire. He asked 250*l.* for him, a price which the plaintiff thought not too high, provided the animal were sound. But Mr. Quartermaine desired further opportunities of examining the horse, and for that purpose asked whether he might go to the mews where the horse was kept. Colonel Morris objected to this, for he said there were some “coping fellows” about the place, and that if the plaintiff did not buy the horse it would get a bad name with these persons. Colonel Morris also refused, for the same reason, to let the horse go down to the plaintiff’s stables in Piccadilly. Nothing further took place at the interview of the 31st of March, but on the 4th of April the defendant called at Mr. Quartermaine’s stables, and said the plaintiff might see the horse that afternoon at Cadogan Place. There, accordingly, at a few yards from Colonel Morris’s house, in Cadogan Place, the groom put the horse into a canter in the presence of the defendant and plaintiff, and of Mr.

Quartermaine, jun. The plaintiff noticed some slight blemish upon the horse's throat, but took no particular notice of it, because both then and on the 31st of March Colonel Morris said that the horse was perfectly well, and that there was not a sounder horse in the kingdom. Mr. Quartermaine said, "Of course you will warrant the horse?" to which the alleged reply was, "Oh, of course; there is not a sounder horse in the kingdom." Thereupon the plaintiff said he would have the horse at the price asked, and on the horse being sent to Mr. Quartermaine's stables a cheque was returned for the amount. Every care was, of course, taken of so valuable an animal by the buyer, and about the 25th or 26th of April it was sold to the Hon. Mr. Coventry for 350*l.* A few days after this sale Mr. Quartermaine received an intimation from Mr. Coventry that there was something the matter with the horse's wind. The horse was accordingly taken to the Veterinary College, where he was examined, and pronounced to be a "whistler." Mr. Quartermaine at once cancelled the sale to Mr. Coventry, and communicated with the defendant, who, however, declined to take back the horse. The horse was kept by the plaintiff down to July, when it was sold at Tattersall's, and fetched (after deducting expenses) 158*l.* 4*s.* 6*d.*, leaving a loss of 91*l.* 15*s.* 6*d.* upon the amount paid by the plaintiff. This was the sum now claimed, together with 12*l.* 4*s.* 6*d.* and 100*l.* loss sustained upon the cancelled re-sale to Mr. Coventry, making up a total of 204*l.*

The Lord Chief Justice.—It is doubtful whether the plaintiff can recover the 100*l.* There is a question now pending in the courts on this point. It is quite clear that a person who receives a false warranty can recover any loss he has thereby sustained. But whether he is entitled to recover mere profit which he would never have made if a true representation had been made to him, is a nice question, which awaits decision, and which must therefore be reserved in this case.

It was further shown, on the part of the plaintiff, that so far from the horse having nothing the matter with him, it had in 1861 been under the care of Mr. Mavor, the veterinary surgeon, for strangles, and even in the March of 1863 the horse had had an attack of inflammation of the lungs, and had been under the care of Mr. Williams. Plaintiff admitted that he did not hear any "whistling" when the horse was trotted in Cadogan Place; but then, though it was trotted pretty fast, it did not go at the rate of twelve miles an hour, for the horse could not do such a pace. He denied that previous to the sale defendant urged him to have the horse examined by a veterinary surgeon; nor did he hear from the defendant about the horse having been in 1861 under Mr. Mavor's care. He should never have thought of buying the animal for so high a price, and without a minute examination, except upon a warranty. When the horse was sold at Tattersall's he objected to its being saddled and ridden, because it was entered as a harness horse, because if it had been ridden round the ring every one would have seen that it was a whistler, and it would not have fetched half the sum obtained for it.

It was stated that the horse was bought at Tattersall's by Sir James Fergusson, M.P.

Mr. George Barker, assistant to Mr. Williams, veterinary surgeon, of Pimlico (who was too ill to give his evidence), and *Mr. Mavor*, a well-known veterinary surgeon, deposed that the horse had suffered from strangles in 1861, and was then ill about a month, and that last March the horse suffered from congestion of the lungs, for which mustard poultices were applied.

Mr. Mavor said that strangles was a common cause of "whistling," and "whistling" was a decided unsoundness; but he had no idea, up to the

last, that this horse was a "whistler," because he had no opportunity of trying him.

Mr. Spooner and *Mr. Varnell*, Professors at the Veterinary College, stated that they examined the horse in May, and found that it was a "whistler," and they thought the disease was not of recent development, but must have existed for some months. *Mr. Spooner* was of opinion that the "whistling" did not come on from paralysis of the nerves after the 4th of April, or, at all events, such a case would be a very exceptional one.

For the defence it was urged that no warranty was given at the time of the sale, and that the defendant then believed that the horse was sound; that the illness of the horse before the purchase had been much exaggerated, and the blemish in the neck, arising from bleeding, had been seen by *Mr. Quartermaine* before the sale. *Colonel Morris* had given directions to the livery-stable-keepers to sell the horse for 250*l.*, but not to warrant it, although he fully believed it to be sound.

The Defendant said that he bought the horse in 1861, from *Mr. Sewell*, of Pimlico, and gave 105*l.* for it. It was then rising four years old. He bought it for riding, but latterly used it in a brougham. A very short time after he bought it the horse was attacked with strangles, and it also suffered from lameness. Last March the horse was also taken ill, and *Mr. Williams*, who was called in, said it had slight congestion of the lungs, advising mustard poultices, but defendant had the horse bled, and it soon got well. He denied altogether having told the plaintiff that he had bought the horse in Yorkshire, or that it was as sound as any horse in the kingdom. He did not allege that the horse had always been sound, but only said that, so far as he knew, the horse was sound, and that if plaintiff was not satisfied he had better take it to *Mr. Mavor*, or any other veterinary surgeon, and have it examined. Plaintiff never, as he represented, said to him, "Of course you warrant the horse sound?" After the sale he saw the plaintiff, who expressed himself satisfied with the horse, and said he was able to make it step considerably higher than when he first had it. Defendant contradicted the statements made by the plaintiff and his son as to the alleged warranty, and declared that *Mr. Quartermaine* never asked for a warranty, and that nothing was said about a warranty.

The Defendant's groom corroborated, in some material points, the statement of *Colonel Morris*, and several livery-stable-keepers and horse-dealers were called to prove that the horse had not been seriously ill in March, and that, so far as they had observed it, having had opportunities of doing so, they had not noticed the alleged unsoundness.

It was also contended, on the part of the defendant, that the "whistling" spoken to by the veterinary surgeons might have originated in a sudden attack of nerve-paralysis, which the animal might have had after the sale to *Mr. Quartermaine*.

The Lord Chief Justice, in summing up, said the questions for the jury to consider were—first, whether there was a warranty of soundness at the time of the sale; secondly, whether the horse was unsound then; and, lastly, whether the horse was unsound at all. He did not remember a more painful case of the kind, for it was impossible to reconcile the testimony of the adverse parties by any of those rules to which the Court was always too happy to resort with a view to reconcile opposing testimony. It was difficult to conceive here that there could be such mistake, or misconception, or want of recollection, on either side, as would account for the discrepancies in the evidence; and it must, therefore, be left to the jury to determine which of the parties—*Mr. Quartermaine* and his son, or *Colonel Morris*—was telling the truth.

The jury retired to consider their verdict, but in about three hours sent word that they were not likely to agree.

His Lordship asked whether the counsel in the case would accept the verdict of the majority.

Mr. D. D. Keane said that on the part of the plaintiff he should decidedly object to do so.

Shortly afterwards the jury were sent for, and in answer to the Lord Chief Justice, said there was no probability of their agreeing. By consent of the parties, they were accordingly discharged without a verdict.

CONVICTION FOR EXPOSING FOR SALE DISEASED CATTLE.

A CONVICTION of some importance has taken place before the magistrates at Worcester, who have expressed a determination on a former occasion of putting the law in force with the view of preventing the exposure of diseased cattle for sale in the local markets. At the last Worcester fair a cattle-dealer, named Slade, brought a herd of twenty or thirty cattle for sale. In consequence of the prevalence in the district of a disease among cattle called the foot and mouth disease, an officer has been appointed by the town council, whose special duty it is to watch the fairs, and see that no diseased sheep or cattle are exposed for sale at them. On Monday the inspector (Berridge), while on duty in the cattle-market, examined Mr. Slade's stock, and found among them two cows which exhibited symptoms of disease. He accordingly seized them, and summoned the owner before the magistrates. Evidence was given by him, and by a veterinary surgeon, that the cows were so affected, and the disease was contagious and infectious. The animals had sore mouths and tongues, and swollen fetlocks. The veterinary surgeon said that the owner could not plead ignorance of the fact, for no person at all acquainted with cattle could fail in detecting the disease. The magistrates accordingly convicted the defendant, fining him 7*l.* and costs, and ordering the cattle to be detained until cured, and the extra costs of their cure and maintenance to be paid by the defendant before the cows were given up to him.

SALE OF DISEASED PIGS.

At the weekly meeting of the Liverpool Health Committee, last week, it was formally reported that Mr. Lewis, the steward of the Rainhill Lunatic Asylum, had, on the 12th inst., sold 80 pigs to a pork-butcher in that town, and he had been induced to do so because lung disease had broken out among the pigs at the asylum, of which it was usual to keep from 100 to 200, and that number was found barely sufficient to supply the consumption of the establishment. Finding that a virulent disease had broken out among the animals, which neither a veterinary surgeon, who was called in, nor the medical superintendent of the institution, could cure or counteract, Lewis, with a view to prevent loss to the asylum through the death of the pigs, sold them to the butcher referred to. Some of these pigs had been in such a condition as to be fit to be driven off the premises; but others had to be carted, in consequence of being unable to walk. It is believed that these pigs were slaughtered in Liverpool, and were consumed as human food. Others of the pigs which were left at the asylum died, and were buried; but it is believed that

another sixteen of these diseased pigs have been sold. A copy of the report was ordered to be forwarded to the county justices, and a strict inquiry was ordered to be made in the matter, with a view to have the guilty parties punished.

Parliamentary Intelligence.

DISEASED CATTLE.

Feb. 12th, 1864.

Mr. Long asked the Secretary of State for the Home Department whether his attention had been drawn to the statements made by the Government Commissioner, Professor Gamgee, as to the losses inflicted on British farmers by the importation of diseased cattle and sheep; and whether it was his intention to propose any remedy for the evils complained of.

Sir G. Grey said his honorable friend the Under Secretary of State would shortly give notice of the introduction of two Bills on the subject.

ARMY APPOINTMENTS.

WAR OFFICE, PALL MALL.

3rd Hussars.—Veterinary Surgeon George Fleming, from the Military Train, to be Veterinary Surgeon, *vice* Hicks Withers, transferred to the 10th Hussars; Jan. 19th.

10th Hussars.—First-class Veterinary Surgeon Hicks Withers, from 3rd Hussars, to be Veterinary Surgeon, *vice* William Thacker, promoted; Jan. 19th.

Military Train.—Acting Veterinary Surgeon Michael D. Byrne to be Veterinary Surgeon, *vice* George Fleming, transferred to the 3rd Hussars; March 17th.

OBITUARY.

Died, Dec. 27th, 1863, after a short but severe illness, John Smith Mayer, M.R.C.V.S., Newcastle-under-Lyne, aged forty-two. His diploma bears date June 16th, 1841.

Lately, at Melton, Suffolk, Edmund B. Goodwyn, M.R.C.V.S. Diploma dated June 19th, 1839.

To these deaths we regret to have to add another, namely, that of William Blunsom, of Daventry, Northampton, who was accidentally killed by a fall from his gig, on February 22nd. Mr. Blunsom passed his examination May 14th, 1851.

ERRATA IN NO. 434.

Page 92, line 10 from top, *for* "For some of these," *read* "To some of these."

Page 95, line 10 from bottom, *for* "Mr. Gamgee," *read* "Mr. Greaves."

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Communications and Cases.

REMARKS ON CASES OF PARASITIC DISEASE
IN HORSES.

By Professor VARNELL, Royal Veterinary College, London.

DURING the month of February, 1864, I received some interesting morbid specimens taken from horses whose deaths were doubtlessly caused by parasites. Being aware of the ravages that parasitic diseases are making in our domestic animals, far greater than is generally supposed, even by the members of the profession, I am induced to ask for room in the pages of the *Veterinarian* for the following letter, and the few remarks I have made upon it; my chief object being to add to the common but as yet scanty stock of this description of veterinary literature. The facts that I may be able to contribute, and those also which my professional brethren may be disposed to supply, will doubtless be useful to whomsoever may undertake the publication of a treatise on the entozoa of domestic animals, and the diseases that are produced by their presence. Such a work is much needed at the present time, and whoever accomplishes the task will confer a boon on the public at large, as well as on the profession. I make this remark, as I have some reason to think that such a book is in the course of preparation, although I cannot speak positively thereon.

To the pathological anatomist an investigation of the structure of parasites, and a knowledge of their natural history, are of great importance, as their presence in large quantities often implies previous disease in the animal they inhabit,

and also the almost absolute certainty of new diseased action being induced thereby.

Such knowledge will enable the practitioner to understand, to some extent, the particular organs each variety of *entozoa* locates itself in, and also that certain kinds are singularly erratic in their habits. It will likewise assist him in interpreting the symptoms of the disease they produce, and in suggesting suitable therapeutics for the expulsion of the parasites from the body of the animal.

Very little is known of the precise causes which render the horse susceptible to the attacks of *entozoa*, or even what that condition may be which makes his interior a suitable soil—if I may so express it—for the development of ova taken into the system from without, or produced from existing parasites already within the organism. It will be admitted, I think, that some animals become infested with parasites, while others, under similar circumstances, altogether escape. Assuming this to be the case, we are forced to the conclusion that the systems of some horses are in a more favorable condition for the propagation and development of these creatures than those of others.

The particulars of the case in question are contained in the following letter.

LONG CLAWSON, MELTON MOWBRAY,
February 2nd, 1864.

SIR,—Knowing from the perusal of your excellent articles, recently published in the *Veterinarian*, that you possess an ardent zeal for the promotion of veterinary science, I take the liberty to send you, *per railway*, thinking you would like to lay them before the members of the Veterinary Medical Association, portions of the cæcum and colon, with a small piece of the wall of the abdomen, and the anterior mesenteric artery, of a yearling colt. All the parts sent, as you will perceive, are infested with worms. Within the mucous membrane, both of the cæcum and colon, the parasites exist in myriads, and in various conditions. The majority are extremely small, while some are encysted, having produced small abscesses. They are apparently ascarides.

In the mesenteric artery you will observe a different kind of worm, which has wrought important changes in the structure of that vessel. The areolar tissue underneath the parietal peritoneum affords a nidus for another kind, which is larger than that either in the blood-vessel or within the mucous membrane of the large intestine. These parasites undoubtedly occasioned the death of the animal from which the diseased parts were taken. Worms are common in young horses in this neighbourhood, and are highly destructive to life. They give rise to symptoms which are most distinctive, and to various secondary affections, which, generally speaking, are not understood, and which the country practitioner seldom refers to the true cause.

Hoping the specimen may be of use,

I am, &c.,

To Professor VARNELL.

ROBERT LITTLE.

In the specimens forwarded to me, and mentioned in the preceding letter, there were a great many parasites, while on the surface of the mucous membrane of the intestines indications were present of a still larger number having existed, and which, I have no doubt, had escaped by the removal of the ingesta when the bowel was laid open.

The indications just alluded to, consisted of numerous small reddish-brown spots, having an appearance as if fine bran had been strewed over the surface of the membrane. These spots, upon closer examination, appeared to have been produced by the entozoa having been attached to the membrane for the purpose of obtaining nourishment at the expense of the animal organism; at least, I cannot in any other way account for their presence. They were evidently minute blood spots.

The abscesses mentioned by Mr. Littler—of which there were several in the portions of intestine I received—were situated in the submucous tissue. They varied in size from a hazel nut to that of a walnut. Each contained some pus of a soft and cheese-like consistence, and in some of them one or two strongyles were found, but in others I was not able to detect any worms, either of this or any other variety. In the immediate vicinity of these abscesses I noticed, however, several strongyles imbedded in the submucous areolar tissue, as though they had wandered from their original abode. With reference to the portion of the wall of the abdomen, many strongyles were found beneath its peritoneal lining. They varied very much in size. Some were large, and others quite small; and on examining the free surface of the membrane, I noticed several small *pin* holes, as though these creatures had bored their way through it, which is, I suppose, very probable.

The mesenteric artery also contained a large quantity of strongyles. This, however, is by no means a rare occurrence; indeed, it is a circumstance so frequently met with in the dissecting room of the College, especially in emaciated animals, that very little notice is frequently taken of it. Nevertheless, it is a fact which I feel has not been so fully appreciated by the pathologist as it should be in his endeavours to account for certain phenomena in connection with entozoa and the effects they are capable of producing.

Mr. Littler thinks that when parasites exist in the interior of an animal in large quantities, there are symptoms which strongly indicate their presence. This, no doubt, is quite true with some varieties, and some practitioners may infer that

it is so with all. Nevertheless, I feel assured that parasites may infest the system, and even in large quantities, without the practitioner suspecting their presence. With reference to "various secondary affections," mentioned by Mr. Littler, I can quite understand that their true nature is often not understood, or the cause which gave rise to them comprehended. There are certain diseases which give rise to symptoms analogous to those produced by parasites; for example, if a horse loses flesh, his muscles becoming flabby at the same time, the visible mucous membranes pale, and the abdomen unusually large, with dropsical effusions into the areolar tissue of his legs and the under part of the belly, these symptoms may, with consistency, be attributed to mesenteric disease, complicated, perhaps, with thoracic disease also. But if in addition we observe that the horse has a chronic cough, a voracious appetite, an unhealthy coat, and often a lax state of his bowels, then the evidence is very strong in favour of parasitic disease being the cause of the symptoms.

A similar specimen to the one alluded to was sent to the College on the 1st December, 1863, by Mr. Goforth Wyer, M.R.C.V.S., of Donington. In this case the parasites were of the same kind as in Mr. Littler's case, viz., strongyles, and the surface of the colon presented precisely the same speckled appearance, which was due, I believe, to the same cause. That worms existed in very large quantities in the intestines, and were the cause also of death in this instance, I think there cannot be a doubt.

In connection with these remarks it may be asked, if any means can be suggested to prevent the occurrence of parasites in the horse, and when they do exist what is the best mode of getting rid of them. These two points concern both the owners of horses and veterinary surgeons, and although I did not intend to make any remarks upon them, nevertheless, I feel desirous of giving expression to a few thoughts which have suggested themselves to my mind.

Prevention of disease at all times demands our first consideration, and with reference to the point in question I hesitate not to state that a dry soil, nutritious food, and a clear dry atmosphere are most congenial to the health and longevity of the horse; and that animals bred and reared under such circumstances are usually capable of great endurance. On the other hand, horses which are reared in a damp humid atmosphere, upon a badly drained soil, and fed upon coarse, half-decomposed, innutritious herbage, are as

a rule structurally weak, and incapable of great exertion. They are also subject to many diseases; are particularly liable to be infested with parasites, and to fall a prey to the effects which they produce on the system.

If these remarks be true; prevention, as far as our climate will admit, is to a certain extent in the hands of the breeder; and there can be no doubt, I think, but that the best localities for breeding and rearing horses are good, dry, upland pastures, covered with short but nutritious grasses, having the surface undulating, and not too highly wooded. Care also should be taken in providing suitable winter provender. The hay, especially, should be well cured, and the produce of good *sound* land. Bad provender is well known to be favorable to the engendering of parasites in animals that feed upon it. Too much care cannot therefore be taken in the selection of the best kind of food, especially for young stock. It is even more important in those establishments where thoroughbreds are reared that all drawbacks to the development of vigorous health should, as far as possible, be avoided.

I may be told that there are many breeding establishments that correspond with what I have thought most desirable as far as locality and dryness of soil are concerned, and yet it is notorious that the foals and yearlings that are there reared are infested with worms. How is this to be accounted for? Let us suppose that an establishment of this kind is planned out, with suitable paddocks and buildings, and that horses, mares, and foals are placed upon it. Some of the animals, in all probability, have worms in their intestines. At the time they may be few in number, and of different varieties. It will not be long, however, before some of these parasites, or their ova, or both, will pass through the intestines and be deposited on the pasture. Now it is to be remembered that the ova do not at once perish, nay, some of them may remain alive for a long time, and be taken up again by the same animal while feeding, or by a fresh occupant. The rapidity with which entozoa multiply is almost fabulous; and from the same soil being inhabited year after year with mares and their offspring, the surface may become covered with myriads of ova, and I can conceive that it would be almost impossible for a foal, on its first attempt to eat grass, to be very long before some of these ova were taken into its interior, and thus infest it with worms. There may be some truth in this theory, for the reason that the ova must be taken into the young animals from without; and where else should they get them but from the food they partake of? And as the foals and yearlings suffer more from parasites in the paddocks than they do on the

adjoining farms, where only an occasional foal is bred, I think there is no doubt but that the cause I have suggested is a very common one. At any rate, I feel persuaded that it must be so.

If these views be confirmed by the experience of others, they call for a deep consideration as to the advisability of using such paddocks *permanently* for the purpose of rearing valuable thoroughbred horses. If a change of locality could be made for two or three years, or for such a length of time as would be required for the ova to perish on the original pasture, then the animals might be returned to it again with safety. No loss need be occasioned by such an arrangement, as the paddocks could, with great advantage to the herbage itself, be fed with another species of animal. The medical treatment for the expulsion of worms from the intestines of animals should at all times be left in the hands of a competent veterinary surgeon. I have no doubt but many a valuable foal or yearling which, had it lived, might have been the winner of the Derby, has been sacrificed to the use of some drastic nostrums, prescribed by some self-opinionated person wholly unacquainted with the action of the medicines which he administers for the expulsion of worms.

OBSERVATIONS ON "SOUNDNESS."

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from p. 146.)

HAVING taken a hasty glance of the different structures met with in the course of our examination of the fore limb, it becomes necessary to direct our attention to the foot. It would be supererogatory to remind any of your readers that the examination of the pedal extremity is one of extraordinary interest. If my memory serves me, the late Professor Coleman found matter for forty lectures, or thereabouts, when giving instruction to his class in the anatomy, physiology, and pathology of the foot of the horse. Whether the knowledge the learned professor possessed of the subject was all that was required, is not for me to venture an opinion upon; but, I may be permitted to state, that even at the present day much has to be learnt with reference to the physiology of certain parts of the foot.

Most of the diseases likely to meet the eye of an examiner as to soundness have been remarked upon, in a somewhat cursory manner it must be confessed, yet sufficient has been said to direct the attention of those more competent to treat the subject than I am in that branch of our profession, which, up to the present time, has been too much neglected.

Similar marks of unsoundness are sometimes present between the fetlock and the coronet as have been described as found between the knee and fetlock, and which renders it unnecessary to dwell upon, sufficient having been said of the one to answer for the other; we, however, may just mention, *en passant*, that at the anterior part of the fetlock a bulging or enlargement is frequently seen, which occasions some alarm. This will arise from one of several causes; in one case it is analogous to a tumefied bursa; in another, it will be caused by disease of the bone; but whatsoever the nature of the swelling may happen to be—and it is well to ascertain this as nearly as possible—it is caused by injury from without. Horses with upright pasterns are liable to it most especially; although horses with legs and joints of every shape and form are obnoxious to it also. These enlargements are often produced in the hunting-field. Jumping a wall or a rail, going too close to the fence, will likewise be a certain source of accident; indeed I know of no surer way than this to produce the injury. Horses addicted to pawing in the stable will injure their joints in a like manner; but of all things, going too close to timber or stone walls in the flying or buck jump is the most frequent. When we take into consideration the weight of a horse and its rider, the impetus with which the horse goes at a fence, the peculiar position of the soft and hard parts of the limbs, the fact of those soft parts being drawn as it were tightly over the bones when the limb is doubled up; we need not be surprised at injury being the result of a knock under these circumstances.

The same observations will apply to the knee. People often wonder at seeing their horses with *big knees* the morning after a hunt. They cannot imagine how a slight *tip*, as they are pleased to call it, should so disfigure the leg. They do not take into consideration the position of the joint, the speed of the horse, and the texture and low state of organization of the integument at that particular part; if they knew all this they would no longer wonder, especially so when we remember that the fence is made of unyielding stone.

In these observations I have not mentioned anything with respect to *peculiar marks* sometimes seen midway between

the knee and fetlock, as well as between that joint and the foot. I allude to scars left after the operation of neurotomy; because these scars will receive some attention in another place.

In pursuing our scrutiny towards the hoof, we usually spend a little time in ascertaining the state of parts around the coronet. They should feel elastic to the hand, not, as is too often the case, as hard and unyielding as a piece of dried gutta-percha. When this latter state exists, we often find the animal with stilty or rough action. The diseases met with at this part of our examination are ringbone, ossified cartilage, false-quarter, sand-crack, sore heels, treads and over-reaches.

Ringbone is occasionally met with in horses submitted for an opinion as to soundness. This disease is one of much importance. It is found to vary a good deal as to its consequences, depending upon the exact situation of the abnormal deposit. It is occasionally seen that ringbone exists without interfering with the usefulness of the animal; but, as a general rule, the reverse is the case, especially when situated in the fore limbs. There are cases brought for our opinion which are found to be slightly lame, and with all our acuteness we are not able to account for it, or to point to the cause; and we are sorely vexed, inasmuch as we are expected—like newspaper editors—to know everything. A few weeks, however, or perhaps a few days, will bring to light the hidden cause of lameness, which presents itself in the shape of an exostosis near the pedal extremity, so deeply situated as to occupy a spot below the coronary ligament, which eventually grows upwards, and becomes what is known as ringbone. This term is not a happy one, as we do not always find an exostosis forming a ring or circle round the bone; it is more frequently met with in two separate or distinct parts. Ringbone is thought less of when situated on the hind feet than when on the fore, and much less, if *both* feet are affected. Horsemen say that if both hind feet are diseased, the horse will travel more easily than when lame only of one. This is true, and so it is with most other lamenesses. The screw dealer is aware of this, and fails not to make both feet suffer by tightening the shoe of the sound foot, by which the action is rendered *even*, although shorter. The unwary are in this manner deceived; they are made to believe—if mention is made of the shortness of action or stride—that it is the *natural* one of the animal in question, and the purchase is generally effected after this assurance. Action, although much is known about it, is, in my opinion, not thoroughly

understood; certainly not by the *mass* of horsemen. I dare say most persons who are in the habit of riding or driving animals would feel themselves offended if told they did not understand what a horse's action should be. If we look into the streets, or the hunting-field, we shall learn that every animal has his own peculiar gait or action in his various paces; hence arises the difficulty in making persons believe that this or that horse has imperfect action, and that that imperfection arises not infrequently from diseased bones; but so it is. This subject will be referred to again in another place. I have thrown out a hint to the effect that impaired action may, and often is, referrible to diseased bones, although the disease in each particular case is not always definable. If ringbone has commenced immediately beneath the coronary ring, as it sometimes is known to do, it will not be an easy matter to diagnose it; time will be required to bring it to light. Ossific deposits are not always of the same character. I have found more of the earthy carbonates in some than in others; this fact will account for the easy and effectual manner that some are absorbed; no matter whether the deposit is situated upon the tarsi, metatarsi, metacarpi, suffragini or coronæ. We are sometimes told of the wonderful cures made by *skilful* men in the country, that is to say, the men who live as farm servants, and know a little—or as some persons think a good deal—about medicine. Many times I have been told of such and such a one being able to take off a splint or a spavin in less than no time. Doubtless there are men of this class to be found, and they invariably obtain much credit for their cures; the failures, however, scarcely ever transpire. How different this is to the members of our profession. If we fail in one instance, the winds convey the evil tidings far and near; but if we make a hit, how quiet it is kept! It may make a little consternation if it happens to be anything truly wonderful, but it is only of short duration.

But to return to the different kinds of bony deposits. Some of the specimens I possess consist of masses of matter analogous to common chalk; others are as hard as adamant. This explains, I think, the reason why some splints are so readily absorbed. Cold applications will, not infrequently, cause rapid absorption of these deposits. On the other hand, we know also that the most potent agents will frequently fail to reduce others. I have had occasion to penetrate the bony deposit with a sharp knife, or the actual cautery, both of which have failed to accomplish the desired end when the mass has been of the hard kind. If we can ascertain in our

examinations to what class the abnormal deposit belongs, it will guide us in a great measure in our opinion, and we shall be likely to gain some credit for our discernment.

That renowned writer in his 'Hippopathology'—Mr. Percivall—has not made mention of the *quality* of the deposit in his remarks upon ringbone; he merely describes its situation, size, and form. Too much stress cannot be made as to the *quality* of the growth. I am convinced, however, that situation has much, indeed almost everything, to do with its influence in causing lameness. If the exostosis commences immediately underneath a ligament or tendon, the pain will of necessity be much greater than when isolated. The tension produced upon the periosteum is bad enough, which, if added to by the interference of ligament or tendon, will, of course, cause an augmentation of the pain, and consequent lameness.

The causes of ringbone are said to be threefold—hereditary, structural, and incidental. If we could ascertain the soundness or otherwise of the parents of our patients, it would lessen the difficulties we sometimes meet with. I knew a horse with ringbone who was used as a sire. It was stated when the horse was introduced into the locality, that the enlargement upon the limb was *not* ringbone, but, as he was racing, it was contended, he met with an accident, and that the swelling was produced by it, which ought to be a guarantee of its innocuousness. The horse was excessively lame, which was readily accounted for from the fact of the abnormal growth of bony matter occupying so much space so as to implicate the ligaments and tendons passing over the pastern joint; the animal, however, was in the possession of a very popular man, which was enough to gain a good introduction for him. Some of his produce have come under my notice, and have been pronounced anything but sound ones; lameness has been a characteristic feature in some, although it is difficult to state in a positive manner that ringbone was the cause; at the same time the rigid state of parts in connection with the coronary ligament favored the idea that the cause of lameness was in the immediate vicinity, as there was an absence of any symptom by which I could fix upon any other part as the source of evil. The reply given by a horsedealer in Percivall's 'Hippopathology,' when asked how it happened that but few ringbones were now met with compared to the numbers that attracted notice in times past, deserves to be known, "Because no breeder of horses now-days will send a mare to a horse having ringbones." This seems to direct one's attention more especially to an here-

ditary predisposition on the part of an animal to contaminate his produce with disease which exists in his own system. A great deal is often said by persons in courts of law as to hereditary predisposition. Some are of opinion, a disease—ringbone, for example—is one of this class; whilst others contend that it is sometimes, but not always. Who can settle such a question? Surely, it may be argued, one man's opinion is as good as another's when neither has the power of proving his case by ocular, or other conclusive, demonstration. It still is an open question as to whether many complaints are not indeed hereditary. Would it be too much to say that *all* diseases which are not really produced by *accidental* or *other well-definable causes*, are hereditary? I am very much inclined to this opinion. It is no proof of the *in-correctness* of the theory, merely because every animal whose sire or dam was known to possess this or that infirmity does not at once become affected in a like manner. The exciting cause which most complaints wait for, may not have had its influence. My idea of diseases generally is, that the system, prior to its becoming affected by any particular one, must be by some influence rendered or brought into a state to receive the taint. This will apply more directly to those diseases which are generally known as contagious and infectious; but, it also applies to most, if not all others. We may turn to one of our old authors and find the following truism with reference to ringbone: "It proceedeth, as some farriers hold opinion, either from some blow of any horse, or by striking the horse's foot against some stub or stone, or such like accident; but surely I hold, that also it proceedeth from some imperfection in nature; forasmuch as I have seen many foals foaled with ringbones on their feet; these ringbones do breed a viscous and slimy humour, which resorting to the bones that are of their own nature, cold and dry, waxeth hard, and cleaveth to some bone, and so in process of time becometh a bone." *Vide* 'Markham's Masterpiece,' page 225.

Every practitioner's experience will no doubt afford the same evidence as regards the young animal being seen to suffer from these deposits soon after they see the light. With respect to treatment, it may not in this paper be out of place if a few words are said with reference thereto. Most veterinary surgeons pursue a similar mode by which these abnormal growths are attempted to be got rid of, I say attempted, because I believe but few ringbones *are indeed removed*. The author just named gives the practice of the old farriers; that is to say, "caustic applications, both potential

and actual; cutting down upon the bone with a lancet or sharp knife," &c. I should like to know how much improved that practice is in the nineteenth century. For my own part, I do not see that we have much to boast of, if we except the division of the nerve. In some cases of old standing, when they have been under the treatment of others previous to my being consulted, and they have failed to effect a cure of the lameness by all the known remedies, I have been very successful in rendering an animal useful by the operation of neurotomy. Two cases were thus treated last year by me, each of which had been under surgical treatment for a lengthened period. Repeated vesicants, and the actual cautery twice applied, had failed to effect the desired end. Upon carefully examining the parts, and taking into account what had previously been done, I could come to no other conclusion than that the deposits so interfered with the ligaments as well as the tendons, that nothing short of cutting off the supply of nervous influence would be of use in the cases referred to. Suffice it to state, the operation was performed, and in due time they both became again useful animals; one as a farm mare and the other as a carriage horse.

We often lose much time in the treatment of ringbone, and cause some dissatisfaction to the owners of the animals so affected, by the tedious and oftentimes unsuccessful application of the various preparations of iodine, vesicatories, and the actual cautery. It is a question whether in such cases as I have alluded to, it would not be wise at the onset to prepare the parts for the operation of neurotomy, and recommend it instead of the old routine mode of treatment. In every case that I have had recourse to the division of the nerve in the fore extremity, success has favoured the operation, it therefore with me is a question which I entertain strong opinions upon.

Ringbone, under any circumstances, must be considered an *unsoundness*.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor BROWN, M.R.C.V.S., London.

(Continued from p. 81.)

BRONCHITIS.

MORE frequently, perhaps, than any other of the lung structures the mucous membrane is the seat of disease; the various forms of catarrh confine themselves to this tissue, and inflammation also seems to attack it more commonly than the serous membrane or parenchyma. It has been already noticed that catarrh will extend to the bronchial tubes, constituting bronchial catarrh; between this condition and that of inflammation there is, however, a distinction to be made. So long as catarrh alone exists, there are no active symptoms, no excitement of circulation nor respiration; there may be painful cough, much prostration, and occasional disturbance of breathing from mechanical obstruction, but no indications of actual inflammation; in bronchitis, however, both the circulation and respiration are of necessity accelerated. The disease may be of the low form, and as much debility be present early in the disease as in the epidemic catarrh or influenza.

Causes acting apparently under precisely similar conditions seem to produce very various consequences. Two animals, exposed to exactly the same influences, shall suffer differently, one perhaps from acute pulmonary congestion, the other from a simple cold. So, in the same manner, the ordinary causes of cold will in certain instances result in bronchitis.

Some peculiarity of constitution, something which is conveniently called idiosyncrasy, must be assumed to explain this; or, in plainer terms, we must accept the fact as it occurs, without in the present state of our knowledge being able to explain it at all.

In the preliminary remarks upon respiratory diseases, it was noticed how colds and influenza occur apparently independently of weather; the same is true of inflammatory affections. Some animals will suffer from an attack after a short journey, the body being heated by exertion as the

phrase goes, and probably exposed to a current of cold air afterwards; whether in the midst of frost or in the middle of summer the effect seems to be much the same. Ordinary catarrh commonly enough advances to bronchitis, and so does sudden or acute congestion.

Young animals are more subject to this affection, as to most others of the breathing organs, than old ones, a circumstance that is not remarkable, when we consider the state of the atmosphere they are compelled to inhale in the stable, and compare it with the air they have been accustomed to before being brought into use; added to which there is the influence of a stimulating diet, probably in abundance, with a very limited amount of exercise. Symptoms will vary in different cases; the really distinctive signs of most diseases are often insignificant in their extent. General signs of derangement are apparent enough, and we do not wonder at the number of affections compressed into one general title of "inflammation of lungs."

The horse will naturally be dull and dispirited, sick animals are not usually remarkably lively; he will not, however, stand obstinately in one position, nor will he manifest any particular desire to avail himself of any openings where he may obtain a little fresh air, on the contrary, he often lies down at intervals, and frequently finds some apparent satisfaction in pushing his head into a corner quite away from the open door, left so for his especial advantage; most practitioners will take it as a sign of commencing recovery when the horse once more faces the light, and stands with his head honestly out in the open air. In a number of cases all sorts of eccentricities are met with, and if any dozen good observers were asked to note down all the symptoms of this or any other form of disease, there would be found to exist many discrepancies in their lists.

The general signs will invariably be sufficient to point to the lungs as the organs affected, and a careful examination of those organs will settle the question of the particular tissue most implicated. Respiration is always quickened, according to the temperament of the patient, from thirty to sixty or seventy in the minute; the breath is always hot, the mucous membranes are reddened, and usually there is a painful cough. The bronchial murmur is very distinct, and higher in pitch than it is in health.

The presence of the mucous r le indicates the moist stage when the air has to pass through the accumulated mucous secretion. The moist stage is very often not accompanied by this sound, but the sound is never present without the

moist stage being established. An examination of the pulse will assist the practitioner to a correct opinion; in number it will vary from sixty to one hundred, but in character it is uniformly somewhat full and soft in the early stage of the disease, only becoming quicker and feeble as debility advances.

Presuming the disease to pass through its stages without implicating any other structure besides the mucous membrane, there will be but little variation in the symptoms; after a few days the breathing becomes more tranquil, the pulse less frequent, the cough more sonorous, and the general appearance more cheerful; but in the majority of acute cases, particularly in young and plethoric animals, the disturbance extends to the parenchyma, deposits take place in the air vesicles, obliterating their cavities; purulent formations occur in various parts commonly connected with distended bronchiæ, the pleural membrane ultimately becomes implicated, and fluid exudation takes place into the cavity of the thorax.

All these complications may be distinguished with tolerable accuracy by auscultation.

Obliteration of the air vesicles by deposits will be indicated by a loss of the murmur over a large portion of the lung, the sound only being distinct in the anterior and upper part of the thorax; large deposits of exudation matter, leading to a state of hepatization are frequent, and invariably give rise to the sibilous sound, which in its turn gives place to the cavernous râle as the deposits are softened in the centre, and cavities are formed containing pus or curdy matter similar to that found in scrofulous abscess in the human subject.

Effusion is of all morbid conditions most easily distinguished, unless peculiar complications should exist to modify the signs. A well-defined grave sound at the superior part of the chest, and the sudden cessation of it at a particular line, all below being obscured, is indicative of no other condition. Various degrees of sound will be noticed in many diseased states of the lung, but the sudden interruption of the full sonorous murmur, and the substitution of nearly absolute silence below a certain point, may be safely taken as a sign of hydrothorax.

Certain conditions may however exist, in which this very characteristic symptom is wanting, when effusion has advanced even to a considerable extent; for instance, when the lungs are adherent to the sides of the chest, the sound at the lower part is apparent; when consolidation of the

inferior part of the lung is present, the murmur is still more audible; and in the event of cavities being formed, the sounds at the lower part of the thorax may be more sonorous than those at the upper part, and yet the cavity shall be half filled with fluid.

In these very difficult cases it will be observed, that in many parts of the chest where there are no cavities or adhesions, the peculiar change in the sounds of the upper and lower parts are still apparent, and if the indications are not under the circumstances satisfactory, they will justify a strong suspicion, which may be readily tested by the simple operation of puncturing the chest.

Not merely to satisfy curiosity is the operation to be advised, but the examination of the effused fluid will materially assist the prognosis; should it prove to be serous, of a yellow colour and transparent, not coagulating, and having little or no sediment, recovery is probable: if the colour is white, the sediment copious, and a general opacity in place of transparency be observed, and further, if under the microscope there are seen many granular corpuscles and pus globules, a fatal termination may be confidently predicted.

Treatment will be exceedingly simple: no active measures are admissible, counter-irritation will stand first, and may be repeated as often as the judgment of the practitioner shall dictate; febrifuge medicine, with tincture of opium or hyoscyamus, may be exhibited frequently; low diet, consisting principally of bran tea during the first stage will be enjoined, and great care taken to preserve a moderate and uniform temperature. Tonics may be exhibited as soon as the acute symptoms have subsided. Tincture of gentian, bark, and nitric acid in small doses, are among the most effective. Sulphate of iron will be indicated when effusion occurs.

Under the most careful treatment cases of bronchitis will frequently proceed to a fatal termination, but as compared with other acute diseases of lungs, it is probably the least destructive of any; especially when it occurs uncomplicated with those affections of heart and liver so frequent in young horses, and to which allusion has recently been made.

(To be continued.)

CASES OF TENOTOMY.

By T. G. WEBB, M.R.C.V.S., and V.S. to the West Essex Yeomanry Cavalry, Bishop's Stortford.

CASE 1.—A chestnut mare, four years old, the property of a shoeing-smith at Coopersale, near Epping. This mare was in a three-stall stable, she got loose, and went into another stall, in which was a chaff-box, with the knife fixed to it. By some means she got her leg entangled in the box, and the knife cut through the skin and flexor tendons of the near hind leg, midway between the hock and fetlock. I was at once sent for, and on my arrival at first thought there was no chance of doing any good; but I set the smith to work to make a patten shoe, having a light bar of iron at the back so as to come near the hock, and an iron on each side of the leg. The mare was then put into slings, and after cleansing the wound, it was dressed with creosote liniment and bandaged. I had a strong bandage passed round the iron bars and the leg, and the mare's head was tied to the rack. Occasionally the wound was dressed with a solution of chloride of zinc.

This case was about three months under treatment, when the mare was turned out, and about nine months after I saw her hunting, and but very little lame.

CASE 2.—Was a well-bred hunter. The owner was riding him with the hounds near Epping, and jumping a fence that had but recently been cut down, the stakes of which were left sharp, he cut his leg, dividing the skin and flexor tendon of the near fore leg. The animal was with difficulty brought to my stables. I dressed the wound with creosote liniment, and had a patten shoe put on the foot, as in the former case. In two months the horse walked home, a distance of ten miles, when he was placed under the care of another practitioner, and I heard that he did well.

CASE 3.—The subject was a black nag gelding, the property of a Mr. P—, of this town. This horse was brought to be killed, being considered useless. The owner, however, asked me to look at the animal, as he thought he was worth firing. I at once said that would be of no benefit, but thought it a good case for division of the flexor tendons. My proposal was immediately acceded to. I operated on

him three days after. I had the horse cast and properly secured, made a longitudinal incision, about two inches in length, between the flexor tendon and metacarpal bone on the outside of the near fore leg, midway between the knee and fetlock, laying bare the nerve, artery, and vein; with the finger of my left hand I kept them back, and with the knife in the other hand, I at once divided the tendons, taking care not to cut through the skin on the opposite side. The ends of the divided tendons immediately separated from each other to the extent of about an inch and a half. I then placed my knee in front of the fetlock, and with a little force the leg was made to assume a straight position. The animal was now freed from the hobbles, and got up; a bandage of fine tow with creosote liniment was applied, and sometimes the wound was dressed with a solution of chloride of zinc, and in two months he was sent to work in a cart, and continues to work well to this day, wearing a shoe elevated at the heels.

FILARIA OCULI.

By "MILES."

I FORWARD to you a worm extracted from the *off* eye of a horse by a friend of mine. Three months ago, a worm was taken from the *near* eye, and in five weeks after the operation the animal had quite recovered the sight thereof, there being only a little opacity remaining where the opening had been made into the anterior chamber through the cornea. Seven weeks subsequent to this operation, a worm was observed floating about in the other eye, causing, of course, much opacity, and nearly total blindness of that eye. Mr. H— again operated successfully, and the case is now doing well. The horse will quite recover the sight of the *off*, as he has already done of the *near* eye.

The first worm was lost, as it escaped with the aqueous humour, and got among the straw of the casting bed. There was, however, no doubt whatever as to its being a worm similar to the one sent you, for we saw it as plainly as possible before and during the preparations for the operation.

The horse from whom it was taken is a healthy Arab, eight years old. Is it not strange that a second worm should appear, and in the other eye too? I have seen this occur once before, but I believe it is not very common.

On each occasion Mr. H— put the patient under the influence of chloroform before operating. The opening through the cornea was made with a " Beer's knife," such as surgeons use when operating for cataract.

[We need hardly say that we are obliged to " Miles" for forwarding to us the extracted worm.]

THE OPERATION OF " FIRING " FOR ROARING.

By J. G. CATTRALL, M.R.C.V.S., London.

IN answer to Mr. E. Coleman Dray's letter of inquiry that appeared in the *Veterinarian* of December last, relative to the new operation for roaring, and its effects, and which has not yet been answered through the medium of your pages, permit me to say in reply that the operation mainly consists in the application of the actual cautery by means of a flat iron around the dilator muscles of the larynx, and continued down the whole course of the trachea on the left side of the neck, being over the region of the left recurrent laryngeal nerve, which accompanies the jugular vein and carotid artery.

I beg also to inform the inquirer, and the profession generally, that I have had recourse to the above remedy in very many cases of roaring, both as the result of protracted influenza, and arising from an hereditary predisposition, and the results have proved unsuccessful in every case.

I may be permitted to add, that it affords me much pleasure to contribute any little information I am able, tending to promote the well-being of our profession; and my opinion is in accordance with that of Mr. E. C. Dray's, namely, that your columns are the most fitting place for our professional discoveries and investigations to be recorded. But when some of our leading practitioners are the first to make a sporting paper the vehicle for their reports, I think that as members of a common profession we are justified in trying to suppress such a practice, which can only be accomplished by writing to the same journal. In the months of June, July, and August of last summer, the subject relating to the new operation for the cure of roaring in horses continued to be all the rage among the horse-masters of the west end of London, but more particularly among our cab proprietors. Indeed it was so much so, that it became almost a mania affecting these knights of the whip. Who-

ever was in possession of a horse affected with the above malady, more especially from its being described in *Bell's Life*, by our friend Mr. Goodwin, as incipient roaring, at once had recourse to the actual cautery. Some of them selected the flat iron of the laundress, while others preferred the ordinary firing iron, believing it to be a more scientific mode. In fact, it became almost as popular as Major's British remedy, that was once announced to be a cure for spavins, ringbones, and all exostoses occurring in the horse, until ocular proofs were adduced that such was not the case. The above facts being the result of my own experience, induced me to write against the absurdity of this practice, after stating the true cause and nature of roaring, and which, I am happy to say, had the desired effect.

COLOURLESS MUSCULAR TISSUE IN A COW.

By W. CARLESS, M.R.C.V.S., Stafford.

A CURIOUS case of this kind was brought under my notice by a butcher in this town, who sent for me to inspect the carcass of an animal which he had slaughtered for the Christmas market.

When I arrived, I was surprised to find that the whole of the muscular structure throughout the body was of a light grey colour; in other respects the carcass was every thing that could be desired. On enquiry I learned that the animal had been bought from a farmer in this neighbourhood for nearly £20, and that not the slightest suspicion of anything being wrong was created in the mind of the butcher, until the carcass was being cut up for sale, when the above named appearances were presented.

HÆMO-ALBUMINURIA IN MARES.

By the Same.

SEVERAL cases of this kind have come under my notice within the last few weeks, one of which I think may possess some interest.

The subject was a well bred cart mare, in high condition,

ten or eleven years old, and had been used upon a railway up to within a few days of her illness. I was requested to attend her on the night of the 26th of December last; when I arrived, I learned that she had been brought to this town, a distance of three miles, for an empty cart, and that while returning home she began to sweat profusely, and that it was with difficulty she could be got to the stable.

I found her lying down, straining violently, and voiding small quantities of black-coloured urine, breathing with difficulty, visible mucous membranes injected and tinged yellow, extremities cold, pulse seventy per minute, several parts of her body were enormously swollen, but principally the shoulders and hind quarters, the swellings being very hard and cold; when she attempted to move, she could only extend her hind feet a few inches at a time, bowels constipated and accompanied by slight griping pains.

I administered a purging ball, containing six drachms of aloes, and ordered her loins and the swollen parts to be fomented with warm water continuously until I saw her again. I left a ball containing one drachm of opium and half a drachm of calomel to be given in case the straining continued, which was accordingly done.

27th 11 a.m.—I found her better, she had eaten a little bran mash, and drank some chilled water, and had left off straining. The pulse was about sixty in the minute, the swellings somewhat diminished, extremities warmer, bowels beginning to act, but she was still very stiff when moved, and the urine very dark coloured. I gave no medicine, ordered the fomentations to be continued until night, and the body to be well clothed afterwards.

28th.—Animal much better, the swellings have nearly all disappeared, the medicine had acted well upon her bowels, the stiffness is passing off, the visible mucous membranes have assumed their natural colour, the extremities are warm, the pulse lowered to about forty-five in the minute, and the appetite is returning. I gave her a vegetable tonic ball, and left another for her to have on the following day.

30th.—She has continued to go on well, and to all appearance there is not now much the matter with her. The urine also is nearly of its natural colour. Repeated the tonic ball, and ordered her a few minutes' walking exercise daily.

She resumed her work on the 4th of January, and has continued to go on well since.

The other cases were similar to the above, and all terminated favourably under the same treatment.

RETROSPECTS OF VETERINARY PRACTICE.

By "MENTOR."

LAMENESS ARISING FROM DISEASE OF THE LIVER.

A WHITE short-horn cow was reported very lame in the *near fore leg*, and which was said to be caused by "*romping after the bull.*" The animal being found in an adjoining field, and a stone wall dividing the two being thrown down, were evidences too conclusive to be overlooked, as the owner considered.

The symptoms are extreme halting and dragging of the limb along, flexion being principally performed by the knee joint in progression. During rest the whole weight can be supported, no indication of pain whatever then being manifest.

There is no swelling, no pain on pressure, nor stiffness of any joint to be detected in a most searching examination, the patient being a very quiet animal in the house, and allowing the limb to be manipulated in any way whatever.

Here, I thought, was a conflicting case, and I considered that although the method of using the affected member was very much in favour of lameness in the shoulder, yet other symptoms were wanting to strengthen such a view.

The pulse was found to be quick, numbering about sixty-five in the minute, but weak; the horns and ears temperate; the muzzle dewy; the bowels reported to be regular. The animal was out at grass during the day and housed at night, being the property of a "milk-seller," whose usual practice was to hire a field during the summer months, to which his cows were driven each morning.

I must confess I was somewhat perplexed; but keeping in mind the journey to and from the pasture, and the broken down stone wall, I still considered it to be a case of "shoulder lameness," and said—

"It must be so, Plato thou reasonest well."

I therefore made a bold attack, by applying

Ol. Cantharis, \bar{z} iv, cum
Ol. Tiglii Sem., \bar{z} ij;

to the affected parts, advising an extra amount of friction to ensure success. A strong dose of cathartic medicine was also administered, and a soft diet with rest enjoined.

The next morning, on my way to the cow-house, the owner informed me the animal was better as touching the

lameness, but "as yellow as gold over the shoulders, neck, and particularly the affected side."

This was found to be the case, together with a large accumulation of dandriff partaking of the same colour. The milk, too, was nearly gone, about which the owner evinced greater concern, I thought, than the future well-being of the animal.

I now threw aside the idea of the stone wall and the bull, particularly as I afterwards learned that *he* was a myth; the animal having strayed in consequence of the wall being down through the act of some mischievous urchins who roam at large in the vicinity of all large towns.

The cathartic having acted well, it was succeeded by alterative doses of calomel. The appetite continued good—at times it was ravenous; the milk returned; the lameness entirely disappeared after a few days, and in a fortnight she was quite well.

From this time—May to January in the following year—I heard nothing more concerning my patient; when happening to meet the owner, he said she had been recently slaughtered, and the liver was found "rotten."

There appears not only a great scarcity of information as to the symptoms that decidedly characterise the variety of lameness which arises from affections of the liver, but also of actual cases of this kind: probably one fact depends much upon the other. Yet I am inclined to believe that such often occur, and are dependent, too, upon very slight causes wherein there are no well-marked symptoms of a decided case of lameness; or, in other words, although there are indications of perverted function in the limb, yet the cause, arising from an abnormal condition within—namely, the liver—by no means establishes a regularity in the kind of lameness; although the affection may savour strongly of shoulder-lameness in one case, yet in another the impediment to correct progression is equally as great, but evidences are wanting to enable one to fix upon the joint, or part of the limb affected. This may not appear surprising when is borne in mind the fact that, disease of the liver will go on until it puts an end to the animal's existence without any lameness existing, as in icterus, &c., and, in several cases which have come under my observation, any symptoms of internal disease, otherwise than could be supposed from a want of good condition. One case, I remember, terminated in paralysis, the animal becoming comatose within an hour, and died whilst in that state. Nothing during life warranted the belief that any internal disease existed, as reasonable

allowances could be made for the low condition—the time of year being the supposed cause—which a more liberal diet was expected to remove; but in this instance, no doubt, the latter hastened it to a termination. A detail of this case will be given in due course.

Another case of lameness, supposed to arise from some derangement of the liver, occurred in a cart-horse. He was in the act of walking slowly with a load of coals, when he was observed suddenly to drop with the left shoulder, become slightly lame, and he continued so for three miles, to my establishment. Upon a careful examination nothing wrong could be found in connection with the limb, therefore I determined to see him at the owner's residence.

Some hours later, when out of harness, he was found to be no better, yet the animal was all life and gaiety, the appetite good, and the general system apparently healthy. A dose of physic only was administered, and the next day he was all right.

Some months afterwards I heard that the animal had died suddenly, although I never learned the cause. The owner also said that he fell lame several times in a manner somewhat similar to that which occasioned his visit to me, but nothing was done to him, the affection disappearing without any treatment. He however sold him in consequence of this inconvenience.

(*To be continued.*)

CASE OF RUPTURE OF THE STOMACH.

By JAMES STORRAR, Cushnie, Banff.

IN the April number of the *Veterinarian* for the past year there is an account of a case of ruptured colon by Mr. Billington, which it is supposed had taken place several days before death. Besides this, other articles have appeared in more recent numbers on the same subject; and keeping these facts in view, it has occurred to me that the simple recital of the symptoms, treatment, and *post-mortem* appearances of a case that came under my care a few years since, may throw some light upon the question of these occurrences.

The horse of which I now write belonged to Andrew Wallace, Esq., Chaple of Leggat. He was a strong, active, spirited animal, seven years old, and in excellent condition. He had been under treatment for colic by a blacksmith before I saw him, having frequently had rather severe colicy

symptoms, which had usually been successfully treated with Tinc. Opii et Spt. Æth. Nit. Occasionally also he had been purged. Still, after partaking of food severe abdominal pain came on, which caused him to roll very violently, and sit long and persistently upon his haunches.

The swallowing a small quantity of water brought on the same symptoms, although, as a rule, he drank but very little. When these paroxysms were over, he appeared well, was hearty, and when walked out playful; his coat was sleek, and for hours together he was apparently all right until he got food again.

Diagnosis.—Some peculiar spasmodic disease of the stomach, induced by the introduction of food or water into that organ. Yet food and water he must have. Let him have good food in very small quantities, and given very often. Tonic medicines were given very cautiously in boiled barley. Hay caused great pain if more than a mere handful was given; he was therefore only allowed it in handfuls.

Under this treatment the animal continued to do well, only once or twice having a slight return of all the unfavorable symptoms when the quantity of hay was somewhat exceeded. He was so playful when out at exercise, and looked otherwise so well, that I allowed him to be put to work. He was put to the plough, and did well for eight or ten days. Gradually his hay had been increased, with no bad effects, and he was now considered altogether better.

I was, however, called to him one night, after a Sabbath day; he was in the stable, without stint of hay, when he was again taken ill, but was dead before I arrived. I had an examination made in the morning, and upon opening the abdomen the existence of a rupture was certain from the appearance of the ingesta, and its being scattered over the whole of the peritoneum. Closer examination showed that the stomach was the ruptured organ. It was torn from side to side along its greater curvature. But what are these bodies like strings hanging around the opening? Let us examine them. They are shreds of peritoneum, drawn up upon themselves, and in numerous instances they have formed round, bead-like-looking ends. What next? The muscular coat has thickened, fleshy edges; granulations are formed all around the wound upon this coat, and only the mucous membrane appears to be recently torn. The inner opening is not nearly so large as the rent along the peritoneal and muscular coats, and, of course, no healing process has been going on there.

The whole of the symptoms were now to my mind at

once accounted for. The stomach had been at the first ruptured in two of its coats, and that at least four weeks before death; only the mucous membrane had been left entire. The muscular coat being so extensively torn was the cause of all the pain when the stomach was distended by food, with the ugly symptom of sitting upon the haunches. The sleek, healthy-looking skin was accounted for because the mucous coat was not implicated.

The treatment was successful so long as it was continued; but it was not continued long enough to allow of a complete recovery. From the extent of the lesion it must have taken months completely to cicatrize.

Since then I have had a case similar in every particular, and I treated it according to the knowledge I obtained from this case. The mare was often fed with nutritious food in small quantities, and for months could not be allowed a full supply of anything; she, however, ultimately recovered, and I kept sight of her for years, during which time she had no return of any of the symptoms. Was Mr. Billington's case of this kind? And had the mucous membrane stood out longer than the others? were the questions that at once suggested themselves to me.

OPEN STIFLE-JOINT.

By J. EDGE, Student of Veterinary Medicine with
W. COX, M.R.C.V.S., Ashbourne.

WE were called on the 1st of November last to visit a brown filly, belonging to Mrs. Wright, of Bassett's Wood, near this town. We found her suffering from a contused wound on the stifle-joint, just below the patella, the result of a kick from another horse. The wound was probed, but did not seem of great depth, although the swelling was considerable.

Treatment.—Fomentations, and the administration of alterative and fever medicines. On the 3rd she was again visited, and an escape of synovia perceived. On re-examining the wound, we found the skin and tissue covering the joint were torn from it, as if the calkin of the shoe might have broken the skin, and become fast in it; the actual opening into the joint would admit of the introduction of the thumb, and the outer surfaces of the bones could be felt for several inches in circumference; the tumefaction around the orifice was much lessened; pulse quiet.

The treatment consisted in the application of a dressing of caustic tincture, held to the opening, when a coagulum of synovia formed, blocking up the entrance into the joint; over this was placed a pledget of tow, saturated with tincture of myrrh, which was held on constantly by relays of men. For several days no escape of synovia was seen, and the general symptoms were favourable. On the 12th she became restless from fatigue, when slings were tried without success; they only irritated her, and in plunging she forced out the plug formed, and the synovia was seen flowing from the opening almost as freely as ever. We visited her, and proceeded at once to apply the actual cautery, passing it slightly over the surface of the wound; and a blister was subsequently rubbed in around the orifice. The application of the tincture of myrrh was ordered as before, powdered myrrh being scattered on the pledget held to the wound. This treatment was continued for several days, the case progressing favorably, when the animal was allowed to be loose, and to rest herself against the wall. In the course of ten days or a fortnight she was again visited, when the opening into the joint was found to be closed, and the wound healing up. It was dressed with emollient oils, and is now quite healed.

There is remaining a little thickening of the skin over the joint, and for this we have applied the biniodide of mercury with blister ointment.

Facts and Observations.

DISEASED CATTLE.—The bill now before Parliament, the object of which is to make further provisions for the prevention of infectious diseases amongst cattle, proposes to inflict a penalty of twenty pounds for their public exposure. A justice of the peace is upon application empowered to make an order for the removal of infected animals, and the expenses incurred may be recovered from the owner in a summary manner. The sale of diseased cattle, with a knowledge of the fact, is to be deemed a fraud in addition to the penalty imposed for the offence. Special regulations are laid down by order in council as to cattle, and provision is made for the appointment of a cattle inspector, by the local authorities, whose duty it shall be to examine all animals exposed for sale in any market or fair within their jurisdiction, and to exclude any he may deem to be affected with any contagious disease. Non-compliance with the

orders of this official renders the offender liable to a penalty of five pounds. Railway and canal companies and common carriers may refuse to carry diseased cattle, and the cleansing and disinfecting of boats, trucks, and other vehicles in which such animals might have been carried is effectually provided for, to be enforced under penalties.

NEW TEST FOR NITRIC ACID.—Mr. R. Kestings asserts that the alkaloid brucine is a most delicate test for nitric acid, being coloured rose-red by water containing only the 100,000th part.

SPECTRUM OF THE LIGHTNING.—M. L. Grandeau, analysing, by means of the spectrum, the lightning flash, observed in it rays indicative of the presence of nitrogen and hydrogen. These he refers to the production of ammonia and nitric acid, known to result from the passing of electrical discharges through the air. Otherwise, and at first, the spectrum afforded nothing beyond the electric spark.

PLEURO-PNEUMONIA AND SCAB IN AUSTRALIA.—From the Sydney papers sent us we learn that pleuro-pneumonia has been spreading in the Muscumbidgee district. It appears now to have set in so virulently, and extends over such an immense tract of country, as to make any attempts to check it almost hopeless.

The prevalence of scab amongst the flocks in the interior continues to excite the apprehensions of those who are interested in pastoral properties. Several numerous attended meetings of the largest squatters in the country were recently held in Sydney, and as the result of their conferences, a bill was drafted, the main principle of which was—the immediate destruction of all infected sheep, and the compensation of the owners at the rate of five shillings per head, with threepence per month for the growth of the wool. At a meeting of squatters held at the Exchange, the attendance at which represented about two millions of sheep, the bill was almost unanimously approved of. The bill was introduced into the Assembly by Mr. Robertson, but it met with very strong opposition, on the ground that it would cause a ruinous destruction of property, and it was rejected by a very large majority. A temporary bill has since been rapidly passed through both houses, suspending the operation of a portion of the present Scab Act, as otherwise a large number of sheep would have to be destroyed. Another bill is about to be introduced, providing for the adoption of curative measures.

THE VETERINARIAN, APRIL 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE ADVANTAGES DERIVABLE FROM THE PRESS, AND INDIVIDUAL LABOUR TO THE PROFESSION.

EVER since we have undertaken the duties of Editors of this Journal, we have certainly not had to complain of want of contributors to it. In proof of this statement we might refer to the increased number of our pages, and even these have, from time to time, to be added to. Nevertheless, looking at the profession as a whole, and numbering, as it does, now above 1500 members, we cannot help expressing both our surprise and disappointment that comparatively so few of them think it worth while to place on record those facts, in connection with our division of Science, which could not fail both to interest and to profit the entire body, while, at the same time, they would tend to raise us in the estimation of a discerning public.

There are, doubtless, many who are critically watching our doings, and who justly anticipate that having made those advances by which we have been lifted out of the darkness and uncertainties of farriery,—the mud and mire of ignorance and pretension,—proofs should be given by us of the benefits that are to be derived from the light of Science illumining our pathway and governing our actions. And are we for ever to continue thus inactive? Can nothing be done to arouse us from our mental slumbers, and cause us by co-operation and union to promote the continued onward progress of our Art? No little has been effected, it is true; but it does not yet amount to what we have, as a body, a right to expect. The work, however, rests with ourselves. Each has a personal interest in it, and all will derive a corresponding good from it, if so be there is a determination evinced by all to advance the common inte-

rests of the profession. As a compact body, we must resolve in our own strength to "go on." The present age demands activity and open demonstration as evidences that we are earnest and honest in our desires to work for the general weal. All selfishness must be thrown aside, as unworthy of men whose minds have been liberalized and expanded by scientific truth. It is by thus acting, and thus only, that we shall in the end reap our just reward.

We have written thus much, somewhat impulsively. It may be thought even warmly, but certainly not with feelings approaching to censoriousness, for this would not become us. Some little disappointment we have confessed to have felt; still we do hope hereafter to have such an increase of contributors as the Journal has hitherto never experienced; liberally, and for so long a period as it has been supported by the profession.

And surely there are none who will gainsay the advantages that are to be obtained from the press in connection with medicine; more especially that which is commonly designated the periodical press. Lest, however, there should be, and words of ours might fail to convince them of their error, we will employ those of others; premising that, although primarily written for the sister profession, we believe they will with equal force apply to our division.

"In the medical press we have an important engine of progress. The existence of this power and its flourishing condition depend greatly upon the tendency to association labour. Into this treasury is poured the labours of the best men in the profession, and its directors shape and produce these exertions so as to render them useful to the medical public. The medical press is to the body medical what medical men are to the public. The press, more than any other influence, moulds the profession as a body politic. By its agency extravagancies are checked, grievances pointed out and redressed, discoveries made known and abuses prevented. In a word, the press, as a whole, is an embodiment of the public opinion of the profession, and when it ceases to be this it will fail in its influence. It is perfectly democratic, as open to the voice of the youngest student as to the utterance of the highest persons in the profession. It is a great educational instrument, modifying the laws, institu-

tions, opinions, habits and manners of the profession, more than any other single agency. In consultations two or three might meet, in societies medical men might gather by hundreds, but in the press alone could they all, as it were, stand face to face, and enjoy the privilege of an exchange of thought. It alone could deal with the thousands of the profession as with one man. Some might deplore that ephemeral writings tend to displace the solid tomes which were produced when the periodical press did not exist, but they must accept the age as they find it, and on the universal diffusion of the products of thought, the incessant collision of thousands of minds busied with the same subjects, more truth and progress are elicited than were ever produced by solitary members."

And may we not be permitted to add to this, that there are names in connection with the medical press from among ourselves whose literary efforts have not only not disgraced our art, but, on the contrary, have tended much to its advancement; and, in fact, have given to it both an impetus, and a *locus standi* it would not have possessed without them? It is true, too true, that these labours are by many thought slightly of, and by some even, perhaps, contemned; yet this detracts not from their real worth or importance. In the end their worth will be seen, and duly appreciated and acknowledged.

Sincerely do we hail the multiplied efforts that are being made freely to disseminate knowledge, being convinced that exclusiveness becomes not men of science, and secrecy is worthy only of the charlatan, who is always bold and presuming because he has nothing to lose, while by him a principle never yet was developed, and never will be. He works not to accomplish it. His aims are purely selfish. This is the little circle by which all his desires are inclosed, and here his thoughts and wishes centre. Such conduct is altogether unworthy of a professional man, who should ever be actuated by higher and nobler motives,—motives conducive to the general good of his fellows, and the amelioration of the sufferings of those animals that are placed lower in the scale of existence than he is; since this latter constitutes his particular domain.

Moreover, all around us betokens intellectual progress. When the Premier of England, during the interval of relaxation from his official duties, not only does not refuse but delights to preside at meetings of ragged schools and brigades of shoeblacks, and, in common with others of the aristocracy, urges upon the members of mechanics' institutes the necessity of their becoming acquainted with the sciences; not only as they may apply to their particular calling in life, but to extend their investigations to one and all, as means and opportunities present themselves; when there are collegiate schools for the working classes, and encouragement is given to emulous students to undergo examination at the Society of Arts; while both middle and upper-class competitive examinations are instituted for civil and military appointments, and the science certificates for teachers in artisan classes are yearly increasing, it is surely required of us, as a profession, to be up and doing, lest we should be overtaken and distanced in the race of mind. Fast are the chilling frost-mists of ignorance being dispelled by the bright rising of the sun of science, which in this our day seems to have put on the seven-leagued boots of the fairy tale, so rapid and so wide are its strides. What has been said of Truth, may also be said of her hand-maiden, Knowledge. "It may be obscured, may be veiled, may be hidden, but it shall nevertheless be ascendant. It shall fill the universe with a flood of molten glory. It shall bathe the mountaintops, and crest the ocean waves, and light up the valleys with a glow of heavenly beauty, and ignorance shall flee into the depths of fathomless abyss, for it shall not find a resting-place for its foot upon the earth."

"Spes magna futuri."

Extracts from British and Foreign Journals.

CATTLE DISEASES.

To the Editor of the Times.

SIR,—The state of the public mind at this time on the question of cattle disease and the supply of wholesome meat will, I trust, be a sufficient apology for my troubling you with this communication, and asking you to give it a place in your valuable columns.

Within the last week my attention was directed to a statement in one of the leading agricultural papers to the effect that the “lung disease” was on the increase in the London dairies, and that “in the fertile vale of Aylesbury the disease has”—I quote the entire sentence—“for three months been extremely prevalent, and the cases are generally of a severe and fatal character.”

Feeling that these statements might have considerable weight just now, and believing from my previous information that they did not fairly represent the facts, I put myself in communication with several farmers, cattle-dealers, veterinary surgeons, dairymen, and others in London and its immediate neighbourhood; and I also wrote to the veterinary surgeon to the Vale of Aylesbury Cattle Association. The results are now before me, and I have the satisfaction of saying that my informants from the London district are almost unanimous in stating that the lung disease has not prevailed to any serious extent for several months, and that in many establishments it has had no existence at all; and, further, that in the isolated instances in which it has been present its virulence has been considerably diminished.

My information from Aylesbury is even more conclusive on the point. My correspondent thus writes:—“With respect to pleuro-pneumonia—lung disease—possibly I cannot do better than give you extracts from my case-book, and forward with these a copy of the rules of our association, at the end of which you will find a list of the members with the numbers of the cattle insured within a radius of ten miles of the town of Aylesbury, no very inconsiderable number to form a conclusion as to the extent of disease of any kind.” “Of cases of pleuro-pneumonia we had in May, 1863—3; June, 2; July, 12; August, 9; September, 15; October, 3;

November, 4; December, 1; January, 1864, 2; February, 0; making in all 51 cases in ten months, but only ten during the last five months."

On referring to the list alluded to I find no less than 11,310 beasts insured, and 150 calves, making a total of 11,460, among which, as we see, there have been only 51 cases of lung disease during ten months; or, speaking in general terms, only five cases a month in this large number of animals.

Trusting that these facts may tend to place the matter of cattle diseases in its true light, and somewhat allay the excitement in the public mind on this question,

I beg to remain your obedient servant,

J. B. SIMONDS, Professor of Cattle Pathology
to the Royal Veterinary College.

March 5.

CATTLE DISEASES.

(From the 'North British Agriculturist,' March 16, 1864.)

"SIR,—My friend Professor Dick has just informed me that he has received an official communication from the Government, to the effect that steppe-murrain has made its appearance among the cattle in Schleswig, and as this intelligence, when made public, will be apt to add more fuel to the undue excitement already existing with regard to the subject of cattle disease—excitement, or rather panic, which I cannot help thinking, owes much of its morbid influence to the activity and ingenuity of sensation-mongers and alarmists, I have taken the liberty of asking you to give insertion in your journal to a few remarks from my note-book on what I have seen of this class of maladies in two campaigns—one in the Crimea, the other in China.

I trust that they may tend, with the publication of the practical experience of others, to allay the very disquieting apprehensions which weigh so heavily on the public mind, that seemingly nothing will suffice to reassure it but severe legislation, and the adoption of extreme measures which, enforced, would weigh heavily on stock proprietors, obstruct the interests of commerce, and would prove a great detriment to the general welfare of agriculture, besides proving a constant source of grievance and fraud—results the very opposite of those sought to be attained.

It is an undoubted fact that want of cleanliness, exposure

to the weather, dense packing on board ship or in confined spaces, fatigue, and insufficient or improper food or water, will predispose to, or excite diseases of a most formidable character; hence it is that in the rear of all large armies in the field epizootics of a fatal tendency are almost certain to become manifest among horses as well as cattle, and thus occasion serious loss.

In the Crimea, I was encamped near a large division of the English Commissariat, and so great were the depredations caused by typhus and dysentery among the cattle, that I was frequently asked to give my opinion as to remedial measures. From what I could learn, these animals were shipped in good health, and their appearance certainly went far to prove that they had not been suffering from any chronic disease, but that their ill health had commenced with the hardships and privations of transport on ship board, and the inclement weather and insufficient food after landing. The French losses in the winter and spring of 1856 were much heavier than ours—apparently from the fact that their ships were more crowded, and cleanliness was less attended to.

I took every opportunity of satisfying myself as to the contagious or non-contagious nature of the epizootic, and am decidedly of opinion that there was nothing to induce anyone to consider the disease as contagious or infectious.

No malady of a like character made its appearance among the oxen belonging to the Tartars, or the other landed proprietors, either in the valley of Baidar, or towards Simpheropol, so far as I could learn.

The British troops provisioned on these cattle,—I will not assert that the animals which had died were issued as food—were never in better health.

In the spring of '60, when it had been determined to despatch a large expeditionary force to the north of China, large depôts of cattle were collected at Hong Kong for the purpose of supplying the army with meat, as well as land transport. These beasts were purchased and brought from great distances in the interior of China, and were conveyed down the rivers towards Hong Kong in small *san-pans* or native boats, huddled as closely as they could be crammed, and though perhaps kept in tolerable condition by hay, yet they must have suffered much from the long confinement, want of water, and extremes of temperature, as well as the heavy evening mists. The consequences were, that no sooner had they arrived at the depôts than numbers were attacked with acute dysentery of so severe a character that death often took place in twelve hours from the beginning of the attack.

Strange to say the animals in good condition were those most disposed to be first attacked.

On inquiry I was informed that no disease of that description was then known in the districts from whence these oxen were brought, but a very intelligent Chinese drover, who superintended one of the depôts, informed me that the affection, though not often seen, was known to his countrymen as *Low-peng* or "belly sickness;" that the causes were fatigue and bad weather, and that the remedy was *rice-water*.

Few, if any, of these bullocks died in transit to Hong Kong, but almost as soon as landed many were seized with the most urgent symptoms, and died.

I may mention that at one of these depôts, where there was no shelter by night or by day, the deaths were far more numerous than at another where temporary mat sheds were erected, and that after a rainy day or a chilly night a larger mortality prevailed.

Everything possible in the way of isolation of the diseased from the apparently healthy, and the exhibition of nourishing food, as well as medical treatment was tried, but without much success. The death list numbered sometimes thirty and forty a-day. So serious indeed was the loss, and so alarmed were the authorities, that on the sailing of the expedition from Hong Kong I was ordered to proceed to the north in a large ship freighted with oxen for the purpose of observing and reporting on the epizootic in its several stages. This report was forwarded to England for the information of the Secretary of State for War.

Only those animals which appeared in good health were embarked for service, and every available precaution was resorted to for the maintenance of strict sanitary measures. Yet the sickness in the various transports was very great—as many as seventy and eighty dying in a cargo of about two hundred during the ten or twelve days' voyage to the rendezvous in North China.

On arrival at Talen-whan Bay in Mantchuria, it was found necessary to disembark the entire army and encamp on the shores of the bay until the French were ready. No sooner were the southern Chinese bullocks landed than the direful malady ceased as if by magic, and they remained on shore about a fortnight, were re-embarked again, and conveyed without a single casualty to the landing near the Taku Forts, from whence many of them found their way to Peking with the army without a single symptom of the epizootic reappearing.

I may notice that a large number of Japanese bulls—reputed very hardy and enduring in their own country—were

purchased at a high rate for purposes of transport, but scarcely were they embarked for China when they were attacked by diarrhœa, and this, with low fever, carried off a great number, leaving the others useless, save as food.

To exhibit still further the influence of confinement and an unnatural mode of life in the production of disease, I may refer to another unfortunate outbreak of an epizootic which also occasioned a good deal of loss and inconvenience. For the rationing of the Sikh troops employed in the expedition, a large number of goats—diminutive creatures not much larger than an antelope—were purchased in Chusan and the neighbouring islands. These were in perfect health when purchased, but after being collected in droves and put on ship-board, catarrhal fever made its appearance among them, and scores died just as dogs die in distemper. One ship sailed from Chusan with some 350 on board, and arrived at Talien-whan with about thirty or forty.

Even the sheep brought from Shanghai and other places did not escape similar diseases, though there was no possibility of their having derived them from contagious sources.

Thus far I have traced some diseases which, I am certain, owed their origin to hardships and altered conditions of life.

With regard to their contagiousness, I could discover no facts to satisfy me that they were so; and though every care was exercised to segregate the sound from the unsound as quickly as possible, yet they did not seem to be checked in the slightest degree. But concerning their non-contagiousness, there is one fact which, I think, deserves special mention. At one of the Hong Kong depôts, when the Chinese oxen were dying by the dozen, a battery of Indian gun bullocks was encamped for more than a fortnight within a few yards of the diseased, yet not a single one was attacked by the epizootic, either then or during the campaign, and the same immunity existed also amongst the oxen employed by the Chinese in the rice fields around these depôts, as well as amongst the cattle kept by Europeans in Victoria, a mile or two away.

The Chinese gladly avail themselves of the glorious opportunity afforded of laying in a stock of provisions by removing all the dead bodies from the camps, or dragging them from the ships to the shore, there to be dressed and prepared as food; and neither among them nor yet among the European sailors, who were not slow in cooking and eating this diseased meat when they got the opportunity, did I hear of any dreadful pestilence having punished them for their temerity.

I have thus endeavoured to lay before your readers, and

those specially interested in cattle diseases of a specific nature, a few facts and observations from somewhat hurriedly taken notes, and while believing that it is the duty of every one concerned to do his best to promote the interests of the community by endeavouring to suppress the sale of what are really diseased beasts, or in checking the desire of the unscrupulous to dispose of that which is unfit for human food, yet I am inclined to the opinion that there is a good deal of unwarrantable fuss, and what plain-spoken people would term "humbug," added to strong exaggeration of facts, and great imaginary evils, mixed up with what undoubtedly is truth and matter for investigation in the epizootic, which were certainly known and wide-spread, years before they were supposed to be fraught with such danger to the consumers of animal food, as has been represented.

I do think that this so-called pressing danger is questionable until it can be shown that it really exists, and until a certain number of well-attested facts prove it to be so. Many of those reputed contagious diseases which are supposed to contaminate to an injurious degree the flesh of the animals affected by them, and which give inspiration to the imaginations and speeches of our public-spirited men, are not so dangerous as they would fain have us believe. For example, aptha, or foot-and-mouth illness, is a simple disease, the contagious nature of which is yet a matter of doubt with some of the best authorities, and the speedy cure of which, by the adoption of easy hygienic measures, is a popular fact, and does not impair to anything like an injurious degree the nutritive value of the flesh. Surely, then, such a trifling illness need not call for such alarm, or deserve such stringent laws. If legislation interfere at all, it ought only to be to warn proprietors of the existence of the disease, and to suggest simple measures for its limitation and suppression.

The innocuousness of the flesh of sheep suffering from *variola ovina*, or "sheep-pox," when used as food, is a positive fact. But I need not extend this letter to any greater length by offering examples which are numerous enough, and which would only go to prove that there is not so much need for very active legislative interference as the terror-stricken or zealously patriotic would have us suppose.

I am, &c.,

GEORGE FLEMING, V.S., F.R.G.S. : F.A.S.L.,
"King's Own" Hussars.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire.

RESEARCHES ON THE INFUSORIA OF THE BLOOD IN THE
MALADY KNOWN AS APOPLEXY OF THE SPLEEN (SANG
DE RATE).

By M. C. DAVAINÉ. (Sitting of the Academy, 27th of July, 1863.)

(Continued from p. 192.)

I WILL not at present raise the question whether the Bacteria of splenic apoplexy in sheep, and other animals inoculated from them, act as animalculæ or as ferments. I hope that by further observations I shall soon be enabled to throw some light on this subject; observations which by being extended to those maladies in man that are more or less analogous, will acquire a greater degree of interest. I will for the present confine myself to signalize one fact, which I believe to be new. An examination of six animals attacked, or that had died of splenic apoplexy, have always shown in their blood the existence of the same microscopic beings, though these corpuscles had evidently been developed during the life of the infected animal; while their relation with the malady which caused the death of the animal cannot admit of a doubt.

*Continuation of these researches at the sitting of the 10th
of August.*

The results of my first investigations on the infusoria of splenic apoplexy, communicated to the Academy at its sitting, July 27th, 1863, have been fully confirmed by other researches.

In fourteen inoculations performed on rabbits with fresh infected blood, arising from the presence of the Bacteria, fourteen times have similar Bacteria been reproduced, and the death of the inoculated animal has invariably followed. In several cases the infusoria have been observed two, four, or five hours before the death of the inoculated animal. In several cases the blood taken from the animal while yet alive, has transmitted the malady, and caused death by the Bacteria.

The Bacteria develop themselves in the blood, and not in any particular organ. When, by a persevering investigation,

one has discovered in the beginning of the infection some of these corpuscles, they are then very short and few, but they are soon seen to multiply and grow rapidly, their complete evolution being accomplished in a very few hours. A rabbit, in the blood of which were found but a few Bacteria, not more than from the fourth to the sixth of the thousandth part of a millimètre in length, died at the end of four hours. Its blood, examined immediately after, contained a considerable number of Bacteria, some of which were the longest I had yet seen. They had attained the length of the five hundredth part of the millimètre. In some animals these corpuscles are generally longer than in ordinary cases; but they present no other difference, and their number is then generally less. The length which these filaments sometimes acquire would induce one to class them among the *conserves*; but I leave this question for the present, as it has but little importance. The number of the Bacteria is very variable in one animal as compared with another. After my first inoculation, the number decreased rapidly, and became from eight to ten times less than that of the corpuscles of the blood. From this I am led to think that the power of propagation was weaker in the rabbit, but I was convinced afterwards that this was not the case; in fact, in a series of eleven individuals successively inoculated one from the other, the tenth presented myriads of Bacteria in its blood, the same as the first. I cannot explain the reason of these variations otherwise than by the temperature, which rose and fell during the time of the experiments. From the moment the animal dies the Bacteria cease to multiply and increase in size. In the blood preserved out of the blood-vessels they perish, or transform themselves at all events; and when they lose their primitive form they cease to multiply in the living animal. Two inoculations, one with the blood of a sheep preserved eight days, the other with the blood of a rabbit, preserved six days, produced neither the *malady* nor Bacteria. When the blood is quickly dried in the open air, the Bacteria preserve the power of inoculation. This I have ascertained by several experiments. This dried blood can resist a heat from 95° to 100° without losing its power. Fresh blood was put into a tube, and left for ten minutes in boiling water; this blood was afterwards introduced under the skin of a rabbit, which died thirty-one hours after, with Bacteria in the blood. Ebullition, therefore, does not destroy their vitality. Of fourteen rabbits, the average duration of life after inoculation was forty hours; the shortest being eighteen hours, the longest seventy-seven. This duration is longer in the adult and old animals than in the young. In

this space of time the appearance of Bacteria is very tardy ; but from the moment they appear the animal has but a few hours to live. The longest time from the appearance of the Bacteria to the death of the inoculated animal, has been five hours. The mean duration of the incubation would thus be thirty-five hours. During this period of incubation the animal loses nothing of his strength and agility ; it is only in the last two hours, and when the Bacteria exist in great numbers, that the rabbit ceases to eat and run about. It then remains lying down on its belly, becomes rapidly weaker, and dies without any remarkable phenomena. Sometimes death is preceded by slight convulsions.

The autopsy, performed directly after death, shows all the organs to be healthy ; but the heart and the large blood-vessels are always distended with clots of coagulated blood ; the coagulation of the blood being the only apparent cause of death. The microscope gives during life some indication of this coagulation ; in fact, from the time that the Bacteria multiply in a notable manner, the red globules seem to acquire a certain degree of viscosity, which causes them to agglutinate to one another in small clots. The organs contain Bacteria only in proportion to their vascularity. The spleen is the one of all others which contains the most, and these corpuscles are always in truly prodigious numbers. This organ, though in appearance healthy, is, however, always a little more voluminous than in the normal state. It seems to be the actual form through the production of the Bacteria ; but, no doubt, this is on account of its great vascularity. After the spleen comes the liver and the kidneys, then the lungs, the brain, the muscles, the glands, the ganglions, and the lymphatics, which contain them only in the blood-vessels which course their tissues. Experience having demonstrated that the appearance of Bacteria in the blood precede those of morbid phenomena, it is natural to attribute the presence of these phenomena to the presence of Bacteria, which have a real existence, multiply, and propagate in the same manner as other beings that are endowed with life. So long as the blood only contains the germ, and their development is not effected, the morbid phenomena are not produced either. But on examining these questions, if we take another view, it is probable that the blood in which the Bacteria have not made their appearance might be incapable of producing them in another animal ; that is to say, during the period of incubation the Bacteria could not be sown, so to speak, and the malady could not be communicated by inoculation.

After having said that during the period of incubation,

that is to say, before the Bacteria have appeared in the blood of the inoculated animal, these Bacteria could be propagated, and the malady of the spleen could not be communicated by inoculation to another animal. M. Davaine adds :—“The following experiment confirms this view in a peremptory manner. A rabbit, which I will designate by the letter A, adult, and very vigorous, was inoculated with three or four drops of blood taken from a rabbit still alive and affected with Bacteria. Forty-six hours after the inoculation (the average time being exceeded by six hours), I carefully examined the blood of the rabbit A, and I found not a single Bacterium. I then took from the vein of the ear twelve to fifteen drops of blood, which were injected into the subcutaneous tissue of another rabbit about two and a half months old, which I will designate by B. Nine hours after this inoculation, I again examined the blood of A, and ascertained that it contained a vast number of Bacteria. Immediately I took from the vein of the ear a certain number of drops of blood, which I injected under the cellular tissue of another rabbit, brother to B, and which I designate C. About an hour after this inoculation, the rabbit A died; and twenty hours after the rabbit C, the last inoculated with the blood containing the Bacteria, also died. The examination of the blood of both proved the presence of Bacteria. As to the rabbit B, inoculated with the blood from A, forty-six hours after the inoculation of the latter, and ten hours before its death, and when its blood did not yet contain any Bacteria, it is still alive and in good health this day, eight days after the inoculation.

(To be continued.)

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting of the above Association was held at the Brunswick Hotel, Piccadilly, Manchester, on Wednesday evening, the 9th of March.

The attendance of members and visitors was the largest known since the formation of the society, comprising the following gentlemen :— Manchester : Mr. Thomas Greaves, President ; Mr. Roger Hampson, Treasurer ; Messrs. John Lawson, William Haycock, George Sermon, James Haslam, Peter Taylor, A. L. Gibson, W. Dixon ; J. Taylor, Oldham ; G. Brown, Oldham ; A. Hampson, Bolton ; Brooks, Pilkington ; Anttall, Rawtinstall ; Williams, Bradford, Sec. ‘York. Vet. Med.,’ Morgan, Liverpool ; Cartwright, Whitchurch ; W.

Challinor, Pendlebury ; Jas. B. Taylor, Mottram ; R. Budge, Bury ; John Greaves, Altringham ; Howell, Rochdale ; Whittle, Worsley ; Carter, Bradford ; Naylor, Wakefield ; Jos. Halfry, Southport ; Leech, Bakewell.

The private business of the Association having been concluded, the President delivered the following inaugural address:

GENTLEMEN,—In taking my place before you this evening in the capacity of your president, and assuming for the first time the responsibilities of that office, I labour under a considerable degree of diffidence, being well aware of my deficiencies and imperfections. Nevertheless, I cannot but feel proud of the distinguished and honourable position in which you have placed me, that of presiding over so large, intelligent, and influential a body of Veterinary Surgeons as I see before me. But I must confess I doubt whether you have got “the right man in the right place.” I very much fear, too, I shall not be able to initiate and infuse that vigour, energy of mind, and earnestness of purpose which ought to emanate from the chair and be influential to persuade and animate each member individually. I likewise very much fear I shall be found only a poor successor to our very worthy and deservedly esteemed ex-president, Mr. Lawson. But since you have made your election, since you have made your bargain, as Paddy says, “a good bargain is all very well, but a bad bargain is better than no bargain at all.”

In Leeds, where it was my happiness to be present at the opening of the Yorkshire Veterinary Association, I believe they have made no mistake about their president, for they have “the right man in the right place.” I have very great pleasure also in reporting to you that their president received me with great cordiality as your representative. I was an entire stranger to all there, except two or three. The respect and courtesy shown me I esteemed as a compliment paid to you, and I must say I felt honoured to be the president of a body so much respected, and I know, whenever an opportunity occurs, this respect will be reciprocated by you.

I must ask you, gentlemen, kindly to accord me your indulgence and attention while I deliver what I believe to be the first inaugural address ever attempted before a veterinary audience in Lancashire. The annual addresses delivered at our Alma Mater, although always of unexceptionable excellence, are framed with the view of being chiefly applicable to the student of veterinary medicine, therefore an essentially different form is called for when addressing an audience composed entirely of experienced and business men as this is, some of whose honoured heads have grown grey in the service of their country. This attempt will be seen to be only a simple, plain, homely exposition of facts in connection with veterinary science. I have found it utterly impossible to compress within reasonable bounds the whole of the matter I felt anxious to have commented upon ; such, for instance, as the sciences of Botany and Agriculture, with the manner in which they are linked to our art, and how the best interests of each are bound up with the other. I should like to have made some observations, also, on the subject of vivisection, veterinary jurisprudence, the question of soundness of horses, and likewise upon the question of breeding stock, the great importance of a wise, intelligent selection, &c., &c. Moreover, a most interesting enquiry would have been the question of a desirability of a superior education being given to the veterinary student, but time and space forbid all this.

In this address I have not aimed at producing a learned dissertation ; perhaps some of my hearers may complain that it is not sufficiently

scientific, nor clothed in sufficiently classical language ; but I have endeavoured to make some amends for this loss by keeping steadily before my mind that which appears to me to be practical and useful, and for that purpose I have divided my subject into two parts, viz :

1st. An epitomised retrospect of the veterinary profession in Manchester. 2ndly. Veterinary medical associations, and the important usefulness of which they are susceptible.

1st. *An epitomized retrospect of the veterinary profession in Manchester.*

In reviewing a body of men or a profession as to its status in society, and comparing it with other bodies of men or other professions, it must ever be borne in mind that to approximate the truth we must always take into account the nature of the town or city and the character of its inhabitants. I believe it is admitted, on all hands, that Manchester is a pre-eminently practical city, and its inhabitants are essentially a pounds, shillings, and pence class of men, each diligently following his own avocation, almost altogether regardless of his next door neighbour, and among them success is deemed the best, if not the only proof of merit.

The respectability and dignity of our profession has so well been sustained by our predecessors that it will bear comparison with any other town or city in the kingdom. It is the proudest thought of my life to know this, and as I look around me at this moment, I see an array of veterinary talent and ability that is not surpassed, and I believe I am right in saying—is not equalled in this or any other country. The last time I had the happiness to meet you in this room we were on the eve of breaking down an old custom, which had been often condemned by many right-minded men as being a habit deserving of censure, and, in many instances, entailing demoralizing effects. I am alluding to the giving of new-year's gifts. At that time all kinds of rumours were in circulation ; from one quarter we heard that our smiths threatened that they would turn out, because it would encroach upon their vested rights ; from another, that the place would be turned out of the windows ; in a third quarter, the representation of a coffin was posted alongside of a large notice, intimating what would be required if these intentions were carried out, and from all quarters the threat was loud and deep that much of our income would be imperilled. But at length the 1st of January, 1864, came, and so far as I am aware, the sun did not change colour on that day, neither was there any earthquake ; but this I believe did happen, there was a creditable peace and quietude in each of our establishments, utterly unknown on any previous occasion, and, to the honour of Manchester be it said, I believe not one of its members swerved an hair's breadth from the mutual engagement ; nor do I believe our business has suffered in the remotest degree ; at least I speak for myself.

This is, I believe, the largest and most influential meeting of English veterinary surgeons ever assembled together in this or in any other town out of the metropolis. And let me remind you, gentlemen, that this association is the pioneer provincial veterinary association in England, and that Manchester still stands high in public estimation. We have heard of the Manchester school before to-night. She is ever first and foremost in every great and good movement, whether it be social, political, or scientific. Yes, the voice of Manchester has been heard throughout the length and breadth of the land, and her influence felt in every clime. I have heard the voice of Manchester listened to with bated breath in our hall of legislature ; but the House of Commons is not the only assembly in which the voice of Manchester has been heard. For three years your respected ex-president, Mr. Lawson, has raised his voice and used his vote upon every important question in our National Veterinary Council in London. The

humble individual who has now the honour of addressing you, has likewise, on many occasions, used his voice and his vote at that same council table. At the fifteenth annual meeting of the profession, on the 2nd of May, 1859, he had the honour to preside over that meeting. It has long been my opinion—and I am not alone in that opinion—that our present charter is defective, and at that time I suggested in a letter to our present president of the Royal College of Veterinary Surgeons that new powers should be applied for. I proposed to contribute £50 as my share for that purpose, and I find the council are now applying to Parliament for new powers. I hold in my hand a very kind letter received the other day from the president of the Royal College of Veterinary Surgeons, explaining the object they now seek, and let me tell you, gentlemen, there is plenty of work yet to be done. There is work for each and all of us to do, and I wish to ask you this question to-night. Is Manchester, that stands so proudly forward in every other question, to occupy a place in the van or in the rear as regards veterinary politics? Do you say in the van? Then you must work to render her worthy of that distinction. Do you say you have not time? well, let me tell you plainly, this excuse will not bear investigation. It would be less correct to say our innate love of ease and indolence induces us to spend our time uselessly, absolutely uselessly, if not worse. We find a vast majority of mankind, from the beginning of the world to the present time, allow their mental faculties and the higher capabilities of their moral and religious feelings to lie dormant and unemployed. But I am proud to know we have many instances of gentlemen in our city who add lustre and honour to our city and to our common profession. We have in our midst to-night a gentleman who has distinguished himself as a bold thinker and a bold writer; and when we witness our ex-president leaving his extensive practice and going up to London to the meetings of the council seven times in the year, and to Edinburgh once or twice a year, to exercise the judgment necessary for an examination; travelling a distance of over 3720 miles yearly at an expense of over £30 for railway fare alone, to say nothing about his loss of time, time which you know must be to him of far greater value and importance than money; for all this, I say, we are under a deep debt of gratitude to that gentleman, and I feel I must laud him for his zeal, and for those sacrifices he has so nobly, so generously, and so praiseworthy for so many years laid upon the altar of veterinary science. I will give you another particular instance, as illustrating “where there is a will there is a way.” Eleven years ago our respected ex-treasurer, Mr. Peter Taylor (I make this allusion with every feeling of respect, and I know he will pardon me for doing so), sent me a note, bearing date 14th March, 1853, excusing himself from attending our veterinary meetings, on the ground that his time was fully occupied. Well, since then his business has increased considerably; he stands higher and deservedly higher in the estimation of the public of Manchester, and added to this, the claims upon his time in his domestic circle are much greater now than then, still, paradoxical as it may seem, he can now find time to attend these meetings, and attend them too more punctually than any other member, and he has proved himself a better member, a more useful working member than any other without a single exception. The very excellent essay he has compiled and read before us, has done him infinite credit; it is of itself a work of no light importance, and at once establishes his claim upon our gratitude and our admiration. With these noble examples before us, it will be seen that it only wants the heart in the cause, and there will always be found a way to accomplish great results. In our daily life, on taking a cursory view of human nature, we see many things calculated to perplex and em-

barrass us. We see, for instance, men rich in intellectual attainments unable to secure for themselves a sufficiency of even ordinary necessities, whilst on the other hand we frequently find plain uneducated men, of unquestionably a lower order of intellect, quietly and diligently plying their avocation, it being an invariable rule with such men, under all circumstances, to execute business with prompt and decisive action, and by a wise economical application of time and means to amass money, and after a few years of wholesome thrift we see them rolling in wealth. We are apt to refer matters of this kind to some mysterious dispensation of Providence, beyond our comprehension and wholly independent of human control; but on a closer inspection of the circumstances of any particular case, we often find all the mystery vanishes, and we are able to trace man's failures to natural causes. It will frequently be found that such failures are referable to some weak point in the mind or the body; to a defect in the balance of power among the different functions of his nature. Possibly he is a victim to the baneful effects of that worst of all habits, procrastination and incomplete resolves; a want of nerve and energy; and an insufficiency of animal and moral courage which are necessary for success in the practical struggle of life. With him there is a constant miscalculation of time and means, occasioning continual hurry and difficulty, and the adoption of expedients that too often lead to penury.

We will now take a retrospect of the veterinary friends we have lost in Manchester. The constant and frequent changes that are taking place amongst us is something surprising, considering the small number of our members who are practising here at any one stated period of time. During the thirty years that I have been engaged in this profession in this city, I have lost not less than twenty-three fellow practitioners through death. When I commenced my career here there were nine veterinary practitioners in this place, with lives full of vigour as we are now, but, with only one solitary exception, all of them have long since gone to that bourne from whence there is no returning. Mr. Peplow, he is dead; Mr. Lefton, Mr. Frank Myatt, Mr. Bird, they, too, are dead. Mr. Matthew Gibson, whose name is never mentioned only in terms of sincere respect to his memory, is also dead. Mr. John Taylor, that man of indefatigable and untiring energy, whose practical judgment was deservedly esteemed far and wide, he is dead. Mr. Thomas Taylor, whose activity and diligence in his profession, combined with great abilities, caused him to be much respected by all who knew him, is likewise dead. Mr. James Taylor, their father, after an industrious and useful career, having accumulated a competency, retired from the profession to enjoy for many years a green old age, he, too, is dead. And last, though not least, the much respected Mr. James Hollinworth, that brilliant little gentleman, that vivacious and eminently successful practitioner, whom to know was only another word to respect and to esteem, he is dead. As a dream all this seems to have passed before me. The only survivor is my very much respected and truly esteemed relative and tutor, Mr. John Greaves, of Altringham. To him I am indebted for planting in my mind much useful practical knowledge. It is to the principles he so faithfully and earnestly inculcated in my youth, that I can ascribe the honour and the distinguished position I this moment hold amongst you, and for which I shall ever entertain a lively sense of gratitude to the end of my days. I have heard our esteemed ex-president say, "I know no veterinary surgeon's name spoken of with more respect than the name of John Greaves," and we are proud in having the honour of his presence this evening. Yes, gentlemen, and

since then we have lost from amongst us Mr. Joseph Gibson, Mr. Andrew Howarth, Mr. Samuel Dean, Mr. Gilbert Fulton, Mr. Thomas Ball, Mr. Joseph Ball, Mr. Peter Hulme, Mr. Thomas Tennant, Mr. Matthew Poett, Mr. Isaac Worthington, Mr. Isaac Gladwin, and Mr. Isaac Gladwin, senior. This mortality, which is at the rate of one death in every fifteen months out of a professional body whose living members have seldom if ever exceeded twelve at a time, is something startling. Only ten years ago, a small society of veterinary surgeons used to meet together in this very house, as we ourselves are now assembled, and we conversed together pretty much in the same manner we are now conversing; they plodded the same streets we tread, but since then death has made sad havoc in that little band of ten members, only four now survive, and three only remain in the profession.

Such, my friends, is life! and even now, scarcely a week passes without the king of terrors making an attempt, as it were, to snatch one or another of us from out of our midst by accident or sickness. Is it not, I would ask, matter sufficiently solemn to awaken many serious thoughts? These are facts that sound to me like foot-falls on the confines of another world. Let us think of it, for it warns us that our time of departure hence is approaching as inevitable and certain as the silent watches of the night follow the day.

Gentlemen, I have thought it not out of place to pay what appeared to me a fitting tribute of homage to the memory of our departed veterinary friends, the contemplation of which discloses to us how close we stand in the midst of our ambitions and successes to the dark and noiseless grave. We see the cypress vies with the orange blossoms, and we turn with sorrow to note the losses we have sustained by death.

2ndly. *Veterinary medical associations, and the important usefulness of which they are susceptible.*

In the very excellent inaugural address delivered a short time since in Leeds, I had the pleasure to hear the president, Mr. E. G. Dray, very beautifully illustrate the tendencies of this enlightened age to form associations, when, among others, he referred to co-operative societies, and the formation of veterinary medical associations in various parts of England, and in Scotland, and which he further illustrated by the contemplated association of sovereigns invited to a congress in Paris. I feel a strong desire that as many of the members of the Yorkshire society as can should become members of our association, and give us their countenance and support; also that our members should fully reciprocate this, remembering that whenever Lancashire and Yorkshire have heartily united their brawny and stalwart arms together, whether in a social or political movement, or whether it be with a Wilberforce for negro emancipation, or with a Bright for a repeal of the corn laws, or in any other good cause, their power is irresistible; and still further remember, that the great natural barriers which have separated these two counties from the beginning of time are now broken through, that the Yorkshire hills are bored, and we are now as it were one family, one society. It appears to me that these veterinary medical associations are the forerunners of a new era in our profession, but I particularly wish to impress upon your minds this fact, that, neither veterinary medical associations, nor compacts of any other kind, can be lasting unless there exists in such bodies linked together a certain motive for cohesion, a certain number of inducements to union which will render their common dependence agreeable, and the task of management light. And, moreover, that no system can succeed without the presence of favourable circumstances, added to the influence of good laws. There must be a

certain number of common interests which serve as intellectual ties of association. Now I would ask, what are the common interests which draw us together? First and foremost I would say, there is operating within us an undefinable feeling of self-interest, prompting us to come together and listen to the remarks and opinions of others upon diseases, and important questions, with which we individually are daily and hourly contending in our business. We feel anxious to have an interchange of ideas, and are impelled by a strong intellectual desire to acquire more practical knowledge by which we may with more ease administer relief, and with more certainty remove suffering, or save life. We may truly liken this to an errand of mercy, for what object can be more laudable, or more praiseworthy? Talk of a heavenly calling being incompatible with an earthly calling, why this in its very contemplation has an infinite charm. It is a proverb as old as it is true, that "there is more pleasure in giving than in receiving." There is not one of us, however humble or however eminent, but he may impart some knowledge to others. In this you cannot fail to observe that there are two powerful motives operating to cement and perpetuate our associations; let us, then, cordially co-operate and become strong by union, being actuated by one desire, namely, the advancement of our profession. That man who can sit in our midst, listening for two or three hours at a time to the sensible remarks made by experienced and practical men and gain no benefit, must be a dolt indeed. The man of quick perception, the intelligent man, cannot fail to pick up and secure practical knowledge which will be of more use to him in his daily avocation than gold, aye, even fine gold. During the two years of our former society, and the fifteen months of this association, I have not heard one single jarring word spoken by its members. Everything has been to the contrary; the one vying with the other to contribute something for the general good.

You will observe, gentlemen, I am contemplating the high moral grounds of usefulness of these associations. There are a great number of other aspects in which we might contemplate them, such, for instance, as their social aspect, the feeling of pleasure we must of necessity experience in being in each others society, the casual and incidental conversations upon interesting cases then under our treatment, coming to mutual friendly understandings in reference to professional consultations, and also the consideration of the question of a more equitable rate of charge for shoeing, which, as matters stand at present, is a miserably inadequate return, &c., &c. There is likewise another aspect which I delineated at the Leeds Association, and which has been deemed worthy of insertion in the pages of the *Veterinarian* for this month. But there is still another important use which these associations may be made to subserve, and which I shall here characterise as being the greatest of them all; and I beg to call your very earnest attention seriously to this point, namely, they may be made to concentrate practical knowledge upon given points; for, although the Royal Veterinary College was founded for the purpose of developing and imparting scientific information, and the professors and teachers from first to last have done their duty nobly, still there are certain diseases with reference to the cure of which our knowledge is lamentably deficient. For instance, there are farcy, glanders, tetanus, canker, scarlatina, purpura hæmorrhagica, in the horse; pleuro-pneumonia in cattle; rot and smallpox in sheep; rabies or hydrophobia in the dog. Now, since we are living in an enlightened age, in which scientific discoveries have given us great advantages over our ancestors, and as it is my great desire to make this paper as truly useful and practical as possible, I would for that purpose respectfully

and in all earnestness suggest that our secretary be instructed to confer with the secretaries of the Yorkshire Society and North of England Society, and also to invite our brethren on the other side of the Tweed, viz., the West of Scotland Society, to join with us in singling out one of these diseases at a time for consideration. Let us take tetanus as one year's work, and canker for another year's, and so on. Let us thus do all we can, I beg of you, to accomplish this task. Let us see what collective effort can do in extending knowledge, let every member of these societies put his shoulder to the wheel, and gain all the information he possibly can upon one given point at a time. I want the energies of the whole body to be aroused to make a great intellectual effort, and I believe I shall be appealing to the most likely tribunal on earth to attain my purpose, namely, to large bodies of educated and intellectual men in the heighday of manhood, whose whole time and mind are occupied entirely with these kind of cases. The wide area of practical experience that can be thus comprehended, may enable us to accomplish something in our day and generation; and with a view of giving an impetus and an inducement to research, I respectfully suggest that the man who can discover a remedy that can cure nineteen out of every twenty cases, shall have presented to him not only the title of "Honorary Associate" of this society, but also a gold medal. I would stipulate no restriction whatever; it should not even matter whether he possesses a diploma or not. I do not mean the man who can write the best paper on these diseases, nor do I mean it to be the man who can cure a casual case, for we can any of us do that, perhaps, again and again. He must practically develop a certain specific mode of cure, and make the same fully known to us; and as I am one of those men who utterly abominate all shams and barren efforts, I will gladly make an annual contribution of £10 towards that purpose. But you will perhaps say, these things are insurmountable, and some of you may be ready to charge me with being an enthusiast. To such a charge I can only say I should feel proud of it, if only I was deserving of it. Sir Humphrey Davy, with his small lighted lamp in his hand, stood undaunted in the very teeth of the death-blast without any fear, for he felt there was an immunity from danger: he had robbed death of all his terrors in the mine. Yes, there he proudly, nobly stood, and received the homage and the blessings of a whole world. He is one of the greatest and grandest of enthusiasts. Dr. Jenner, after twenty-five years' patient and unremitting experiments with smallpox and cow-pox, became at length triumphant. Behold him, too, as he proudly and nobly stands, his vanquished victim lying at his feet, and he receiving the homage and thanks of a grateful people. Others may be named in honour of enthusiasm. Such are Newton, Shakespeare, Watts, Stevenson. The latter was declared a lunatic in addition to that of an enthusiast, because he said he would drive a locomotive at the rate of twelve miles an hour. And last, though not least, Richard Cobden of our own time. All of these were enthusiasts upon the particular subjects to which they had devoted and consecrated their lives, and England is proud to call them her sons. In fact, every great man that ever did exist, and probably every great man who ever will exist, must be an enthusiast. It is because he is an enthusiast that he becomes a great man. But there may be others of you who are ready to say, the task I want to accomplish is chimerical or utopian; that I am far too sanguine, for no one will make such a hopeless attempt. Need I adduce any other proof to controvert such a timid statement than the fact that one of our ablest members—certainly the best veterinary microscopist and physiologist of the day—is going to "seize the bull

by the horns," in this very room to night. I honour the man for his great courage and daring, and that he is able to grapple with so great a difficulty as pleuro-pneumonia in cattle. My prayer is, that his sagacity and penetrating intellect may lead him to touch the secret spring, and unseal the fountain from whence will flow out the true means of cure, and enable him and us to vanquish this terrible scourge; or, if failing in being actually successful, he will be able to strip it of all its mysteries and insidious character, placing its hideous proportions nakedly before us, and bringing to bear upon it the full blaze of science, which will in the end result in the adoption of a certain method of cure. You may rely upon it as a certain truth, that an arm which is ever willing and all powerful will be stretched out to help us. We must never forget that God only helps those who help themselves. I should wish this association of ours to make some great effort, and to accomplish something worthy of the city in which we live. The usefulness and dignity of our association depend entirely upon its own members. We have within ourselves the germs of all-conquering power. Honour, like virtue, is an attribute that cannot be laid upon a man or upon a society, and be removed like unto a garment; it must proceed from within the man. It is a product of a high and noble nature. Scientific knowledge, combined with close observation, becomes a light to our path, and opens our eyes to a world which the charlatan never enters. He may practice the veterinary art, but veterinary science never. Nor would he if he continued in practice for a thousand years. It is said that practical wisdom depends entirely upon chance, and is the only thing that can neither be taught nor learned; that it is a sagacity, which would seem infallible, an instinct for truth which cannot err. But I have yet to learn, and would put the question boldly: Why cannot a philosopher or a discoverer develop himself now as in times that are past. I believe it is, in some measure at least, referable to a most erroneous and wide-spread notion, that philosophers and discoverers are prodigies, men of gigantic intellects, and that they accomplish their purpose, or make a discovery, by a simple instinctive effort of their mind; than which nothing can be more erroneous. They are all of them men like unto ourselves, differing only in their ardour. And it is by their untiring intensity of application that the truths of science are developed and promulgated. It is not because we have no men in the present age possessing the quantity or quality of intellect to make great men. - An example of success occurs to my mind at this moment. A poor lad, seven years of age, is seen with axe in hand, working in the western forest, clearing the ground in the back woods of America. Until seventeen he was nothing but a simple farm labourer, with probably not more than one year's schooling in his whole life. This lad was frequently seen pondering over and studying by the light of the evening fire books which he had borrowed, he being too poor to buy them. This man, out of his own intellectual resources, his indomitable energy and skill, unlike a "Napoleon," with a prestige and a name, gradually acquires a name in his own country, which becomes a name above every name. The greatest and most powerful nation upon the earth elected Abraham Lincoln their president, by a larger number of votes than were ever recorded for any other man before. Thus it would seem his own great natural talents, unswerving honesty and indomitable industry, caused his fellow men to select him to conduct the passage of a great people through a crisis involving the destinies of the whole world. No, there is no lack of material to make discoveries, and no lack of problems wanting solving. It is because there is too much apathy in man; the desire to become great is not sufficiently strong to

exact from us that untiring and indomitable application necessary to reach the climax. The secret of our failures is often found in the feebleness of our exertions. Depend upon it, great principles and truths are rarely developed by accident. They are the final results of diligent and patient research, guided by an intelligent mind of a high order. The discovery is simply the result of a series of long-continued experiments, each landing the investigator a little nearer and nearer to the object he is bent upon gaining possession of. His intense interest induces him to anticipate the lark's first flight, as he soars carolling to the skies; and he is seen prosecuting his researches long after the liquid melodies of the nightingale have died away in the vale. Sir Humphrey Davy's magnificent discoveries of the composition of the earths and alkalies by the voltaic battery and his safety-lamp, were the result of many years' intense and indefatigable labour, carried on generally until 3 o'clock in the morning, and frequently for whole nights together, night after night. Dr. Jenner was twenty-five years diligently prosecuting his inquiries before he finally succeeded. And what was the result of his research? It was the perfecting of a method of vaccination which accomplished a complete revolution in the power of that virulent and fatal disease, small-pox, which then destroyed one out of every seven persons born, but now it only carries off seven in every thousand. Would it not be a cause for great national joy, a universal boon, if our exertions resulted during our lifetime in the cure of some of those diseases I have alluded to? Say one half, or one third of them? Can you suggest a more likely course to accomplish this than what has been proposed? If you can, I conjure you, by all that is great and good, to make known your plan. I verily believe that most of us in this room could become philosophers or discoverers, and accomplish results equal to any that have yet been accomplished, if we would only set about it with the same resolute determination, and be guided by proper judgment. To acquire the knowledge necessary for the cure of the diseases I have specified, requires only the same course of conduct as that pursued by Dr. Jenner. In prosecuting our enquiries there is probably no human intellect sufficiently sagacious to see its way clearly to the end of the task. But Providence may vouchsafe light as it proceeds. And God, in His own good time, and by His own wise purposes, will develop the result. It may take one, perhaps two, or even three decades of time to work it out. But I hope yet to hear, before I die, the long loud ring of triumphant and happy shouting, proclaiming that the task is accomplished.

And now, gentlemen, I must bring my address to a close. In doing so, allow me to return you my warmest thanks for the kind, patient, and attentive hearing you have granted me. Ardently do I wish for the success of the veterinary profession, and especially for the veterinary medical associations, and, till "life's toils are o'er," my fervent prayer shall be, that hereafter we may be where there is no more night, but where all is joy and peace; and oh, may we meet each other there!

A vote of thanks to the President for his excellent address was proposed, in a neat speech, by Mr. Williams, of Bradford, Secretary to the Yorkshire Veterinary Medical Association, which was seconded by Mr. Lawson, of Manchester, and accorded by acclamation.

The meeting then terminated.

THOMAS TAYLOR, *Honorary Secretary.*

Veterinary Jurisprudence.

WARWICKSHIRE LENT ASSIZES.—WARWICK, *March 2nd*, 1864.

Before Mr. JUSTICE BLACKBURN and a Common Jury.

THOMPSON *v.* HEWITT.

MR. MACAULAY, Q. C., and Mr. Beasley, instructed by Mr. Dickinson, were for the plaintiff, Mr. Serjeant O'Brien and Mr. Brooke, instructed by Mr. Douglas, were for the defendant. This action was brought by Mr. William Thompson, horse-dealer, of Manchester, to recover the sum of £54 17s. 6d., being the amount of loss he had sustained by a horse which he had purchased from Mr. Charles Hewitt, farmer and horse-dealer, of Draughton, Northampton, at the Rugby horse fair, November 18th, 1862.

The plaintiff and Mr. W. Humphreys, a shoeing smith of considerable experience, proved the horse to be lame on the day after he got home; that there was nothing to be seen to account for the lameness.

Mr. Goodier, a horse-dealer of considerable experience, also proved that he was lame on the 28th of November.

Mr. Frederic Mitchel, plaintiff's stepson, gave evidence to having written several letters to the defendant, at the dictation of the plaintiff.

Mr. Lawson, V.S., examined by *Mr. Beaseley*, then gave evidence as follows :

I am a veterinary surgeon, carrying on business at Manchester. I am a member of the Royal College of Veterinary Surgeons. I am also a member of the Court of Examiners, and of the Council. I have had considerable experience and education in the diseases of horses. I have been in business myself practically for twenty-six years. On the 19th of December, 1862, at the request of the plaintiff, Mr. Thompson, I examined a chestnut gelding. The horse was brought to me, and I examined him at that time. I found him lame of the near fore-foot. I believe the cause of that lameness to be navicular disease. I directed poultices to be applied. I do not know whether my recommendation was followed. I saw the horse again on the 2nd of March, but I also saw him in the interim. He had bronchitis in the interim. He was brought to me with bronchitis, on the 21st of January, and remained until the 25th of February. He was very ill indeed while with me. He got quite well of that attack, and was sent back again.

Are you correct in your date as to the 21st of January that he came to you with bronchitis?—Unless I have made some mistake—it might have been a little earlier than that. It may have been a mistake of mine in taking it from my book.

Mr. Justice Blackburn: You have not brought your book here?—No, my lord, I have not.

Mr. Beaseley: At all events it was some little time after you examined him in November?—I am quite sure of that. I believe he had some treatment for cold before he came to stay with me. I believe I must have seen him then; I am not quite sure about it—I believe so—I think so. He got well of this bronchitis, and was sent back again. I examined him again on the 2nd of March, with reference to the foot; that was at the request of Mr. Thompson, the plaintiff. He was still lame then of the same foot. I gave my certificate then. My opinion was more confirmed that it was navicular disease that he was lame from.

Just explain the nature of navicular disease?—Navicular disease consists of a sprain of the flexor tendon as it passes over the navicular bone of foot—a sprain of the fibres as they pass over the navicular bone of the foot. You can see if it is a recent case. There is very often acute lameness, and increased heat of the foot, and several other symptoms which indicate the presence of a recent injury. But in the more chronic cases a horse will sometimes go nearly altogether sound and travel well until he is really at work, and then he becomes lame. For instance, it is a common thing for horses with navicular disease, if they are poulticed and taken care of, to trot out quite sound—comparatively sound; but give them a gallop, or a ride of ten miles on the road, and allow the horse to stand a short time, and then bring him out, and he will be lame.

On the 19th of December, when you first saw him, was the lameness of a recent character, in your judgment?—I should say not. I do not believe it was.

How far back would you carry that lameness?—I should not like to fix a definite period to it; but certainly more than a month or six weeks. I thought so. I could not pretend to speak positively to it.

Was there any appearance of acute disease that you could see on the 19th of December?—Not the least.

If you knew, as a fact, that on the 20th of November, the horse went lame in your judgment, would you attribute it to the same lameness?—I should.

That is, if you were told that he was lame on the 20th?—Yes.

When did you see him last?—Friday last, the 26th of February, I examined his foot then. He was then lame, and I examined him carefully, with a view to give an opinion as to his then state. I say, then (as I have always said), that it is a chronic case of navicular disease, without a question or doubt in my mind.

What were your charges?—I do not know.

Some £3 17s. is put down.—I dare say they would be that at least.

When did Mr. Thompson pay you those charges?—I do not know.

You cannot say without your books?—No.

Cross-examined by *Mr. Serjeant O'Brien*:—The horse did not remain on my premises on the 19th of December only while I examined him. He would be there about two hours. I was not examining him during the whole of that time. I told Mr. Thompson, on the 19th, that I believed he had navicular disease. I did not give a certificate on the 19th to that effect. I signed and gave a certificate on that day as to lameness.

Mr. Thomas Greaves, V.S., examined by *Mr. Beaseley*, gave evidence as follows:

I am a veterinary surgeon, residing at Manchester, and am also an office holder in the Royal College of Veterinary Surgeons: and was vice-president of the Council of the Royal College of Veterinary Surgeons; I am also an honorary fellow of the Veterinary Medical Association. I saw this chestnut gelding on the 7th of March last year. I am not quite sure whether it was the 7th or the 10th I examined the horse, and gave a certificate of my opinion. It is now before me. [Producing the same.] I made a careful examination of the horse, and the conclusion I came to was that the seat of lameness was the navicular joint. It had become chronic at that time. The navicular disease, when it commences, is in an acute state for some time, until the synovia of the joint is exhausted and it has become chronic; there is also going on a slow, gradual, and by imperceptible degrees a change in the internal structure of the navicular bone itself; the articular surface upon the navicular bone, and upon the articular

surface of the flexor tendon where it plays over the navicular bone forming the joint, becomes rough. All this may be going on without the slightest degree of active disease or inflammatory action existing, and up to a certain point, without having occasioned the slightest lameness. It may have been progressing for many months, probably for years, before any abrasion or ulceration of the articular surface of the joint has become effected, or the navicular bone become hollow from absorption, but ultimately in all bad cases of navicular disease, the capsular joint of the navicular bone becomes obliterated and destroyed. Some cases begin with acute inflammation, others come on gradually; but there is never any very acute inflammation. When the disease is at its very commencement, if caused by extra work or concussion, and you should find it out the first day of the horse being lame, you can see by examination that there is inflammation going on, but not in all cases. Navicular disease may arise from natural predisposition, or what is called hereditary causes; it may creep on as it were up to a certain point, and then by receiving a little extra work in breaking, hunting, or being knocked about at a fair, occasioning concussion or bruise at the bottom of the foot, it passes the crisis, develops the lameness, and the horse will go immediately lame and continue lame, off and on, throughout life.

You examined this horse on the 7th of March; now, supposing the fact was that he was lame on the 20th of November, and also that you found him lame on the 7th of March, should you suppose, from those two facts, that the lameness was from the same disease?—I should. There was an absence of all other diseases that create lameness.

Something about alteration of structure was asked Mr. Lawson. I suppose chronic lameness cannot exist without some alteration of the structure internally?—*Internally?* There was no visible alteration of structure externally. It was a remarkably good foot, just that sort of foot in which is frequently found navicular disease. It was a remarkably good foot, having wide frog and bulbous heels.

Is it very uncommon to have no alteration externally? Would it lead you to doubt whether it is a navicular disease or not? Mr. Lawson told us that the rule was, that an alteration of structure would be found, but that there were plenty of exceptions.—It frequently happens when the disease has been in existence for a long time that there is an alteration of the structure, but not necessarily.

Is there any rule as to the length of time necessary to bring on the alteration of the structure?—It depends upon whether the inflammation has been severe, and the pain caused the horse to nurse the foot, and for some time to lay but little weight upon it; if so, the horn becomes so dry and brittle that the contraction goes on more rapidly. If the disease has been slow, the horse suffering little pain, laying his whole weight upon the foot, and maintaining the expansion, it may be for years not contracted.

Cross-examined by *Mr. Serjeant O'Brien*:—If I understand you rightly, you say this disease may commence or originate from the effects of an injury?—Then you may expect acute inflammation for a time. It may also arise from predisposing causes in the foot itself, or in the constitution of the animal, when it would creep on gradually.

The horse was out of condition when you saw it?—Not particularly so. He had pretty well of flesh on him. I was not aware he had been treated for bronchitis.

You say a strain or sprain might have produced it?—Yes; rather more likely a concussion. I saw the horse last Sunday, and the foot was in the same condition still. What I formed my conclusion on is this—

the absence of other disease and the fact that the horse was lame. The lameness was so evident, that it was impossible for me to come to any other conclusion. I saw the horse trotted upon pavement.

Supposing the horse was lame upon the 20th November from that disease, would you have expected that that lameness had commenced long before November?—It is quite possible it might have been in existence some time, the joint being incipiently unsound and defective before November, the disease being in a latent state, and remained stationary; that is, a slight degree of tenderness existed, but not amounting to lameness, would he set up, whenever he was put to work previous to November.

I ask you, was there anything in the state of the fact when you saw it inconsistent with the theory or supposition that the disease may have commenced after November?—There was.

What?—The absence of distinct symptoms of recent disease.

You say it creeps on sometimes without producing any acute inflammation. Would inflammation be the only symptom?—No. Heat in the foot and throbbing of the artery. Contraction of the foot is not a necessary symptom of navicular disease.

Heat is the result of the inflammation?—It is.

Heat merely indicates the presence of the inflammation? (No answer.)

Mr. Justice Blackburn:—When you saw it on the 7th of March, was there anything inconsistent with the lameness having commenced since the 20th of November?—It was inconsistent, in my opinion, to believe that there was any cause of lameness originating since that time. If it had originated since then, there would have been symptoms of heat and tenderness in the foot. On the 7th of March there was tenderness in the navicular joint, but not in the other parts.

Was there anything different in the degree of tenderness which existed on the 7th of March and that which exists now?—No.

There was no heat on the 7th of March?—No. In a recent case we find tenderness on the least tapping round the foot. We tap round it with a hammer. I tapped the foot round on that day, and he evinced no tenderness.

Do you mean, by recent lameness, lameness commencing from some accident or some strain?—(No answer.)

Mr. Roger Hampson, of Manchester, was then sworn, and gave evidence that he was a veterinary surgeon, and also a member of the Royal College of Veterinary Surgeons, London, that he examined this gelding on the 7th of March, 1863, and also on the 26th of February, 1864, that the horse was undoubtedly lame on the near fore foot, from chronic navicular disease; the lameness was the same on both occasions.

Mr. Thomas Taylor, V. S., of Manchester, was then sworn, and gave evidence that he had examined this gelding on the 7th of March, 1863, and also on the 26th of February, 1864, that he was undoubtedly lame of the near fore-foot on both of these occasions, and that the lameness was attributable to chronic navicular disease.

The defendant was then sworn, and proved that he had had the gelding thirteen months; that he had hunted him, and had him with the cavalry, and up to the day of sale he had never been lame; his nephew also proved the same. The shoeing smith swore to his never having been lame to his knowledge.

Mr. Peter Taylor, V. S., was then sworn, and gave evidence as follows—

Examined by *Mr. Serjeant O'Brien*:—Are you a veterinary surgeon, Mr. Taylor?—Yes, I am.

How long have you practised?—For nineteen years.

At Manchester?—Yes.

Do you recollect Mr. Hewitt coming to you upon the 7th April and asking you to examine a chestnut horse for him?—Yes.

Was the horse at Mr. Buxton's?—Yes.

Did you go down there at two o'clock?—Half-past two.

And then did Mr. Hewitt and Mr. Thompson come down the yard?—I saw Mr. Hewitt first, and then Mr. Thompson afterwards.

Did Mr. Thompson say anything about your examining the horse?—He refused me.

What did he say?—He said, "That man shan't examine the horse."

He said that to Mr. Hewitt?—Yes.

What did Mr. Hewitt say?—Mr. Hewitt said, "This is my veterinary surgeon. It is a hard case if you won't allow him to examine the horse."

Did you see the horse at all on that day?—Yes; I was permitted to see him in the box, and when he was brought out for sale.

As far as you could judge, from your examination of the horse in the box, could you discover any symptoms of lameness or of navicular disease?—No.

Did you see him afterwards run out?—Yes; when he was brought out for sale, I saw him run both slowly and quickly.

That was to show him to the intended purchaser?—Yes.

As far as you could see did he run sound?—He ran sound.

Now, I believe navicular disease may arise from various causes, but if of long standing, what effect has it on the foot?—You have a contracted, high foot, and no doubt (if the disease be long-existing) it will be smaller than its neighbour.

From want of the natural supply?—From want of the natural expansion and contraction of the foot, and from inflammatory action.

Now supposing such a disease had been set up from any external causes or from natural causes; supposing it had commenced in November, 1862, and continued up to the present time, would you expect to find an appearance of that in the foot?—Decidedly so.

Visibly?—No doubt of it.

Both as to form and structure?—In the first place you would have decided lameness; in the second place, having had chronic disease for such a length of time, the horse when at repose in the stable would point the foot, and would hang the limb in a relaxed position to relieve the weight from the navicular joint.

I think you were present at the conversation about the £20, on April 7th?—Yes.

Will you, as far as you recollect, tell me how that commenced, or what occurred?—Mr. Hewitt, after he had said it was a hard case that Mr. Thompson would not allow his veterinary surgeon to examine the horse, said, "The horse is very much out of condition (which he was, he had had his sides rubbed, and was disfigured from mustard poultices to his breast), and to prevent any further proceedings, and to settle all disputes, without prejudice to the case, I will give you £20."

Was that before the sale?—Yes.

Were you at any conversation at all between them after the sale?—No.

Cross-examined by *Mr. Macaulay, Q.C.*:—You say that if this horse has navicular disease, which dates as early as November, 1862, he ought to point the foot in the stable?—Yes.

Did not he do so at the sale?—No.

I wish to get your opinion; supposing the horse, at the time of the sale, had navicular disease, which had arisen, say within nine months?—That would be a professional speculation: you must go by the facts.

What I understand you to say is, that under those circumstances the horse ought now to point the foot?—Yes.

But if in April he had a navicular disease, say nine months old?—He would point the foot.

You say it is matter of speculation?—Well, if you are positive he had the disease——

Mr. Justice Blackburn:—I understood him to say it was a professional speculation as to how long he had had the disease.

Mr. Macaulay:—I am not asking you if he had it nine months or nine years, but I say, supposing he had navicular disease, which had arisen, say nine months before, you would not, in that case, expect the horse to point. Is that what I am to understand you to say?—Decidedly I would.

How many months within the time of the origin of the navicular disease do you expect a horse to point the foot?—Three months.

Did he point at the time of the sale?—He did not.

You are quite sure of that?—Quite positive; because I looked at him standing at repose, and knowing that the dispute was about the navicular disease, I looked at him quietly in the box.

You are as sure as a man can be that he had not navicular disease?—I say, as a professional man, that on April 7th he had not, to the best of my knowledge.

Mr. Thompson seems to have said, in your hearing, that you should not touch the horse. I believe you had had some quarrel with Mr. Thompson?—Quarrel?

Yes. You were his veterinary surgeon once, were you not?—No more than other men.

Has not there been something unpleasant between you and Mr. Thompson?—There was something between him and another man in my forge, and since that transaction I have neither spoken to nor recognised the man.

He did not recognise you and you did not recognise him; you did not recognise one another, is that so?—Yes, of course.

You went to prove, as a witness, on one occasion, that Mr. Thompson assaulted somebody?—Yes; I went to prove that he stabbed a man in my forge with a piece of iron; a drunken man.

That he assaulted a man?—No; stabbed him with a long piece of pointed iron in my presence.

Did the magistrates come to that conclusion?—Well, the other man was drunk.

Mr. Serjeant O'Brien:—My lord, I must object to this line of cross-examination.

Mr. Justice Blackburn:—You see, brother O'Brien, it is one of those things which, going to the credit of the witness, I cannot stop.

Mr. Macaulay:—I have only one more question to ask. You say you gave evidence that he stabbed a man with a piece of iron, what was the result?—He was not convicted. He had the man brought up. He was the means of getting up a case against the man that he had insulted, and wanted to prove that he was in danger.

Well, I believe the man was convicted or bound over, was he not, to keep the peace against Thompson?—He was bound over; but it was a most dastardly action on the part of Thompson.

The learned Judge then summed up the evidence to the jury.

Mr. Justice Blackburn:—Gentlemen of the jury. The action here is brought upon a warranty of a horse, which it appears, on the 18th of November at Rugby fair, Mr. Thompson, the plaintiff, bought from

Mr. Hewitt. Hewitt signed the written memorandum of sale, by which it appears that the plaintiff bought for "£90 the chestnut gelding, warranted sound;" so that there is no doubt that on the 18th of November this horse was sold, and warranted sound; and the question is, whether, on that day, he really was sound or not. If he was sound on that day, and has become unsound since, that is Mr. Thompson's misfortune, and the defendant is not in the least liable to make it good. But if the effects of the unsoundness existed at that time, and have become visible since, then there has been a breach of this warranty, and your verdict must be for the plaintiff.

Now the evidence that has been called was very strong to show that the horse is now lame of the navicular disease, which is unsoundness; and the question is, whether or not that unsoundness had commenced on or before the 18th of November, the day on which the horse was sold; and that will be the point upon which your verdict will have to turn.

Now I must begin by disclaiming, myself, every possible knowledge of horse-jockeying; I know nothing about it, literally and truly. In this case I know nothing about it except what I have collected from what the witnesses have said. You will judge of what the witnesses, from your own recollection, have said, and you will say what you think the result of their evidence is.

Now my own impression is, that the navicular disease, which is what they say this horse has got, comes in this way:—It is in the joint of the foot; and when the horse has sustained some injury or other which strains the tendon as it passes over the navicular bone in the centre of the foot on the inside of the joint, disease is set up there, so that the tendon gets dry and the joint grates a little; that is, the horse is unable to use that foot after he has gone through any exertion, and the animal is practically useless, and cannot do any very heavy work. When he does any work, this begins to show itself. When he stands idle the effect goes off, but whenever he is set to work again it would come out. On the other hand, it is averred that this disease may be occasioned in one or two different ways; that it may arise, and frequently does arise, from an accident happening to the horse which would occasion inflammation and pain to the horse, which results in that disease. Then, I understand, that for a time, after the horse has recently had the accident, his hoof is inflamed, and the poor animal suffers pain. You can feel it hot, and even when it is not hot if you take a hammer and tap the hoof, the animal, which would in its healthy state not mind anything about it, would wince, and show that it felt pain when this disease exists after a recent injury. That shows that there is inflammation going on, and they would expect, as men of skill, that when an internal injury has been received the animal would suffer pain, and consequently they can tell when they examine the foot. If it is not hot, and the animal does not wince, it is proof that it is not tender; from which they, as men of skill, draw the conclusion that there has been no recent injury. Lawson said it would probably show. Some of the others said it would be three months, which, you see, would be some proof that there was no recent injury unless there be heat and tenderness at the time when they touched it. It appears further, from what they say (of which of course you will have to judge), that, when the animal has suffered from violent inflammation, from the inflammatory effects the hoof contracts and shows a different appearance. And further, they say, that even when there has been a slow, long-continued inflammation which has gone on slowly, that the hoof would contract then, although more slowly. When the disease

has been of any long standing, they would expect the hoof to be contracted from the navicular disease more than from violent inflammation, much less than if the animal had it from hereditary cause or slow disease. Still they expect that there would be the external appearance. Further, they tell us that when the animal has been suffering long from this disease it acquires a habit—originally derived, no doubt, from feeling pain—of what they call pointing with the foot—standing, that is, in the way you would expect to find an animal that had got into the way of thinking that if he put down the foot he would feel pain, and which would show also that the animal had long sustained the pain. I think the doctors all agree in saying that the animal's foot does not show now any external appearance of lameness, and they are not quite sure, but, I think, they also say that it does not show that appearance of pointing—

Mr. Macaulay:—I think your lordship will find it is so—that they say it does.

Mr. Justice Blackburn:—I do not think the evidence shows that it is pointed now. If you will call my attention, Mr. Macaulay, afterwards to the evidence of any witness you wish me to mention, I will do so. But the impression left on my mind—although there was not very much asked as to the pointing—is, that the plaintiff's surgeons did not say it pointed now; and on the 7th the defendant's surgeon says it did not, or that he did not see it point. Upon that there is an argument which makes both ways. The argument in favour of the plaintiff is this: as the foot is not contracted, and as there is no appearance of any violent inflammation, this disease cannot have been the result of accident, but must have been slow and chronic, continuing a long time. And, of course, if you believe that the lameness showed itself shortly after the sale, it will be for you to judge whether it was a slow, chronic disease. If you are satisfied that the surgeons are all right in saying that the non-contraction of the foot would show that it had not been owing to any acute accident, then of course the probability would be great that it had been unsound before the sale, if it showed shortly after the sale. On the other hand, the argument is used for the defendant—that same argument—that if it did not show itself, and had not contracted (they seem to say it has not even now—at all events it had not at that time), and if it did not really point on April 7th—of course if it does not point now, the thing would be stronger; but if it did not show then, the inference would be, that the animal had not acquired the habit of thinking that that foot was the sore and tender foot, and consequently had not become accustomed to pointing the foot. Therefore if you suppose the symptoms of lameness not to have shown themselves early, you would imply that the lameness had come after the sale. The first time the disease showed itself is a point of great importance in the case. As to that, the evidence is this:—the defendant tells you, and he calls his nephew to confirm him, that he had bought the horse in September, and had him thirteen months. During all that time he rode him, and his nephew looked after him, and these two both tell you that during that time, up to the time of the sale, the horse never showed a symptom of lameness at all. No doubt, if you believe them, it would go very strongly to show, that the disease could not have existed up to that time. If you believe that, it would tend very much to show that the horse was sound when sold. But then comes the question, whether you believe that completely or not. Somehow or other, people who deal in horses—and in this case the observation applies equally to plaintiff and defendant, because both deal in horses—but it seems that people who deal in horses, seem to be a little less particular what they do and what they say, than people who deal in other commodities. If it be true as

the defendant says—if it is literally true—that up to the time of the sale they hunted it, and rode it, and shod it, and everything, and that it never showed symptoms of lameness, it would go very far to show that it was some accident which happened during the plaintiff's ownership, and for which the defendant would not be responsible, which occasioned the lameness.

The plaintiff tells an entirely different story. On the 18th he buys the horse. There is a slight conflict between him and the defendant as to what took place at the sale. Both agree that the plaintiff did mount the horse and try it, that the horse was examined, and that the plaintiff was satisfied, and thought from the look of the horse that he had been sound, and believed him to be sound at the time. Now I dare say some of you know Rugby a great deal better than I do. The plaintiff says that the place where it was sold, that the street there was a very hard paved street, but that there was sand at the side, and that the horse, instead of being trotted on the stones, was trotted on the sand (of course the sand would show it less), and afterwards was trotted in a field (that would not show it so much). The defendant says he was trotted on the hard road of the street. Then upon the 19th he takes him to Manchester, and finding the horse would not feed well—though he makes no complaint about this—he writes for his pedigree, and to know what he had been fed upon.

Then comes the 20th, the day afterwards. "Then," says the plaintiff (and now you will have to see whether he is accurate), on the 20th, he says, he fancied he saw that the horse was lame. That is the plaintiff's account, and the same remark which I made with regard to the defendant's statement—I mean as to horse-dealers—exactly applies to the plaintiff in what he says. The defendant's witnesses swear he was perfectly sound, and never showed any symptom of lameness up to the 18th. Now "on the 20th of November," says the plaintiff, "I put a man on him and made him gallop, and found he was lame of the fore foot. I put his foot in a poultice, then the next day he was out again. Still quite lame. Then I took him to Humphreys." Humphreys (who is not a regularly qualified veterinary surgeon, but a man who shoes horses) says "he examined him on the 20th, and that then he was lame, that he tapped him on the foot, and did those various things which he mentioned. He found no heat or symptoms of inflammation—found nothing. Took off the shoe to see if there was anything in the shoe to cause the lameness—found there was not. Found that the horse was lame on the 20th, and sent him back." If that is true, that he really became lame on the 20th, then that is very strong evidence tending to show that he was lame before the sale, supposing this lameness to be the same lameness. Then the plaintiff says, after that he took him to Mr. Lawson, about the 19th December. On the 19th it appears Lawson did examine him, and found him lame on the same fore foot. He did not, at that time, say it was navicular disease in his certificate. He only said it was lame. He says now he came to the conclusion more decidedly afterwards, on the 2nd March, that it was chronic navicular disease in the foot, and that now, after a further lapse of time, he is sure of it. The lameness continues.

Then there comes that question about the letters. First of all the plaintiff and the plaintiff's step-son say, and Goodyer states that upon the 28th November he came and saw the horse, and advised them to write to the defendant. It appears, also, that on the 19th December, the day Lawson saw the horse, Goodyer was again down there, and saw the horse. Now the plaintiff says he instructed his step-son to write, and he says he

wrote twice to the defendant before the 13th January, and received no answer. Once the step-son fixes the date, saying that it was on the day that Mr. Goodyer came. He says he wrote both of these letters, and received no answer to them. Then he says he wrote the letter of January 13th, and as he says, having received no answer to his previous letters, he began to keep copies of the letters. The defendant says, positively, he got no such letters. *No doubt there is a good deal in this point as to his promptness in writing as soon as he thought the horse was lame.* It would be an argument against him if he did not do it, as in that case nearly two months would have elapsed before apprising him of the horse being lame, and of course still more so if he were to say now that he did write when he did not. If he were saying it falsely it would have considerable *weight as against the rest of his evidence.* It is two years ago now, and he may possibly have made a mistake. Looking at the letters themselves, and finding that the letter of January 13th was the first letter of which a copy was kept, I think that afterwards the plaintiff and his step-son may have had a notion that they must have been written before. But I think the letters themselves look as if *the letter of the 13th January was the first that was written.* On January 13th, the plaintiff dictates this letter to his step-son. "Sir,—After I got your chestnut horse back from Rugby," &c. (Reads letter.) Now I certainly don't think, reading that letter, that it is exactly the sort of letter that a man would write who had written twice before, stating that the horse was lame, and had got no answer. Therefore I confess that in reading this letter, it strikes me *that it is probable that such letters were not written before.* I think—without putting it down as being perjury—it must be a mistake. The defendant immediately answers that letter of the 13th, "Sir,—Yours of the 13th came to hand this morning," &c. (Reads letter.) Now I have no doubt it is quite true that the plaintiff had been told by a man that the horse had been sold to a Mr. Collins and returned by him. But it now appears, according to the defendant's story, which seems to be quite true, that on that day, at Rugby Fair, Collins saw the horse, and had never seen him before. There seems to have been some mistake, and, at all events, nothing was asked as to that. "And as you say," says the defendant, "he has been ill ever since you had him," &c. (Reads letter.) Well, now, upon that I think it is quite fair to make this remark—that if the two letters had been written, you would have expected when it was quite fresh in their minds they would have answered that at once, and would have said, "Why I did write to you, twice. Don't you remember I wrote to you first a month since, and afterwards a fortnight since." They don't say that, but they answer thus, "Dear Sir,—The horse," &c. (Reads letter.) To that the defendant does not send an answer; he does not send a veterinary surgeon to examine him. I think it would have been much better if he had, for then we should have had his evidence, and should have known more distinctly how matters stood. I have examined the letters, but I do not know that there is anything more of importance to be derived from them. It appears the horse had been subsequently ill with pneumonia, or bronchitis, or something of that sort, and that he was at Lawson's again, and was lame. Lawson examines him again, and declares him to be unsound. The plaintiff says he was lame upon the 20th, and took him to Humphreys. Humphreys says, "On the 20th I did see him, and then he was lame. His foot had no inflammatory appearance at all, and no corn. I looked, and was satisfied of that." Now that, certainly, if it is true, would go a good way to make one think that the lameness was owing to something that occurred before the sale. Then Mr. Goodyer, who it appears knew both plaintiff and defendant, says, that at Manchester, on the 28th November,

he saw the horse, and that he was lame of the near foot. He had been present at the sale, and he says he advised the plaintiff to write on that day. Then on the 19th he saw him again, and examined him, and found him still lame of the same foot. Then he proceeds to say, that when he was at the sale on the 7th April, the defendant offered £20 to make peace. I think that offer amounted to this—the defendant says, “I don’t admit that the horse was lame or unsound when I sold him, but I will offer you £20 to have done with the matter.” I do not think you should bestow too much attention upon that, because a man may very fairly say, “I will give you £20 to purchase peace” without admitting himself to have been in the wrong, and that seems to have been in effect what the defendant did in this case. He seems, in terms, to have said, “I will give you £20 or £30 to have done with it,” and the plaintiff says, “I will not take that,” and he now claims a higher sum; and if you find your verdict in his favour I must say a word as to how the measure of damages must be arrived at.

Then Lawson is called, and he says, on the 19th December, at the request of the plaintiff, he examined the horse, and found that he was lame in the fore foot. He believed that it was navicular disease. In his certificate on that day he only expresses that the horse was lame, but he does not say it was navicular disease, or chronic disease, nor does he give any account of it. Now the inference one would draw from the terms of the certificate is, that he was not quite certain that it was navicular disease, but he says he believed it to be. Then on the 2nd March he says he saw the horse again. He was with him for bronchitis from the 21st January to the 25th February. He had been there twice, once with sore throat, and again with what is called pneumonia, or bronchitis. Of both these attacks he was cured. They have nothing to do with the case. Then he says, “He quite recovered from bronchitis;”—he thinks he had seen him for a cold before; that is doubtless the cold in question. Then he says, “on the 2nd March I examined the foot, and he was still lame of the same foot. My impression was, that it was navicular disease.” Then he explains that. You heard all that was said, and I do not think I could assist you, or do you any good, by reading all that over again. If either of the counsel want it read over again, I will do it readily; or if you wish it, I will read it over; but I think your general recollection of the evidence will be enough. Then, he says, on both these occasions there was no heat, and that he would certainly say that the cause of lameness must have been there for more than a month or six weeks. He says there was no heat, or acute symptoms; but he cannot possibly say what was the length of time. He says there was no acute disease on the 19th December. If he is right in that, I think that shows at least that the disease must have been of six weeks’ standing, and it must show that it was there before the sale. But, of course, though Mr. Lawson is a man of skill, he is, like everybody else, liable to error, and you must judge whether that is correct or not.

Then he goes on to say that, on the 2nd March, he was sure that there was chronic disease in the foot; and though Mr. Greaves, veterinary surgeon, did not see him so soon, on the 7th March he and the other veterinary surgeons saw him, and all agree that there was chronic lameness. But then there was time enough between the month of November and the 7th March for the disease to have been produced, and the acute symptoms to have disappeared. But, at all events, on the 7th March they all agree that the horse had the navicular disease.

Then the horse is sold on the 6th April, and here there comes in a matter which you will have to consider a little, and that is this, when the

defendant comes over at that time, he naturally enough wants to have a veterinary surgeon of his own to examine him. He accordingly goes and fetches a veterinary surgeon, named Taylor, with whom the plaintiff unfortunately seems to have had some quarrel, and he, the plaintiff, I think very foolishly and very wrongly, refuses to let Taylor see the horse at all. Now, I think, in common fairness, when the defendant had selected his veterinary surgeon, and wanted him to see the horse, the plaintiff should have allowed that veterinary surgeon to have examined him as much as he liked. I think the plaintiff might very reasonably have said, "This is a man who has had a quarrel with me, and I would not like him to examine my horse, and, therefore, I wish you would get somebody else instead;" but when the defendant said, "Let this veterinary surgeon of mine examine him," *I think the plaintiff's refusal to do so weakens his evidence*, because, of course, it has not been fairly tested by the defendant's evidence on the other side. I think you ought to give this much weight to that circumstance, that it was not giving the defendant quite fair play. I do not suppose it was done from any bad motive. It was because the plaintiff had quarrelled with that particular man, and, consequently, appears to have resented bringing that particular man to examine the horse. The defendant himself seems to have thought the horse was sound at that time, and Taylor says the same thing, though he only saw him trot upon soft ground as he was run out for sale. I must say there is a very great weight of evidence against them, because all these people, selected by the plaintiff, men of skill and position, all say that the horse was unsound, and had a chronic disease at the time, so that I think the evidence preponderates greatly that he was unsound then.

However, the horse is put up for sale, and the defendant bids as high as £64, and the plaintiff buys it in for £66. The plaintiff says the reason he did that was that a horse with navicular disease, by nursing and taking care of him, might be made to appear sound for a time, and that he thought that was what the defendant intended to do, in view of an action at law, and that he would so produce him to the jury as to make a better case for himself. But *I do not think that was proper conduct, or a very wise course to pursue*. However, it was frankly admitted, and was *what a man might naturally enough do*. Still he has bought the horse, and has said by that act that the horse is worth sixty-six guineas to him, for he gave sixty-six guineas to prevent the defendant getting the horse, therefore that is very strong evidence against himself that the horse was worth sixty-six guineas at that time. That you must take into consideration in considering the amount of damages in case you find the horse to have been unsound.

And that is the last point. If you find the horse was sound on the 18th November, then of course the defendant is entitled to your verdict. It rests with the plaintiff to satisfy you that the horse was unsound on the 18th November. If he has satisfied you that the horse was unsound, then the plaintiff is entitled to your verdict, and the measure of damages which you would award would be the difference between the sound value of the horse and the real value of the horse, with such unsoundness as he actually had at the time. That will be the measure of the damages, with the addition of a reasonable allowance for the expenses incurred in keeping and trying to cure the horse; all, in short, which might reasonably be done during a reasonable time, whilst trying to ascertain whether the horse was really unsound, and trying to find out whether he could cure him or not. Not all the time he kept him, when he might have sold him, but for a reasonable time, during which he was trying to find out whether

he could cure him or not. Then the difference between the sound value and the real value of the horse. As I say, notwithstanding it had a sore throat, and so on, the fact that the defendant paid sixty-six guineas for him is very strong evidence against him, but not conclusive, because it may be explained away in the way he has done, and to which I have already alluded. But it is strong evidence that the animal was worth that at least.

But the great and main question upon which your verdict will turn is this—Has the plaintiff satisfied you that the animal was unsound when he was sold to him, and warranted to be sound on the 18th November?

You will decide upon the soundness of the animal first. If you find that the horse *was* sound in November, of course the question of damages will become quite immaterial. You will then say, verdict for the defendant. If the horse was unsound in November, then you must assess the damages to be awarded to the plaintiff.

After a short consultation the jury found a *verdict for the defendant.*

ARMY APPOINTMENTS.

WAR OFFICE, PALL MALL, *March 8, 1864.*

1st Dragoons.—Acting Veterinary Surgeon Thomas James Richardson to be Veterinary Surgeon, vice Evander Chambers, placed on half-pay; May 5th.

MISCELLANEA.

PRESERVED CORN.

AN experiment was lately made in Paris for the preservation of corn from fermentation and the attack of insects by inclosing it in a metal vessel and exhausting the air. The experiment was made in the presence of forty persons, and succeeded perfectly. Ten hectolitres of wheat were placed in a metal vessel, and the air was exhausted. The vessel was opened after fifteen days, and the weevils, which were seen quite lively when the wheat was placed in the vessel, had quit- ted their cells and were dead. They were warmed, but did not stir. Being placed on white paper, they were crushed and reduced to powder, without leaving any stain on the paper. From various experiments made on wheat under glass, it was found that the weevil retains life longer than any other insect when deprived of air.

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Communications and Cases.

NOTE FROM PROFESSOR VARNELL.

GENTLEMEN,— May I request the insertion of the following communication in the next number of your Journal?

I am, &c.,

GEORGE VARNELL.

To the Editors of 'The Veterinarian.'

An important oversight on my part occurred in my examination of a portion of the intestine of a colt, sent to me by Mr. R. Littler, V.S., and published in the last number of the *Veterinarian*. This error would very likely have remained uncorrected for some time had not Mr. Littler himself noticed it. On repeating my investigation of a small portion of the intestines which, with other parts, I had fortunately preserved, I find that the numerous dark points, alluded to by me as studding the mucous membrane, instead of being simply "blood spots," the majority of them contained young worms in various stages of growth. It is true, however, that, as far even as my second investigation has gone, I find that in some of these spots no entozoa exist. It therefore must have been some of those that I had accidentally examined at first, and thus concluded that they were all alike. I think this must have been the way the error occurred; for the greater part of the worms in these spots were so far advanced in growth as to be detected even with a moderately low magnifying power.

NOTE ON AN ALKALOID OBTAINED FROM THE SEEDS OF *RICINUS COMMUNIS*, OR CASTOR-OIL PLANT.

By Professor TUSON.

IT is well known that certain parts of several plants belonging to the natural order *Euphorbiaceæ*, as well as various pharmaceutical preparations obtained therefrom, have been long employed in medicine as remedial agents; and that, notwithstanding this circumstance, our knowledge respecting the chemical constitution and physiological action of the active principles residing in such bodies is even at the present day in an exceedingly unsatisfactory state.

For a considerable period I have devoted much of the time which I could snatch from that occupied in my regular professional pursuits to attempts at isolating the active constituents of the seeds and oils of castor and croton, of gum euphorbium, and of cascarilla bark, *i. e.* the bark of *Croton eleuteria* or of *Croton cascarilla*. Now although, as yet, I have not succeeded in accomplishing the particular object which I had in view when I commenced my experiments, I have nevertheless discovered several substances possessing chemical if not therapeutic interest, and it is one of these proximate principles which I have separated from the seeds and oil of *Ricinus communis* that I wish to partly describe in this communication. The compound to which I refer is an alkaloid, and I have provisionally named it ricinine.

Preparation of ricinine.—Crushed castor-oil seeds are exhausted by successive quantities of boiling water, and the matters soluble in water separated from the oil and other insoluble materials by filtration through wet calico. The filtered liquid thus obtained is then evaporated to dryness over a water bath, and the extract produced is treated with boiling alcohol so long as it exerts any solvent power. The alcoholic solutions are allowed to cool, when a small amount of a resinoid body precipitates. This is separated by filtration, and the filtered liquid is concentrated to a small bulk and allowed to stand all night. The next morning a mass of almost white crystals are found to have deposited from the alcoholic solution. These crystals are the new alkaloid, *ricinine*. It may be obtained perfectly pure by recrystallization out of alcohol and decolorising by animal charcoal.

Properties of ricinine.—Ricinine crystallizes in rectangular

prisms and tables. When placed on the tongue, it slowly manifests a feebly bitter taste, resembling somewhat that of bitter almonds. Cautiously treated on a microscope slide, ricinine melts and forms a perfectly colourless and mobile fluid, which on cooling solidifies into a whorl of acicular crystals. Heated between two watch-glasses, a sublimate is obtained, which appears to be unaltered ricinine. Strongly heated on platinum foil, ricinine first melts and subsequently burns with a highly luminous and fuliginous flame.

The best solvents for ricinine are water and alcohol ; benzol and ether dissolve but a small quantity of the alkaloid. Heated with solid hydrate of potash it evolves ammonia, thus demonstrating the presence of nitrogen.

Concentrated sulphuric acid dissolves the alkaloid without colouring it, and the addition of bichromate of potash simply causes the development of a green colour.

Iodic acid is not deoxidized by ricinine, even when these substances are warmed together.

Concentrated nitric acid dissolves ricinine without evolving red vapours, although heat be applied. On evaporating the solution thus produced to a small volume and allowing it to cool, groups of transparent and colourless acicular crystals develop. These crystals are rendered opaque by the addition of water.

Concentrated hydrochloric acid dissolves ricinine, but the hydrochlorate of the base, which is doubtless produced in this reaction, appears to be readily decomposed both by evaporation and dilution. A solution of ricinine in hydrochloric acid does not give a precipitate with a concentrated aqueous solution of bichloride of platinum, but on evaporating a mixture of these bodies well-defined octohedra and modifications of octohedra having a deep orange colour crystallize out.

On mixing together cold saturated aqueous solutions of ricinine and perchloride of mercury no change is at first observed, but if the mixture be allowed to stand for a few minutes a mass of beautiful silky crystals, arranged in radiate tufts, is formed ; which is so solid that the vessel in which the experiment is performed may be inverted without any fear of its contents falling out. The mercurial compound of ricinine is soluble in water and in alcohol, menstrua from which it may be purified by crystallization.

If ordinary castor oil be shaken up with water, the water decanted and evaporated to dryness, a small quantity of resinous residue is left, which, when treated with boiling benzol, partly dissolves. If the benzolic solution of this residue

be allowed to evaporate spontaneously, a small quantity of white crystals are obtained, which, so far as one can judge from their physical properties, are ricinine.

Neither ricinine nor the resinoid body which falls when the alcoholic solution of the aqueous extract of the seeds is allowed to cool, is the purgative principle of castor oil or of the seeds from which it is expressed, for I administered two grains of each of these educts to a rabbit more than a month ago, and the animal has not evinced the slightest inconvenience, temporary or otherwise. The true active principles of officinal Euphorbiaciæ I am still seeking, and the nature of the results which I have already obtained, induce me to indulge in the hope that before long I shall be enabled to publish an account of them. I may be permitted to conclude this imperfect account of ricinine by stating that I have obtained a similar if not identical body from croton seeds, and, so far as I have yet discovered, differing in several important characters from those described as belonging to cascarilline, an alkaloid discovered by Brandes in the bark of *Croton eleuteria* or *Croton cascarilla*, both plants belonging to the nat. ord. Euphorbiaceæ.

UNUSUAL CASE OF DISEASED LUNGS OF A HORSE.

By G. SOUTH, M.R.C.V.S., London.

I HAVE much pleasure in forwarding the particulars of the case of a black horse, the lungs of which I sent to you on the 11th February last.

From inquiry, it would seem that the horse was a good worker, but about a month previous to his being placed under my charge he appeared to breathe a little heavily in his work, was off his feed, and had a slight discharge from the nostrils, with a cough.

I first saw the animal on the 6th of January, and found him in good condition, pulse 48, ears cold, loss of appetite, respiration unnaturally quick, especially under excitement, a powerful cough, and a discharge from the nostrils. So far as I was then able to judge, he appeared to be suffering from catarrh; I therefore ordered him to be placed in a loose box, the throat stimulated, and mild saline draughts, combined with diffusible stimulants, to be administered twice a day until the 11th, when I found the pulse 60, small, and difficult of

compression; the breathing hurried and laborious; he refused his food, and grunted on being turned in the box. There was no discharge from the nostrils; the visible mucous membranes were healthy. I could perceive no difference in the rhoncus, but could distinctly hear the ingress and egress of air from the lungs. From these appearances and auscultation I concluded that some constitutional disturbance had taken place in the chest. I applied counter-irritants consisting of Ung. Bini. Hyd. repeatedly over the surface of the ribs, but with no apparent effect; febrifuges and narcotics in small doses were administered in the form of a draught twice a day until the 16th, when the pulse had fallen to 50; the breathing was about the same, and the conjunctiva around the margin of the eyelid injected. I administered stimulants with vegetable tonics, the appetite being much improved.

20th.—The pulse remains the same. I thought I perceived indications of effusion in the chest, but none was present; the breathing is laborious, the appetite lost, but he drinks from two to three pails of gruel daily. An immoderate discharge of urine is present. Tonics, with astringents, were given in mucilage twice a day until the 26th, when the pulse was still 60 and very small, the breathing difficult, but the diabetes and thirst had subsided. He now partook of from three to four feeds of corn, with carrots, hay and gruel, looked cheerful, and would approach any one on going near him. Gave mineral and vegetable tonics, combined, increasing them to strong doses.

February 4th.—Pulse 70. The horse appears to be in pain, is frequently lying down and getting up; the pulsation increased to 100, and the buccal membrane has assumed a livid hue. These symptoms continued until the 9th, when the animal died.

I have to remark that the symptoms during the progress of the disease were somewhat of a peculiar character. The cough was strong, but not frequent; the ears cold, and extremities warm, which continued throughout his illness; the fæces were fair in quantity, and of a natural consistence; the animal appeared cheerful, and would lie down in apparently a comfortable position; and although he appeared to have improved in his feeding, and was doing well until about the 4th, he quickly wasted away, and died quite emaciated, being reduced almost to a skeleton.

I beg to subjoin the *post-mortem examination*. The lumbar region of the abdominal viscera was tolerably healthy; the intestines and various parts were pale and flabby; the pericardium and heart were inflamed, the latter containing a

quantity of dark fluid blood. The pleuræ pulmonalis and costalis were healthy; the lungs, which were of an enormous size, and weighed 50 lbs., bore a remarkable and striking appearance; they resembled in touch that of liver, and were consolidated, having small patches (triangularly shaped) of a fatty nature permeating the whole substance of the parenchyma. The near or left lung, on which side the animal died, was of a dark colour, the off having a light flesh-coloured appearance; the bronchial tubes contained a small quantity of sanguineous mucus.

To PROFESSOR VARNELL.

REMARKS BY PROFESSOR VARNELL.

The above is one of the most interesting cases of disease of the lungs I have ever met with, and, as far as I can discover, it stands alone in English veterinary literature. I think I may safely state that this is the opinion also of my colleagues. The morbid specimen was shown to some of the most eminent pathologists in London, who considered it to be almost unique. This makes the case the more interesting, and places me under great obligation to Mr. South for the opportunity he has given me to investigate it.

With only a little difference, both the lungs presented the same morbid appearance; they were, as nearly as possible, of equal size, although much larger than natural, and, as remarked by Mr. South, one was darker in colour than the other, which, no doubt, was due to the position the horse was in at the time he died, and also in which the carcass remained for some time after death. In consistence they were firm but springy to the feel, except at the posterior and anterior extremities of both the large and small lobes, where they were soft and spongy, and much lighter in colour. The pleural coverings were, with the exception of being in some places slightly thickened, but little altered in character. In making a section through the lungs in a longitudinal direction, a better idea could be formed of the extent of the disease, which to me, I must confess, was very remarkable.

With the exception of one lung being a little darker in colour than the other, as was noticed with regard to their outer surfaces, the interior was very similar in appearance. The cut surfaces of the sections of these organs were of a pale-red colour, thickly studded with whitish spots about the size of a pea; some of them, however, were much smaller. They varied in colour from yellowish to a pearly white, the

small ones more particularly assumed the latter appearance. The spongy portions of these organs were of a dirty straw colour, there being no red points or other indications of blood having circulated through them, or of their having been permeated by air for some long time; the small bronchial tubes seemed to have been completely obliterated by compression from the interstitial deposition.

Such was the general appearance of the lungs as far as the unaided eye could discover. The microscope was now resorted to, to determine the true character of the white points that were diffused throughout the entire structure of these organs.

On examining a small quantity of the matter scraped off them, it was found to consist of large nucleated cells, large and small granular cells, and what appeared to me to be free nuclei, with an abundance of granular matter. An examination of the deposit of these lungs was made by a pathologist of high standing, who, in his remarks to me on it, says, quoting his words, "All the white points in the lungs were made up of the same elements; cells nucleated and non-nucleated, granular and homogeneous, some like cancer cells, some small, like the nuclei of mucus-corpuses or young epithelium."

I regret that the bronchial lymphatic glands were not sent with the lungs, as I think they would have exhibited a disease of the same character as these organs. I am also of an opinion that the disease commenced primarily in these organs, and that the lungs were secondarily affected.

Since making the above remarks, a case very similar in many respects to that to which they refer has been brought under my notice by Mr. William Clark, V.S., of Islington. I think it very remarkable that two cases, so nearly identical in character, should have occurred within so short a time of each other. The organs affected, consisting of the lungs, heart, and spleen, were brought to the College for our inspection; and a few days after, the following letter, describing the symptoms observed during the time that Mr. Clark had the animal under his care, with his reasons for advising the owner of the horse to have him destroyed, also came to hand:

LITTLE CROSS STREET, ISLINGTON;
March 21st, 1864.

DEAR SIR,—I beg to hand you a brief account of the symptoms presented by the bay mare whose *post-mortem* appearances you have had an opportunity of seeing. On the 27th of January last she was brought here in consequence of being off her feed and having a slight cough; she

had been at work, however, up to within a day or two, taking rest in the usual way, and, in fact, nothing of serious moment was suspected. From her very irritable temperament, it was impossible to approach her head for the purpose of examining her visible mucous membranes without applying a twitch; however, I did not deem it necessary to do so, but advised that she should be taken home and carefully nursed and dieted. I heard no more of her until the 17th of February, when her owner thought it desirable that she should come to my infirmary and occupy a loose box. When his man brought her I observed to him that her respiration was very much laboured, and that he must either have ridden her or brought her here in a very hurried manner, but he assured me that he led her at her own pace. It being late in the evening, I placed her in a comfortable loose box, and deferred any minute examination until the following morning. On the 18th I ascertained that she had eaten up her previous night's supper and had lain down; her pulse was 56. I managed to examine her visible mucous membranes, and found them pallid. I then auscultated the chest; the respiration was between 50 and 60 per minute; the sounds on the right side normal, but those of the left indicated great oppression, and resembled wind passing through bagpipes. I applied, therefore, an extensive blister to the left side.

19th.—Blister acted well; appetite tolerably good; respiration more easy; pulse 56.

21st.—Ung. Hyd. Biniod. applied over the blistered part; animal feeding tolerably well.

23rd.—Pulse 60; respiration increased; countenance very much dejected, appetite tolerably good, but has not lain down since the application of the blister. From this time she began to waste in condition very much; the eyes became glassy; the mane also was easily detached.

On the 10th of March, considering that she had extensive structural disease of the lungs, from which she would never sufficiently recover so as to be again useful, I advised her owner to have her destroyed.

On the 12th, on her way to the yard, she walked tolerably well until she reached the neighbourhood of Barnsbury, when, as my groom informs me, she became suddenly and intensely lame of the off hind leg, and, refusing to proceed any further, was destroyed in the street.

I am,

Yours very truly,

WILLIAM CLARK.

To Professor VARNELL.

It will be seen, by comparing this letter with the one received from Mr. South, that the symptoms in the cases they refer to, to a certain extent, correspond with each other. For example, we find in both cases that the breathing was unusually quick, and a cough was present; the pulse in each, as *compared* with the number of respirations per minute, was slow, except in Mr. South's case, a short time before death. These symptoms, as far as they go, were certainly diagnostic of disease of lung, and that of a character not usually met with. But I am sure no one will suppose that either Mr. South or Mr. Clark could possibly determine the true nature of the disease they had to contend with. The symptoms were not those of pneumonia, bronchitis, pleurisy, or con-

gestion of the blood-vessels, either active or passive; and yet it was evident enough that these organs were extensively involved, and over which no treatment, whether medical or otherwise, could have the least control. Such, I conceive, were the feelings of these two gentlemen, both being practitioners of large experience, and I feel confident that such would have been my position under similar circumstances. The importance, then, of recording these cases seems obvious enough. In some degree they may assist in diagnosing similar lesions, and they may also serve as guides in arriving at conclusions in disputed cases of soundness at the time of the sale of a horse. I will now give a brief description of the morbid parts above alluded to.

The lungs were much enlarged, and of a lighter colour than natural; their outer surfaces were slightly uneven, in consequence of numerous nodule-like tumours in their structure, immediately beneath their serous coverings, but the latter were in no way structurally involved with the former. These tumours varied in size from that of a pea to a small walnut, and were found, on making a section of the lungs, to be disseminated throughout the entire substance of these organs, and were more or less connected together by light-coloured striæ, which passed from one to the other between the lobuli. These small tumours were moderately firm and of a lightish gray colour, except in the centre of some of the larger ones, where it was of a yellowish-white aspect. The striæ between the lobules were of a pearly white colour, and, if anything, a little firmer in structure than the tumours.

The bronchial lymphatic glands, which had not been removed from the root of the lungs, were larger than natural, and their structure materially altered by the deposition of abnormal matter in their interior, which was similar in appearance to that deposited in the substance of the lungs, but it looked as though it was of an older date.

The spleen was a most remarkable specimen of disease. It was many times larger than it would have been in a healthy state, weighing not less than twenty-five pounds, and was of corresponding dimensions. Its bulk was not due to its being surcharged with blood, as is very often the case, but, like the lungs and glands above alluded to, to abnormal growths within its structure; these growths were not, however, regularly developed throughout the organ, but in isolated spots forming a series of tumours varying very much in size; some were as large as a good-sized apple, others not larger than a small walnut, and many were of an intermediate size. Of these

tumours, those seen on the surface of the organ varied in colour. The summits of all the larger ones were of a light gray, their sides of a brownish aspect, and their bases the same in colour as the spaces between them, which was the natural colour of the healthy spleen. The surfaces of this organ, studded as they were with these tumours, might be made to resemble a miniature model of a section of the earth on which a number of snow-capped mountains existed, varying in height, the bases of which, and the valleys between them, being of a brownish-purple colour, as though covered with heather. These tumours, when cut through, presented the same structural appearance as those previously mentioned as existing in the lungs, but in consistence they were evidently firmer. The heart was smaller than natural, pale, and flabby to the touch. At its apex it had evidently undergone a fatty degeneration, very little muscular tissue being present at this part of the organ.

Such is the general character of the above-named organs as seen by the unaided eye, and to those conversant with pathological anatomy it is sufficient to give a tolerable idea of the true nature of the disease. But it is to the microscope that we are indebted for a more precise knowledge of the character of such deposits. By its aid only can we determine the nature of the histological elements of which growths like these are made up.

On examining a small quantity of matter scraped from the cut surface of the diseased parts of either of these organs, similar elements were seen (by me at least, others who examined them may have discovered more), of the same character as those noticed in Mr. South's case, viz., large nucleated cells, granular cells in large numbers, free nuclei, with an intensely granular fluid. A little matter taken from the cut surface of the tumours of the spleen had, I thought, many more of the large nucleated cells in it than I observed in that taken from the other organs.

I have thus given a brief sketch of the diseased organs taken from the horse under the care of Mr. Clark, to whom I feel indebted for the opportunity he has given me for such an interesting investigation. By what title is this disease to be designated? It has been suggested to me that it is cancer, and I think that the nature of the growths (abnormal) before referred to justifies such an appellation. This disease did not, in all probability, commence in either the lungs or spleen, but in some other organ, most likely in the bronchial glands. This may have been the case also in Mr. South's case, and from these organs some of the abnormal

elements were carried by the blood in its circulation to the lungs and spleen, and perhaps to other organs also, but to an extent not noticed.

What could have induced such disease in the animal organism in the first instance? This I will not venture to give an opinion upon. There may, however, have been that peculiar diathesis in these animals which would only require some exciting cause to determine active disease. We may safely assert, I think, that the seeds of the malady were in the system, although in a dormant state, long before either Mr. South or Mr. Clark was consulted.

Specimens from the lungs were examined by Dr. Harley and also by Dr. Hicks, whose reports on them are published in the *Medical Times* of April 9th, 1864:

“The portion of lung examined was found to be very slightly crepitant, and on being cut into small pieces some of them sank in water and others barely floated. On a naked-eye inspection, it appeared to contain a quantity of grayish-white matter, filling up the spaces of the lung-tissue. On microscopic examination this whitish matter was found to occupy the air-cells, filling up most of them more or less completely. It was seen to consist of corpuscles, varying somewhat in size and shape, the predominant form being spherical. These corpuscles contained much granular matter, and many of them appeared to be nucleated.

“Dr. Harley said that Dr. Quain had reminded him that the specimen on which Dr. Hicks had reported was very like one he (Dr. Harley) had received from the Veterinary College. On section, the lungs presented innumerable white spots, looking at first sight like entozoa. When he received the specimen it so happened that no less than seven pathologists were present, and none of them had seen a similar condition in the lungs. They were removed from a young horse, four years of age. The animal had had good health until six weeks before death, when it began gradually to lose flesh. The appearance of the lungs being very unusual, they were sent from the country to the Veterinary College, but the professors there said they had never seen lungs in that condition. Dr. Harley looked for ova, but found none; but on microscopical examination found appearances similar to those Dr. Hicks described in his report, and he had no doubt the specimen was some form of cancer. Unfortunately, the other organs had been thrown away. Dr. Harley came to the conclusion that the cancer was secondary. Since examining this specimen he had received another nearly like it, but here

there were masses of soft cancer in the spleen, and in the lung also were several large nodules, as well as the smaller ones found in the other specimen.

“Dr. Wale Hicks said that in his specimen no distinct spots were found. The matter was uniformly infiltrated.”

ON THE ELASTICITY OF THE HORSE'S FOOT.

By W. ERNES, M.R.C.V.S. London.

THE subject of the elasticity of the horse's foot remains, up to the present time, an unsettled and disputed point, not only in this country, but also on the Continent. It was first treated of by M. Lafosse, sen., in his 'New Practice of Shoeing,' published in 1754, and afterwards the subject was further elucidated by his son, whose manual was published in 1766. The MM. Lafosse, however, only drew attention to the flexibility of the heels. Lafosse, sen., says, at page 86, "the heel comes in contact with the shoe, for the hoof is flexible;" at page 101 he again says, "the thinner the shoe at the heel the greater is the flexibility of the hoof at the same part." At page 203 of the 'Manual' we read, "It is true that there is an old prejudice that, to protect the heels from the hard and paved roads, the shoe should be long at the same parts, and cover the point of the heels of the foot; but when it is suggested to the partisans of this system of shoeing that the iron on which the heels bear is as hard as the pavement, they answer that they take care to raise the heels of the shoes so that there is no bearing on the heels, which certainly is the case, to the extent, as they clearly show you, that the blade of a knife can be easily passed between the shoe and the heel of the foot, but this is only while the foot is held up. When the foot is on the ground and the other foot is held up, tell them to pass the blade of the knife in that position, and they will find that there is no space left, even to introduce anything as thin as a beaten gold leaf. They believe that it is the shoe that bends, and consequently put on a thicker shoe; but the effect is the same, and they are quite confounded on finding that, on taking up the foot, the same distance between the heel and the shoe exists, which could not be perceived when the foot was on the ground."

Bourgelat, the founder of the first veterinary schools, in his work on shoeing, published 1771, after having described

the different parts which constitute the horse's foot, says, "finally, the elasticity pervades every part of the hoof." Professor Coleman, in his work on the foot, 1802, takes nearly the same views of the elasticity of the hoof as MM. Lafosse and Bourgelat. In 1809 the best work on the horse's foot appeared from the pen of Bracy Clark. Though the anatomy of the foot is most accurately described, the work is principally directed to the mode of shoeing, of which he gives a most erudite history. He enumerates with great care all the prejudices and abuses in the practice of shoeing, and to it he attributes the principal causes of the deterioration of the hoof. To demonstrate more accurately the injury caused by shoeing, the author begins by describing the elasticity of the hoof, of which he claims the first discovery, which, according to him, consists principally in the descent of the sole, and the lateral expansion at the heels, in which certain functions are attributed to the frog rather inconsistent with its structure. The theory of Bracy Clark was generally adopted on the Continent as well as in England, his work being translated into French and German. In this country it had the effect of introducing a better system of shoeing, and led to the adoption of a better shoe, thinner at the heel, and consequently lighter, put on with fewer nails, and these placed further from the heels; but it also led to that most objectionable system of paring the feet, opening the heels, and sometimes rasping off the inside quarter to promote the supposed expansion of the heels. Whether this cutting, paring, and rasping, with soaking and softening of the feet, did or did not produce some of the results advocated by the author, it would be difficult to say; but if so, it could only be the effect of the abnormal, and not the normal, condition of the parts. A question might be asked, did not the paring of the feet, until the sole sprang under the thumb, and blood was all but drawn, as was recommended and generally followed in all shoeing establishments, lay the foundation of navicular disease? This source of lameness was up to that time unknown, and is now of much rarer occurrence, since a more rational plan has been adopted, although the roads are still as hard, and the pace, since the introduction of railways, is quite as much accelerated. There is no doubt that by paring and rasping of the sole, frog, and crust, the parts which were immediately covered by them became more exposed to external injury; and the hoof, becoming dry and brittle, was much deteriorated, and disposed to contraction; one half of the horses were thereby more or less crippled, and it was painful to see tender-footed animals travel on

rough or fresh macadamized roads. To remedy this, leather soles were applied by some persons. But why remove the natural protection to substitute an artificial one? On the Continent the consequences were not the same; for though expansion was generally espoused, it was not carried out in practice. Their system of shoeing is more uniform, and the buttress used in paring the feet is not so well adapted for scooping out the sole as the more ingenious drawing-knife. It has been reported by good observers that the number of lame horses is less in Paris than in London, but that may depend on other causes. Let it not be supposed that I speak disparagingly of the works of Bracy Clark; on the contrary, though there are points on which I do not agree with him, I hold that his work on the foot is very erudite; and if he had done nothing more, he has certainly made us better acquainted with the structure of the horse's foot, as well as the origin and history of shoeing.

More than thirty years ago I was engaged on some experiments on shoeing in which paring the feet was inadmissible, and this created some doubts in my mind as to the lateral expansion of the heels. I there and then instituted some direct experiments to ascertain the fact, and selected feet which had never been shod, as well as those which had been shod, for the purpose. I repeated these experiments several times, but could not find the least appreciable descent of the sole or expansion of the heels. But I do not on that account deny the elasticity of the horse's foot; on the contrary, I ascertained that to a limited extent it did exist, principally towards the coronet and the heels, and is determined in the following manner. When a sound free-going horse in progression extends his leg and brings his foot to the ground, the heels and quarters reach it first; this, however, is hardly perceptible; the pressure on the toe is greatest when the foot is on the point of leaving the ground; however, when the whole weight is thrown on the foot at the moment when the other foot is leaving the ground, the soft parts within the hoof become compressed, the upper part of the hoof yields, its fibres are compressed, the heels descend, and are brought into contact with the shoe on the ground. When the foot is off the ground it slightly expands. The same takes place in the hind feet, with this difference, that the motion at the heels is not so great, while the elasticity at the coronet is greater than that in the fore feet.

To resume. The hoof is a horny box, in which are contained the different parts constituting the digits, or what is designated the horse's foot. It is composed of three different

horny substances—1st, the crust or wall, composed of longitudinal fibres closely matted together, which, when macerated, have the appearance of coarse horse-hair. This part of the hoof is elastic to a limited extent; it yields when the weight is thrown on it in a downward and backward direction; this elasticity is greater at the coronet and the quarter where the lateral cartilages greatly contribute to it, but it is almost *nil* over the os pedis. 2nd. The sole, which is composed of irregular layers superposed on one another. It does not, as far as I have been able to ascertain, possess any elasticity or yielding power. According to Bracy Clark, Girard, and other writers on the horse's foot, the sole contributes to the elasticity of the foot by expanding the heels; this, in my experiments, I have been unable to discover, and I doubt it being the fact. 3rd. The frog, a soft pyramidal body, bifurcated at the base, and composed of flexible fibres, parallel like those of the crust or wall. Its function is to ward off concussion and prevent slipping. It is therefore necessary that it should always be brought in contact with the ground, as otherwise it will become hard and dry, and be thrown out of use.

The horse's foot, from its shape and construction, is essentially formed for rapid progression on plain or level ground. It is not like that of the polydactyls, adapted to ascend or climb, or even like the didactyls, to secure a footing on steep rocks or mountains, where they find food and security against hunters and beasts of prey. It therefore possesses great solidity and but limited yielding power.

OBSERVATIONS ON "SOUNDNESS."

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from p. 212.)

THE lateral cartilages are liable to become ossified, especially in the heavy draught and coarse bred horses; and well bred ones are not entirely free from the disease. Many horses are the subject of this disorganization of structure, and are passed as sound, and free from disease, by the veterinarian; in some instances by being overlooked, and in others, in consequence of the examiner not deeming it necessary to make any remark. Some men are desirous of earning the name of

good fellows, and of becoming popular with breeders and dealers in horses. In order to accomplish this they are not over particular in their examinations as to soundness: we often hear remarks as to the manner Mr. So-and-so *passes his horses*. I do not wonder at the neophyte adopting this course, more particularly when he has to contend with "Vieux routier." It is common to hear some people say they object to a certain man as he is very particular, that is to say, when selling, but not when buying; they do not care how you scrutinise a horse when they have to pay the purchase-money. I have been told by farmers that a "vet." ought to overlook many little things when a *gentleman* is the purchaser, because he can well afford to lose his money if anything goes amiss. Sellers of horses—as a general rule—are not sufficiently versed in what constitutes the duties of an examiner as to soundness; indeed I have known some *gentlemen* give a hint to the "vet." not to look more closely than needs be. When this suggestion is made, he ought to take extra pains in examining his case. But this is a digression, and now to proceed. We all know how prone the horse is to the deposition of bony matter upon various parts of his frame when a sufficient exciting cause has called it forth. We find cases of substitution also very frequent as we approach towards the pedal extremity; for example, this substitution is met with *between* the metacarpal bones and in cartilaginous structures generally, when contiguous to the bones.

The lateral cartilages are—as I have said—especially liable to the change of structure adverted to, in certain bred horses.

These appendages too, often feel like dried gutta-percha, and are curled towards their posterior parts, which must to a certain extent impair the action of the animal so circumstanced. Being intended to protect certain parts by warding off concussion, the lateral cartilages should be extremely pliable. Much may be said of these bodies, were it necessary. I know of no portion of the anatomy of the horse more overlooked by some persons than the lateral cartilages, and I have no doubt much diversity of opinion will exist as to a diseased state of the parts being considered an unsoundness when, of course, the disease has rendered them but slightly rigid. It is usual to certify an animal sound if no lameness is apparent.

I pass over that disease called "quittor," not believing any person would subject an animal to the ordeal with such a disease apparent. The next to catch the eye is a *sore heel*, this is generally looked upon as a very trivial affair, and unworthy of notice. A word or two, however, may not be un-

profitably employed in discussing the merits of this apparently trifling ailment.

I omitted to mention—not deeming it necessary—that when practicable the legs and feet should be well cleansed from dirt, either by water or otherwise, previous to the examination, as it is possible the eye may be deceived during the process. A slight crack in the heel, or a fissure may exist in the horny part of the foot, which might escape detection unless this precaution be taken. Sore heels, cracked heels, or as some persons describe these affections, *scratched* heels, will, (although considered by many of no consequence,) sometimes cause a great deal of mischief. A word in season will tend to ward off evil consequences. Lameness is often the result of a sore heel, and if it should happen that a splint is present in the limb of the same side, it is more than probable the lameness will be attributed to the splint and not to the slight crack in the heel; these mistakes are not infrequent. Mr. Percivall mentions a case in Part I, vol. iv, of his ‘Hippopathology,’ which will teach a better lesson than I am capable of doing.

The late Mr. Henderson read a paper on the subject of splint, in the year 1829, at the Veterinary Medical Society, which contained the following observations:—“Early in the spring of 1827, a Norfolk breeder, brought seven or eight horses to town for sale. I was requested by a gentleman to inspect one of them, of which he had made choice. They were a lot of very clever horses, and all got by old Pretender. There was one remarkable circumstance, they all had splints, but situated on the shin bone, and, as far as regards lameness, they were all perfectly sound. I mean to say, not one of them was lame; and, therefore, I considered them sound. I passed the one in question (a mare), and she always remained sound, and gave satisfaction. A few days after this, a gentleman called upon me to ask if I could recommend him a horse to carry a lady. Having seen one belonging to the breeder to whom I have just alluded, I took the gentleman to the stable, accompanied by his friend and servant. After they had all three ridden the horse, approved of him, notwithstanding he had a splint on each leg of large dimensions, which was pointed out to them, they bought him. On the third day I found the whole party at my house exceedingly angry, the horse was lame, and it was insisted that the dealer should take him back. It appeared that the horse was sent the day before to the college; it had left the gentleman’s stables sound, but on arriving at the college he was discovered lame in consequence of the splint, and the gentleman was recommended immediately to

return him. When I saw him the following day, he was still lame; but I was soon satisfied the splints had nothing to do with the lameness. I had the shoe taken off, and could find nothing wrong in the foot; but on pressing my thumb in the heel above the frog, the horse felt so much pain that he plunged from me with violence. On close examination, I found it proceeded from a very trifling crack in the heel. After a great deal of angry contention between the dealer and the gentleman, I persuaded them to consent to my keeping the horse three days, in which time I was to give him a dose of physic, and poultice the heel;—if he was sound at the end of that period, the gentleman was to keep him; if he continued lame, he was to be returned. On the third day the horse was sound; but, instead of the party meeting as agreed, the gentleman sent his attorney to demand the purchase-money. Although I was perfectly satisfied as to the soundness of the horse, yet, to make assurance doubly sure, I advised the man to take the horse to Mr. Field, for his opinion. Mr. Field examined him with the greatest minuteness, and gave a written certificate that he was sound. The dealer then resisted the payment, and an action at law was the consequence. The horse remained in my stable. About six weeks after this, Mr. Sewell, accompanied by the purchaser, called to see the horse; when, after having examined and ridden him, Mr. Sewell gave it as his decided opinion, that, although the horse was not lame, he was *unsound*, because he had *splints*, which splints were (according to Mr. Sewell's notions,) precisely the same as nodes in the human subject." I have made the above quotation for the purpose of showing that from a slight cause a horse will fall lame, and be rejected as unsound, even by those who are most careful in their scrutiny. Sore-heels—I have found—are thought but *little* of by horse-keepers and their grooms; they cannot imagine that so slight a sore as that sometimes met with in the heel can produce so much lameness; the foot must be at fault they exclaim. We have great difficulty occasionally in persuading the owner to place the horse at rest for a few days; it is generally thought that a cracked heel should pass unnoticed, and anything by way of medical treatment, is quite uncalled for. If a horse has disease of this kind, he cannot, for the time being, be considered truly sound; but it would seem as though one were *straining at a gnat* if he rejected the animal. These things can always be remedied, unless we have a crotchety purchaser to deal with who fancies he has bought at too high a figure; in that case he will avail himself of the excuse and shuffle out of the bargain.

Sandcrack.

Sandcrack will most probably fall under our notice at this part of the examination. It is usual to push back the hair at the coronet when the foot is being held up so as to have a good view of the origin of disease. Separation of the fibres generally commences at the superior portion of the hoof, and proceeds towards the inferior part. It is either a very trifling ailment or a troublesome one, depending upon the nature of the lesion; the crust at the superior part of the quarter being exceedingly thin, is frequently ruptured, which will often cause lameness, as the sensitive parts are implicated and exposed to the annoyances of dirt and other causes together with concussion produced by almost all ordinary shoes, when a separation of the fibres takes place midway, or commences at the inferior part of the crust. As a general rule, true sandcrack may be prevented by ordinary care. If the fissure should make its way towards the upper half it will not occasion inconvenience or lameness *unless both tables of horn have suffered separation.* Brittle and shelly horn will be more liable to sandcrack than horn of a tough and healthy description; indeed, it may be questioned whether healthy horn is ever found with sandcrack in it. If we could at all times learn the true state of the parts for some time prior to the appearance of the crack, I make no doubt we should be able to detect much feverish heat in the foot. Professor Spooner, in his lectures, stated that "it is not usual to find it in circular feet; it is almost always found under the centre of gravity, &c. If the crack has grown out, or nearly so, from above downwards, I should say, it would be of no consequence. It may be, however, an hereditary predisposition, and it may be produced again from any predisposing cause." Again. "It is found always in an altered state of the fibres." I can bear testimony to the truthfulness of these remarks, and am glad to have availed myself of the notes taken at the learned professor's lectures. When the crack continues so as to reach the sensitive parts, it will invariably produce lameness. Under any circumstances, unsoundness is the result of sandcrack.

False Quarter.

False quarter is generally the sequel of quittor, although an injury to the *coronary substance* may, and does sometimes, produce it. False quarter cannot be cured by any means; when once established it remains as long as the life of the animal lasts; it, therefore, must of necessity be considered an unsoundness.

(*To be continued.*)

THE OPERATION OF " FIRING " FOR ROARING. —TREATMENT OF SPAVIN.

By E. C. DRAY, M.R.C.V.S., President of the Yorkshire
M.V.A., Leeds.

I AM quite sure that many members of the profession, as well as myself, will thank Mr. J. G. Cattrall, M.R.C.V.S., for his very candid letter in last month's *Veterinarian* in reply to mine of December last, relative to the operation of " firing " for roaring. I trust other members will follow Mr. Cattrall's excellent example, and give us the benefit of their experience, so that the subject may be fully discussed and ventilated.

But I would respectfully suggest that the professors of the Royal Veterinary College should on all occasions thoroughly investigate any new operation or mode of treatment, so that we provincial vets. may have their authority to state to our patrons the result of the College experiments.

I have had my doubts of the good effects of " firing " for roaring, and suspected there was a strong odour of empiricism about it. Another operation for " bone spavin " is performed by some veterinary surgeons, and, as I am credibly informed, successfully, by dissecting the integument over the spavin, and introducing some caustic substance, then replacing the integument and inserting sutures. Perhaps those practitioners who resort to this operation will inform us as to its results, and if I have rightly described it.

OBSTRUCTIONS IN THE BOWELS OF DOGS.

By THOMAS GREAVES, M.R.C.V.S., Manchester.

THE subject of this communication may not possess to some of your readers that interest and value which it would had any particular mode of treatment been adopted, whereby a cure had been effected and the lives of the patients saved. Others, again, may think as I do, and maintain that cases which recover are not at all times the most interesting or capable of affording us the greatest amount of valuable information as future guides, nor of exciting the same amount of useful matter for contemplation and reflection, as do well-

marked cases during the animal's illness, added to the advantage of ascertaining the real or true state of the case after death. In all cases that recover we can only approximate the truth by surmise. In some the opinion formed from the symptoms may be very wide of the mark, but, the patient recovering, the error is never found out. I maintain further that the simple fact of a patient recovering is not always a certain and satisfactory proof that our view of the case was correct, and that the treatment was the best and most proper which could have been adopted, any more than it would be right to conclude, on the other hand, that because the patient did not recover it was a proof that the treatment was improper. But to my point. A few months ago a small terrier dog was brought to me, apparently in a sinking condition, from the impaction of a solid compact substance within the rectum, and partly projecting from the anus. It appeared a perfect fixture, and was so firmly grasped by the sphincter ani that it could not be passed backwards or forwards by the animal. He had suffered in this way for several days, had been constantly yelling, and was in great pain. I carefully and gently grasped the substance with a pair of forceps, and by dint of drawing gradually and gently, and at the same time carefully manipulating the mucous membrane of the rectum backwards over the substance, I succeeded in removing it. On examination, it proved to be an angular-shaped piece of bone, enveloped in dry and hardened fæces. The dog rapidly recovered. But the question of interest in connection is, how long had it taken for this large piece of bone to pass from the stomach to the end of the rectum, bearing in mind at the same time the small calibre of the intestine of the dog? Each inch of the bowel, step by step, must have been preternaturally distended and yielded to admit of its passage at all.

The second case occurred in a middle-sized dog, of the retriever and mastiff breed. About a week or two ago I was requested to make a *post-mortem* examination of him, as it was suspected he had been poisoned. He was found dead in the morning, having been on the night previously, as they believed, in perfect health. I found the bowels quite empty, but the stomach full of *clean* bones, and unmixed with any other food. Most of the bones were small and angular, and would have filled a good-sized basin. At the pyloric end of the stomach, just at its entrance into the duodenum, the bones were all of one kind, *viz.*, broken or split cylindrical bones, like those of a fowl's leg. These would have filled a large breakfast-cup. They were lying across the opening,

completely blocking up the passage. All were perfectly clean, with no admixture of any other food. The stomach was inflamed.

Now, I was assured that this dog had eaten his usual food up to the night before. The impression upon my mind was that these bones had been some time, say for many days, or perhaps weeks, in the stomach, and that his regular meals must have been vomited, but that he could not dislodge the bones in this way.

The third case was a large mastiff and retriever. I was called to him a few weeks ago. He had had no motion for *four weeks*. He was a voracious feeder. A few months previous he had voided a large champagne cork.

I injected enemas, passed my forefinger up the rectum, and gave various powerful purgatives. By external examination, I could feel a very large solid substance in the bowels. He died at the end of three weeks, having been *seven weeks* without having had any passage whatever.

On making a *post-mortem* examination, I found an accumulated mass of dry fæces, resembling half-baked, dark-coloured clay. It was not, however, gritty, but greasy on being rubbed between the finger and thumb. In form it resembled large German sausage. It weighed 2 lbs. 6 oz., was 19 inches long, and $2\frac{1}{2}$ inches in diameter. It was so situated as to abut against the bones of the pelvis, apparently showing that if it had not been for this bony obstruction the bowel would have been expanded sufficiently to have allowed of its expulsion.

SECRETION OF MILK BY A YEARLING FILLY.

By THOMAS D. BROAD, M.R.C.V.S., Bath.

A SHORT time since I forwarded to you a bottle containing some milk taken from the mammary gland of a cart-filly now *one year* old, belonging to Mr. E. Mathews, of Bath, which had never been impregnated. In the early part of January the gland was first observed to be enlarged, and shortly afterwards it became very much distended, and milk constantly dropped from it as the animal walked about the field. A quart could be obtained at a milking. The filly was at that time in good condition, but gradually lost flesh up to the middle of March, at which time the flow of milk nearly

ceased. Since then she has been able to get some grass, and is fast regaining her condition. The mammary gland is, however, more distended than it has ever been, and the quantity of milk is much greater.

These cases are not common; I have known two, in both of which, however, the milk was only small in quantity, and did not continue long. These fillies belonged to a Mr. Pocock, of this neighbourhood. I find that there are two or three cases reported in the *Veterinarian* of the same kind as this.

[An examination of the milk, both chemically and microscopically, showed that it differed in no essential particulars from milk yielded by animals under ordinary circumstances.]

CASE OF OSSEOUS TUMOUR ATTACHED TO THE INNER AND FRONT PART OF THE HOCK.— OPERATION.

By the Same.

THE accompanying tumour was dissected from the hock, at the seat of bog-spavin, of an aged bay cob-gelding, fourteen hands two inches high, belonging to Walter Long, Esq., M.P., who had a year previously refused 180 guineas for him. The enlargement had been increasing in size, notwithstanding the repeated applications of iodine ointment for nearly twelve months previous to my seeing the animal. It was loosely attached to the capsular ligament, although it did not interfere much with the action of the hock; but I nevertheless considered that there was much danger of wounding the capsular ligament in the operation of removing it. I also feared an unfavorable result from subsequent sloughing.

The operation was performed on the 24th November, 1863, and the subsequent treatment consisted in the application of cold water only. The edges of the wound required to be occasionally touched with caustic. In about a month the animal was daily exercised, and on the 14th January he was ridden home, a distance of fourteen miles.

I have not seen the animal since that time, but have been informed by the groom that the edges of the wound are quite closed, and that the case went on most satisfactorily from the time the animal left my infirmary.

[The tumour was spheroidal in form and about the size of an orange.]

SUPPOSED DEATH OF THREE COWS FROM
GATHERING UP PORTIONS OF LEAD (THE
SPRAY OF RIFLE BULLETS) WITH THEIR
FOOD.

By W. WATSON, M.R.C.V.S., Rugby.

IN place of continuing my remarks on the medicinal properties of the *Aconitum napellus* in this month's Journal, I purpose noticing a case which has been brought before me within the last few days, and which I think is of some interest and importance, more especially as the opinion of the members of our profession may be asked in like cases during the summer months, when rifle shooting is principally carried on. The following is a brief history of the case:

The rifle butts at which the Rugby Rifle Volunteers practise shooting are situated about a mile from the town, adjoining some rich meadow and pasture land, irrigated by the sewage from the town, and in the occupation of a gentleman named Mullins. A few days ago Captain Wratislaw (the captain of the Rugby Rifle Volunteers) received the following note from Mr. Mullins:

“NEWBOLD; *April 9, 1864.*

“DEAR SIR,—I beg to call your attention to the following case. The parcel forwarded by bearer contains a portion of the ‘spray’ that was yesterday taken from the paunch of one of my cows, and had evidently caused her death. She had been ailing for some months, and when opened the stomachs were found to be highly discolored and inflamed, the lungs pulpy and full of a frothy phlegm. The symptoms for above a fortnight previously to death were—entire loss of appetite, great thirst, violent purging, increased respiration, grunting as though in considerable pain, indisposition to move, &c. As regards the manner in which the lead got into the stomach, I have no doubt it was gathered up from time to time with the food. I may add that within the past four months I have lost two other cows which presented precisely the same symptoms, though, unfortunately, through their not having been examined, I am unable to say that they died from a similar cause. I should have stated that the lead must have been in the cow for some months, as since November she has not been where it was come-at-able.

“Respectfully, &c.,

To Capt. WRATISLAW.

“BICKNELL MULLINS.

This note was accompanied by a small parcel containing portions of the lead, &c., taken from the cow's stomach. Upon receipt of this, Captain Wratislaw called upon me, showed me the letter and parcel, and asked my opinion as to whether the lead was the cause of the death of the animal. I found the parcel to consist of numerous pieces of metallic lead, covered with a film of oxide, doubled into various shapes, a portion of a percussion cap, and a piece of iron, probably the remnant of a particular class of bullet. These were the facts upon which an opinion was asked, and the importance of the reply is of more importance than at first sight appears, inasmuch as legal proceedings for the recovery of the loss (although such is not at all likely to be the result in this case) would very much depend upon the opinion given by the veterinary surgeon. The question then arises, was the death of this animal caused by, or in any way attributable to, the lead found in the stomach? With a view of making the matter as clear as possible, I went and inspected the pasture in the vicinity of the rifle butts, and found fragments of lead of different sizes, and what is termed the spray from the bullets after striking the iron target, spread about in considerable quantities amongst the herbage for a distance of upwards of a hundred yards on either side of the target. In this field ten cows had been kept from the spring of the year until last November; since that time three had died, presenting symptoms similar to the one described. It is unfortunate that no professional examination was made of the animal either before or after death; but from inquiries I ascertained that the animal in question was five years old, and had given birth to a dead calf about a month previous to her death. The person that opened the cow said, in addition to what is described in Mr. Mullins' letter, that the paunch (rumen) externally presented a peculiar indented and puckered-up appearance, quite different from any he had before seen; and on cutting into it to discover the cause, he found in the lower end of the paunch the pieces of lead, &c., above described; he also noticed portions of lead at the bottom of the holes constituting the honeycomb stomach (reticulum). Such is the history of the case, and after careful consideration of the matter, I am inclined to attribute the death of the animal to the injurious effects of the lead. That the animal did not present the usual symptoms of acute lead poisoning, such as colic, paralysis, obstinate constipation of the bowels, &c., will be at once observed; but it must be borne in mind that the lead found in the stomach of the animal, although when in its metallic state is devoid

of poisonous properties, had, by remaining in the stomach of the animal for several months, been slowly converted, in all probability, into the poisonous compounds of carbonate and acetate of that metal, and these by a long-continued absorption and accumulation in the system had so far produced permanent derangement of the digestive functions as to give rise to the symptoms exhibited in the animal, eventually terminating in its death. If analysis could have been made of the liver, spleen, and other organs of the body, I have no doubt lead in considerable quantities would have been found. Another interesting question in the case presents itself, namely, as to whether the large quantities of lead scattered amongst the herbage may not only be gathered up by animals in its metallic state, as in the above case, but also by becoming oxidized and converted into the various salts of the metal, be taken up by the growing plants and thus render the herbage poisonous. This was proved to have been the case in an examination made by Dr. Taylor on some grass from the neighbourhood of Mendip, and recorded in his work on 'Poisons.'

DR. BUSTEED ON STRINGHALT.

Letter from Mr. GEORGE FLEMING, F.R.G.S., F.A.S.L.,
V.S., King's Own Hussars.

GENTLEMEN,—I regret very much that I had not an opportunity of seeing the March number of your Journal until after the date for despatching communications, as I should have been most anxious, with your kind permission, to reply to that portion of Dr. Busteed's letter wherein he does me the honour of sundry remarks, which, if neither very lucid, very instructive, nor yet kindly conceived, at least merit a response, as that gentleman deigns to seek for information on the subject of stringhalt beyond that which, seemingly, he is able to find in a collection of more than *five hundred* works on veterinary science.

Professor Varnell's comments on the other portions of the doctor's letter will, I think, go to testify in the strongest manner that there are some matters, besides the actual and true pathology of stringhalt, in which my interrogator is not quite at home, though these pertain as much to human as they do to comparative anatomy and physiology.

The doctor desires me to inform your readers the name of the English veterinary physiologist or anatomist who makes mention of the sulci in the astragalus being covered with cartilage, or who—with the exception of Mr. Gamgee—even mentions their existence.

As I trust the doctor includes himself among your readers, I may, in addressing him in particular, excuse myself for thrusting this information upon them—if it can be worthily designated information—in asserting that no English veterinary surgeon ever made such a mistake as to describe the fosettes in the astragalus covered with cartilage. Without being in possession of such a formidable library as that of Dr. Busteed, or even pretending to possess more than some dozen and a half English and French veterinary authors, I am certain that this will be found correct.

With regard to their existence ever being mentioned, I may only say, that had Dr. Busteed been tolerably conversant with the contents of the volumes of the *Veterinarian* since the commencement of that periodical—all of which he says he possesses—he could not have failed to remember a controversy that took place some years ago between Professor Dick, of Edinburgh, and Mr. Spooner, of Southampton, in which the latter gentleman maintained that these sulci were the result of disease, and give rise to occult hock *lameness*: certainly a much more pardonable mistake than that of Dr. Busteed. I need not refer your attentive readers to this controversy, but in it the doctor will find that these excavations or depressions are described by the respected professor as natural and healthy contrivances for aiding in the movements of that important articulation, and NOT a cause of morbid symptoms or impeded action—in short, that their presence and dimensions are indicative of really good and sound joints.

So in this instance I miss the honour to which Dr. Busteed aspires—though not unwittingly—and I trust he will do me the credit of believing that I shall never make any pretensions to the title of “discoverer” until I have at least done others the justice of making myself acquainted with their labours. Such, I believe, is the preliminary and proper course to pursue before attempting to lay claim to that honour.

Perhaps other English veterinary authors besides Professor Dick mention these sulci. Certainly in all the modern French works they are described, and if there was any need to refer specially to one of these, I would name the ‘Nouveau Dictionnaire’ of MM. Bouilly and Reynal, article “Articulations,” pp. 76, 77, and 82, as likely to satisfy the doctor,

unless he is determined to cling to the unique views put forth by him.

Stringhalt is not, I think, very often witnessed in the fore limbs, and yet these sulci are never absent, to my knowledge, in the scapulo-humeral and humero-radial articulations.

But it is asking too much in seeking to occupy your pages by further discussion and reference to books or unpublished experience with regard to an affection on the nature of which Dr. Busted has not thrown the faintest light, but, as it seems, only made the subject more obscure by the unscientific way in which he has treated it, and attempted to make himself a discoverer despite the labours of others who had thoroughly studied the principles of pathological investigations.

If one more negative result can indicate the *probable* nature of this disease, I may add that an aged horse was destroyed at the Edinburgh Veterinary College in consequence of being so badly affected with stringhalt as to be perfectly unserviceable. Professor Strangeways conducted the *post-mortem* examination, and took every possible care to thoroughly investigate the various organs and textures of what was a very interesting and somewhat rare case. But not a trace of disease or structural change could be detected in the spinal cord, nerves, blood-vessels, or muscles; even the astragalus in both hocks was healthy, notwithstanding the controverted *ulceration* at the bottom of the grooves.

I am, &c.

To the Editors of the 'Veterinarian.'

PYÆMIA IN THE HORSE, THE RESULT OF MAL-TREATED STRANGLES.

By J. G. CATTRALL, M.R.C.V.S., London.

I WAS requested on the 13th of March last to see a brown carriage-horse, five years old, one of the stud of the French Ambassador's, to whom I have the honour of being veterinary surgeon.

On my entering a loose box in which the animal was, the following symptoms exhibited themselves:—Intermittent rigors, staring coat, cold extremities, respiration much hurried, more particularly in the act of inspiration, when a convulsive effort was made to cough, preceded by convulsive movements of the voluntary muscles, especially of

the pectoralis magnus and panniculus carnosus, the latter more particularly; the visible mucous membranes had assumed a semi-leaden and yellow hue, and the Schneiderian membrane was of the same colour, the saliva very tenacious, the breath fetid and much below its normal temperature, the surface of body very sore, more especially over the region of the submaxillary space, shoulders, knee-joints, and hind quarters showing a disposition to tumefaction, the pulse intermittent and almost imperceptible, and he had not voided any fæces nor urinated since the day previous. On my inquiring into the history of the case, I was informed by the first coachman that the animal had been recently purchased by the prince in France, and had only been in their stable seven days, since which time he had refused to feed; a discharge from the nostrils also existed, and a cough, with a swelling between the fauces. The coachman, considering it, as he said, to be a common case of strangles, thought it right to give the horse a five-drachm dose of aloes, and to blister the throat. He informed me that it went on favorably for a day or two, but, to his surprise, on the following morning he found the animal much worse; that the swelling of the throat had quite disappeared, likewise the discharge from the nostrils had ceased; and the animal, in fact, was showing all the symptoms I have described. It was from a knowledge of these facts, blended with the symptoms, that caused me to infer that I had a case of pyæmia to contend with, more especially when I considered the large amount of *materies morbi* which must have been carried into the circulation; this being sufficient to account for the symptoms related. Knowing that my first effort must be to try to restore the circulation to its normal condition, I gave the following draught:

℞ Spt. Ammoniaë co., ℥j;
 Solut. Ammon. Carb., ℥ss;
 Decoct. Sarsæ co., ℥ij;
 Tinct. Calumbæ, ℥ij;
 Ether. Chloric., ℥ij;
 Aq. Ment. Pip., q. s. Fiat haustus.

To be repeated every five hours.

Strict injunctions were given that the head should be steamed, the animal well clothed, and the legs bandaged. A clyster was also thrown up.

7 a.m.—The animal is a little better, evidenced by the respiration being more tranquil, the circulation much more natural, and the extremities warmer. But the head is rather more swollen and pendulous; the urine is thick and offensive;

he has voided a few fæces, hard and pale in colour; the visible swelling is now more evident over the maxillary space, pectoral muscles, and gluteal region, and very sore to the touch. The same treatment to be continued, with the addition of a bottle of port wine given daily.

6th, 9 a.m.—The animal continues to go on favorably, although he does not lie down, and seems sore from head to foot. Another abscess is now forming over the region of the parotid gland, which is hard and painful. Persevere in the same treatment.

7th, 9 a.m.—Animal still doing well; he has taken rest during the night; the swelling in the maxillary space is much more developed, likewise over the parotid gland and the pectoral and gluteal muscles, evincing a strong disposition to the formation of abscesses. I now considered it time to assist in the formation of the same, and ordered hot linseed-meal poultices to be applied over the respective regions. Treatment otherwise continued as before.

At the end of three days the abscesses fluctuated sufficiently to admit of their being opened, which I did as boldly as possible, giving ample room for the discharge of their contents.

Taking into consideration the heavy drain which had been imposed upon the system, I now gave the following:

℞ Ammoniac Carb., ℥iiss;
 Ferri Sulph., ℥j;
 Pulv. Zingiber., ℥j;
 Quinæ Disulph., ℥j;
 Pulv. Glycyrrh., ℥viij;
 Syr. Simpl., q. s.;

To make twelve balls, two of which to be given daily, one at 11 a.m. and 4 p.m.

Generous diet and careful grooming were ordered, and I am happy to say my patient is now convalescent.

A DOUBTFUL CASE OF GLANDERS.

By "ARGUS."

GENTLEMEN,—Some months ago I was consulted about a horse, suffering from what was supposed to be "a cold, with discharge from the nose," the owner of the animal being a man who knows very little about horses or their diseases.

Upon examination, I found the following symptoms to be present:—A constant, though copious, discharge from the near nostril; three good-sized ulcers on the Schneiderian membrane of the same, and considerable enlargement of the submaxillary gland on the near side. The horse was in fair condition, had a good coat, fed well, and had no cough. I was told the discharge and enlargement under the jaw had been noticed about a month before, and upon pushing my inquiries still further I learned that a horse, with which my patient had formerly run in a carriage, had died in a very emaciated state about a year before, having been affected with discharge from the nose and “lumps” under the jaw for months previous to its death.

This circumstance, added to the state in which I found the horse in question, justified me in telling the owner that in my opinion it was a case of glanders, and that if the animal were mine I would destroy him. His value was only some £20 or £25. At the request, however, of the owner, the case was treated, but I told him to be very careful in his visits to the horse, and to keep it away from all others. No improvement took place from the treatment, and the horse is now in exactly the same state as when I saw it five months ago; it is daily driven in a carriage with another (a sound) horse. The proprietor being fond of money and not over wealthy, cannot, or will not, destroy this diseased animal, though he has been warned of the possible consequences to his other horses, his servants, and himself. Surely there ought to be some stringent law on the subject. In this country there is none bearing upon infectiously diseased animals the property of *civilians*. In the army such a horse, whether a charger or trooper, would be shot at once. Would you have any hesitation in pronouncing such a case to be glanders, and therefore of a dangerously infectious nature? The ulcers are unmistakably present, plainly visible on the mucous membrane, about an inch and a half above the line of union with the skin. The discharge is constant, thick, discoloured, and adherent to the nostril. The submaxillary enlargement hard, firm, and close to the jaw. For six months no change has taken place in this state of things.

I would try inoculation on a young ass, but that the owner of the horse appears to prefer remaining in doubt to having the true state of the case proved, as this might compel him to destroy the horse, and thus lose a sum of about £20.

No one better understands the difficulty of deciding on the true nature of a disease in the absence of the patient

than " Argus," and hence our answer to his inquiry must be received in a somewhat qualified manner.

The symptoms in the case in question, viewed as a whole, would justify us in stating that the animal is the subject of glanders. It is by no means uncommon for glandered horses to keep up their condition, and to perform a certain amount of work, even for a much longer space of time than this animal has done. Such a fact in no way militates against the animal being the subject of glanders, nor does the circumstance of the other horse being apparently uninjured by cohabitation for so long a time disprove it.

The test suggested by " Argus " should be tried. Such a case imperatively demands a special investigation.]

THE OPERATION OF " FIRING " FOR ROARING.

By " ACTÆON."

IN some of your late publications mention is made of the operation of firing in the treatment of roaring. If you consider the enclosed professional " mite " of sufficient worth for acceptance, it is at your service.

In 1856 I recollect purchasing a number of young horses, and, as a matter of course, all the concomitants of first stabling soon became rampant—catarrh, strangles, and such like juvenile maladies appearing. The usual routine of treatment having been gone through, health again apparently predominated, their condition improved, and they were considered equal to the fatigues of breaking. Not many days after their leaving my hands I was informed, much to my discomfiture, that two of the number were bad roarers, and most certainly they were so. Not seeing clearly how to dispose of them for some few weeks, they were thrown by as worthless for the purpose for which they were purchased. About two months afterwards, when examining them, much to my surprise I found one quite sound, and the other nearly so, a slight whistle only indicating the disease, and that ultimately disappeared.

I think the advertising gentleman in *Bell* must have stumbled on a case somewhat similar to the foregoing.

I think it was in 1857 I first saw or heard of the application of the hot iron to the throat, Mr. Farrell, of Dublin, bringing it to my notice in his treatment of sore throat, and I believe he

was of opinion that roaring in many instances was prevented by such active treatment. Since then I have used the iron pretty freely in cases of chronic sore throat, and I have found the treatment clearly to have had a very good effect in allaying or rather cutting short the cough, and I do not think roaring has been so common a termination of sore throat as formerly.

In horses with a certain conformation of neck I have found roaring follow an attack of the throat, in spite even of a second application of the iron. A case of this description has been under my observation for upwards of four years.

RETROSPECTS OF VETERINARY PRACTICE.

By "MENTOR."

LAMENESS ARISING FROM DISEASE OF THE LIVER.

(Continued from p. 224.)

THE following case presents some peculiarities :

December 7th, 1861.—A chestnut mare, five years old, 15·2 hands high, nearly thorough-bred, belonging to a hunting farmer, had been purchased six weeks prior to the above date, and shortly afterwards fell lame, for which a liberal application of *goose grease*, applied twice a day to the withers, shoulders, elbows, &c., *in seriatim*, had failed to effect a cure, when on the present date my attendance was requested.

The animal was rather low in condition, but this was ascribed to severe hunting over a heavy country, her breed, and the fact that she had walked some distance ; also that she had been in the hands of a not over-respectable dealer previous to the present owner becoming possessed of her.

I had her run out, both on grass and the road, but the lameness was in no wise altered by the change. *In the walk it was not observable, and most apparent in the trot ; but in the gallop I could detect a peculiar holding back of the whole shoulder, which in the trot merged into a modified lift, when the limb was brought forward.*

However, in no other respect could I detect any want of flexion or extension, no stiffness, no undue action, no injury to muscle or tendon, &c., except a slight enlargement upon the antero-external portion of the radius above the knee,

which was not so large as a nutmeg, and on moderate pressure being applied, to which the mare flinched.

Half an hour was occupied in the examination of the animal, and by no means with any satisfaction resulting as to the precise nature of the complaint.

A dose of physic was, however, administered, and arnica lotion applied to the knee, enjoining care and attention to the state of the animal until I saw her again. This took place on the 12th, when a lengthened examination was again made, and to inquiries instituted I received the following information:—

There was a peculiarly lean and unthrifty appearance of the animal, and she had not gained, but rather lost, condition since she came into the owner's possession, notwithstanding a liberal diet being allowed her. The appetite at times was capricious, and varied much, the bowels irregular and sometimes costive; but diarrhoea had not ever been present; skin scurfy, and the coat does not lie well, although she is well clothed and in a warm box; the pulse 36, small and weak, and auscultation proved the lungs to be in a healthy state. Nevertheless, *there was a peculiar dulness about the animal in and out of the stable, not in keeping with her breed and general character.*

My fears, which pointed towards the liver as the origin of the affair, were communicated to the owner, who, however, desired me to reduce the nodule upon the knee before any further treatment was instituted.

On the 24th, after several applications of Ung. Iodini, the nodule was lessened, but the lameness continued as bad as ever, and the mare therefore was left in my hands.

January 2nd, 1862.—The animal has been given alterative doses of calomel daily since my last visit, and with some benefit, the lameness being better; and considering it likely she would now come round, I was told, if she did not progress satisfactorily that a message would be sent requesting my attendance. Owing to this, I saw the mare no more until May 6th of the same year, when she was not quite sound, although much improved in that respect; still it was not so with regard to her general condition, it being about as before stated.

She was now suffering from what appeared to be an attack of laryngitis, accompanied with a racking cough, anorexia, weakness, low and feeble pulse, numbering about 56, coldness of extremities, &c., symptoms which greatly masked the disease that was really doing all the mischief. I felt but little could be done; yet treated the patient, although no

signs of amendment succeeded the loss of cough, &c. The pulse increased, the weakness came on more rapidly, and she died on the 18th.

On the next day a *post-mortem* examination was made, and the following were the appearances:—

A man had already skinned the animal, and proceeded with care to detach the fore limbs, especially that on the near side; but nothing abnormal could be detected. The abdomen was next opened, all the viscera of which, *excepting the liver*, were perfectly healthy. The lungs were congested, especially on that side upon which the body had lain throughout the night previous.

The investing membrane of the liver was opaque and thickened, and the substance of the gland greatly affected, about one half being congested and easily torn, large clots of blood falling from it. The other half was condensed, and its structure entirely destroyed. In size, the whole organ was about natural. The portal vein, about two inches below the bifurcation, contained something hard, which extended through the branches to the liver, and on being opened was found to be a closely fitting plug of lymph, some inches in length, and arborescent in its appearance. The coats of the vessel were thickened, and whiter than natural. Upon closer examination, the plug was observed to be furrowed by numerous small channels upon its circumference, and in no way adherent to the walls of the vessel. By this means I apprehend a small portion of blood only was admitted to the organ, not sufficient probably for its nourishment, thus accounting for its diseased condition; but it is strange that, on the other hand, no diminution of size was the result.

In cattle, under such disease of liver, dropsy of the abdomen generally follows. No signs of it were manifest here.

(*To be continued.*)

Facts and Observations.

THE CATTLE DISEASE.—The Roman Government have, it is said, published a very interesting and instructive report on the late terrible cattle disease in the Campagna. The most important features in it are, that the disease is certainly of a highly contagious nature, and, as a rule, it dies out in the fourth generation.

The Viceroy of Egypt has expressed his conviction that although the cattle murrain has been a grievous calamity, it will confer a lasting benefit on the country, by compelling the cultivators of the soil to adopt an improved system, which will both civilise his people and enrich them, thus evoking good out of seeming evil.

DISEASED MEAT IN THE CITY MARKETS.—In spite of the continued condemnation of the meat, game, and poultry, sent to the city markets in an unfit state for food, and notwithstanding the vigilance of the officers and the punishment which has been inflicted on offenders, the practice is still on the increase. There is no other country in the world, we should think where such practice would be tolerated, and it is high time that some severe legislative measures were adopted to prevent it. During the last quarter, 56,326 lbs. of meat were condemned; the average for the same quarter for the last three years being 36,965 lbs.

EXTRACTION OF IRON FROM THE CINDERS OF PUDDLING FURNACES.—It is well known that immense quantities of cinders are drawn from puddling and retorting furnaces, which are considered almost useless. Mr. A. L. Fleury, of Philadelphia, states that they contain from 25 to 50 per cent. of metallic iron, mixed with sulphur, silica, lime, and alumina. To separate the iron has long been his object, and he finds he can effect it by the agency of lime while being hydrated or slaked. For this purpose he mixes powdered burnt lime with fine-ground cinder, and, after wetting the whole with water, exposes it to the drying influence of the atmosphere. The compound is then heated in a common puddling furnace, and treated like pig iron. The iron thus obtained, however, retaining some sulphur, renders it red-short. To extract the sulphur, a chlorine salt is mixed with

the water used for slaking the lime, and thus he says, if properly worked, he invariably gets a good quality iron.

A patent, we perceive, has also recently been taken out for obtaining from the slag of blast furnaces an aluminate of soda and potash, so that that which has long been thought of no value can by science be rendered useful.

CAUSE OF PHOSPHORESCENCE IN MINERALS.—According to Dr. Phipson, the cause of phosphorence is a vibratory movement of matter. The light of the sun, acting upon a mineral substance, occasions a certain vibration, electric, chemical, or magnetic; but this vibration not being able to continue when the action of light ceases, that is, when the substance is placed in obscurity, the body gives back light whilst losing the electric, chemical, or magnetic vibration occasioned in it by the rays of the sun. The magnetic vibration, he considers, is probably commonest.

BENEFITS DERIVED FROM VAPORIZATION.—It is the opinion of M. Morin that a greater benefit results from the diffusion of watery vapour in the air than is generally entertained, namely, that dependent on the development of a certain quantity of electricity and the production of active oxygen, which possess in a high degree the property of destroying, by burning, miasms and emanations from putrefying substances. In this way it is that storms and tempests become such purifiers of the atmosphere as they are known to be. Differences in the thermal state of the air sensibly modifies its electrical state.

From experiments instituted by M. Morin, he also finds an acid is generated, this being most probably, he says, a nitrogen product.

VANADIC ACID.—The oxide of the metal vanadium, which as yet has not been applied to any useful purpose, nevertheless appears to be pretty generally diffused in metallic and other combinations. Dr. Phipson has made the following somewhat curious calculation:—"A ton of London clay contains," he says, "1 lb. 2 oz. of vanadic acid; say 1 lb. to the ton in round numbers. If we suppose that there exists only about a million tons of this clay at the west end of London—for instance, in the Hyde Park and Bayswater districts alone—we have evidently upwards of 445 tons of vanadic acid. And if we calculate the quantity of this acid which exists in the London clay of the metropolis, supposing London to cover fifty square miles, and taking the stratum

of clay at the moderate thickness of four yards, we find that under this city alone there lies probably far more than 303,443 tons, or about 679,712,320 lbs. weight of vanadic acid. The present price of this substance in shops where chemical curiosities are sold being about one shilling and sixpence a grain, or £32 5s. 6d. an ounce." As applied science is constantly, at the present day, rendering available that which at one time was thought nothing worth, so compounds of vanadic acid may possibly hereafter be found useful.

THE DONDEROBO.—This is the name given by the natives of tropical Africa to a fly, whose bite, according to Baron von Decken, is as deadly as that of the better-known Tsetse, described by Dr. Livingstone, (see *Veterinarian*, vol. xxxi, p. 17), but fatal to asses and dogs only. The baron states the effect of the poison seemed to be to produce a tubercular deposit, following immediately upon acute inflammation. These flies caused serious inconvenience and even danger to the expedition, by the destruction of the draught asses of the caravan.

The inhabitants of one of the mountain ranges manifested much opposition to their progress, they having a notion that the mere presence of a European would prove fatal to their cattle.

ENTOZOA IN THE BLOOD.—At a late meeting of the Royal Medical and Chirurgical Society, Dr. John Harley read a paper on a malady (hæmaturia) produced, at the Cape of Good Hope and the Mauritius, by a species of *Distoma*, which he proposed to call *Distoma Capense*. Dr. Cobbold observed that no one for a moment could doubt that Dr. Harley's illustrations represented the ova of the so-called *Distoma hæmatobium*; in fact, all tended to show that this hæmaturia of the Cape was identical with the well-known Egyptian malady. He had also discovered this parasite in the portal blood of an African monkey, and it was quite clear to him that our fellow-men at the Cape, in the Mauritius, on the banks of the Nile, and the monkeys, too, obtained it by swallowing the "intermediate bearers" of the Bilharzia. These "bearers" or "hosts" were small molluscs or aquatic animals, inhabiting the African rivers. They contained the higher larval states of this parasite, the larvæ being introduced into the human body by drinking the African waters unfiltered. Our readers will remember, in the "Translations" by Mr. Ernes, the interesting account given of *Bacterium*s existing in the blood of animals affected with splenic apoplexy.

CAUSES OF FERMENTATION.—M. Pasteur, in reference to the interesting changes that obtain under the denomination of fermentation, says that the vinous or spirituous form, and also the acetic, are attributable to the growth of certain vegetable productions, exceedingly minute, known respectively as yeast and vinegar plants; whereas the last phase, the putrefactive or destructive, is referable to the work of animalcules—vibriones—which can exist without oxygen; indeed, to them it becomes a poison, while they luxuriate in nitrogen.

ACETIFICATION.—M. Blondeau states that, if casein be added to a saccharine solution, mycoderms are developed, and acetic acid formed. Referring to M. Pasteur's statements respecting the acetifying action of certain mycoderms, M. Blondeau remarks that his experiments show that the plants perform this function only when they assume a membranous form, and that the property of taking oxygen from the air, and with it transforming alcohol into vinegar, belongs to the membrane as such, and is not a physiological action.

A NEW ALKALOID.—Messrs. T. and H. Smith, of Edinburgh, in separating aconitina from *Aconitum napellus*, found a crystalline substance, possessing alkalin eproperties, new to them, and which they believe must be classed among the natural organic alkalies. To it they have given the name of *aconella*. It does not appear to possess any poisonous property, as they gave three decigrammes of it to a cat without the animal experiencing any inconvenience. The characters of *aconella*, they state, bear a great resemblance to narcotine; indeed, they suppose these two alkaloids to be one and the same, although obtained from plants belonging to different natural orders.

A NEW KIND OF MATICO.—This drug has of late become scarce, and of high price consequently, through the war that is raging in America. As a substitute for it there has been introduced into the market, so states Professor Bentley, in a paper read by him at a meeting of the Pharmaceutical Society, a plant of the order *Piperaceæ*, most probably a species of the same genus as that which yields the officinal matico. It has been found distributed throughout the tropical regions of America and other places; and in its medicinal properties, when internally administered, its action is found to be nearly identical with the true matico; but

when externally applied as a styptic, from its structure it will not act mechanically to the same extent as it does.

NEW SPECULATIONS RESPECTING MATTER.—It is conceivable, says Professor Graham, that the various kinds of matter now regarded as elementary substances may possess one and the same molecules in different conditions of movement. The essential unity of matter is an hypothesis in harmony with the uniform action of the gravity of bodies. We may imagine one substance only to exist, viz., ponderable matter, and that this is divisible into ultimate atoms, uniform in size and weight; if these atoms were at rest, the uniformity of matter would be perfect. But they always possess more or less motion due to some original primordial impulse; this motion gives rise to volume, and the more rapid the motion the greater the space occupied by the atom. Thus matter of different density forms different substances that are usually regarded as different incontrovertible elements; and this hypothesis may be pursued through the various phases of combination, the different states of solid, liquid, and gas, and the colloid and crystalline forms of matter.

A RENEWED attempt has been made to plant the Cinchona, from which quinine is obtained, at Trinidad. It has been planted at a height of 2800 feet above the level of the sea. The soil is of the richest description.

EFFECTS OF NEW OATS.—From time immemorial (says the *Salut Public* of Lyons) it has been generally admitted that new oats are not given for food until two months in store. This would be of no great importance if the previous year's oats were always to be had in sufficient quantity, but when scarce there is a difficulty in finding food for horses. Experiments just made by order of the Minister of War have proved that new oats are not more dangerous to animals than new hay; both are, on the contrary, sweeter and more stimulant. It is for the latter reason alone, and to avoid indigestion and irritation, that it is thought advisable to mix the new corn with a moderate quantity of old.

THE VETERINARIAN, MAY 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE RECIPROCITY EXISTING BETWEEN THE DIVISIONS OF MEDICAL SCIENCE ; THEIR VARIETY, ORIGIN, AND PROGRESS.

It does not derogate from our position as a profession by our borrowing from time to time from the older and more important division of medical science, the human, as by so doing we advance in common with it. Moreover, all that in it appertains in reference to the higher creature, man, in degree applies to those animals that are placed lower in the scale of creation than he is ; both being subject to the influence of the same physical laws, and similar effects being produced on both by the operation of certain causes. Of course, such positions as these will be accepted with limitations, as they are general in their application. To give an illustration :—a medicinal agent that is productive of a certain effect in one animal may not excite the same action in another, because there are modifying circumstances that alter its influence : the structures may also differ—as, for instance, the stomach—and likewise their susceptibility of being acted upon.

It is this knowledge which principally makes the difference in the practice of human and veterinary medicine. This, too, renders the last named often far more complicated and perplexing than the former, since the so-called medical man receives far greater and more numerous aids in his investigations than the veterinary surgeon is able to obtain in his. On the other hand, the comparative value of the two classes of animals must be taken into account—if so be a *money value* can be put upon the first-named animal, man, which we much more than doubt—as well as the fact that, “a dead horse tells no tales.” Nevertheless, “a merciful man is merciful to his beast,” and selfishness, if

no higher motive moves mankind, will always cause them to minister to the wants and diseases of their animals, the treatment of which is not so very dissimilar to that resorted to for themselves; that is, if they are wise in seeking out a fit administrator. Here it is where the community too often fail. They can hardly be brought to believe that the same laws obtain among the lower animals as among themselves; that the same principles of therapeutics must be brought to bear on the one as on the other; or that science need ever be called into requisition in the treatment of their diseases. Those, however, who have made either division of medicine their study know to the contrary. Moreover, as science always is and ever will be progressive, for we shall never arrive at the ultimatum of knowledge, so it is that changes are constantly occurring; hence the theory of to-day may be the subject of ridicule to-morrow. In the practice of physic this is markedly seen, and this is the reason why so many subdivisions exist among us at the present day, each having its advocates, while it is to be feared that too many run to extremes in their views in all, forgetting that the medium is always the safer course to pursue:

“Medo tutissimus ibis.”

But it was just the same in days of old, as appears from the following article in the *Revue des Deux Mondes*.

“Antiquity has had its critics—either bitter and brutal, or satirical and polished. Heraclites hated physicians; he was wont to say that they would be the most silly of men if grammarians were not there to dispute the position with them. But this morose philosopher had his own system of medicine, and a peculiar practice founded upon his theories of nature. He made such good use of it, indeed, that he at last died through it. Empedocles—jealous of the physician Acron, illustrious by his writings and experience—gave himself out as a messenger from heaven, charged with the mission of exterminating diseases and other destructive scourges; he journeyed from town to town, carried in a splendid chariot, clothed in magnificent garments, and received adorations and sacrifices like a god. We know how he died, victim of his vanity or scientific curiosity. Plato, again, did not spare the doctors; he mocked with pleasure at their incapacity; but he, nevertheless, had a system of his own, which he had picked up from every quarter, as was his habit. From this we may conclude that from the earliest days there has been a rivalry between doctors and philosophers, and that the last were jealous of the first.

“The Greeks confined themselves to epigrams; but it was otherwise with the Romans. Physicians came at a late date into Rome, and had a difficulty in keeping their ground there. The elder Cato hated them, and prevented his son consulting them. And yet the rude censor practised medicine in his own fashion; he possessed infallible secrets and efficacious panaceas. His method was simple enough, and, absolute master of his house, he treated man and beast alike. Pliny gives us these details, and Pliny, we know, was not favorable to doctors. In Martial’s epigrams, to say nothing of other Latin poets, the doctors are ill-treated enough, and, we must admit, not without justice. The profession was in the hands of slaves, and degraded by venal souls, easy instruments, and too often accomplices of corruption, debauchery, immorality, and crime. Decay had then invaded everything.

“Next came the barbarians and universal confusion; and we lose sight of medicine during the first centuries of the middle ages. To the Arabs we are indebted for a sort of *Renaissance*; but it was in the first universities that the practice of medicine took the direction and the proper character which it bears still to this day. Now appeared the true physician, and by his side an adversary far more formidable than his opponent of antiquity.

“Before the middle age, the art of medicine was decaying fast; and as it passed through this long period it still continued in decay. The traditions of the Greeks were gradually lost; the exercise of the art fell into the hands of monks and clergy, for the most part very ignorant, and hence superstitious practices and absurd proceedings—the supernatural and marvellous being put in the place of experience and good sense. It was a time of miracles and prodigies—the sorcerers rivalling the saints; and while the plague and the lepra committed ravages among the people, the resources of medicine were useless to arrest the scourges. The Jews at this time were hated and persecuted; but yet they were run after for their medical knowledge, and for the drugs obtained by them from the East through traffic with the Arabs.

“The *Renaissance* awakened a spirit of inquiry. The records of antiquity, once again opened, were discoveries as of a new world. And then began the general strife against orthodoxy. Heretics and Protestants were to be found elsewhere besides in the Church. Aristotle and Galen were treated like the Pope, and so commenced the long quarrel between ancients and moderns.

“This struggle, also, medicine has passed through; but it gained an infinite number of enemies; and chiefly the charlatans. At an early hour these industrious gentry seized upon medicine, which offered so vast a field for the exercise of their ingenuity. From Montaigne down to Rosseau—not to mount higher or go down later—we find a concert of invectives against medicine, the noise of them being still audible, though weak. Infinite variations were played continually on the same strain. It has taken three centuries to reduce the pretensions of physicians to their true proportions. Chemistry, which appeared at the first dawn of the *Renaissance*, explained all the phenomena of the animal economy by the principles of a gross chemistry—seeing there nothing but fermentation, distillation, and effervescence of humours at work in the living laboratory. Then later, after the discoveries of Galileo and Newton, mechanics, with its levers and instruments, explained the forces; and after Harvey, hydraulics. Thus arose the sub-sects—iatro-chemists, iatro-mechanicians, and iatro-mathematicians. These were materialists, who soon found their opponents, the spiritualists. Truth was with neither sect; but the spiritualists have rendered most service to medicine. Stahl

produced Barthez and Bordeu, and Bordeu produced Bichat. Still, even at the present day—but how enfeebled!—the two parties are face to face. Gradually they are disappearing, leaving in history the remembrance of their long and ardent struggles—prolonged for three centuries and a half—from the end of the middle ages to the commencement of the French revolution.

“Two sects—either through indifference or through calculation, kept clear of the struggle—the empirics and the sceptics. At the head of the empirics was Sydenham. Their business was to watch attentively the origin and progress of phenomena, noting with scrupulous care the effects of remedies and the fruit of observation—leaving aside all useless speculations.

“Scepticism glided into medicine, thanks to the demi-savans. The title of sceptic belongs to those narrowed and pretentious souls, who, contented with a superficial view, seize only the surface of things, losing sight of the links which unite them, and boldly denying the existence of whatever escapes them, affirming in this absolute negative their incapacity and deficiency. Lower still in the scale of systems we find the eclectics—physicians who, following certain metaphysicians, think to find a perfect system in taking what is good out of every system. Their appearance on the stage announces the end of systems. In the scientific as in the social order, end means transition, a new phasis, commencement of a new order. Medicine, which has undergone so many vicissitudes, is thus at present traversing a period of transition; it is in the way of organization, in a provisional state.”

From all this we are induced to ask the questions—Are the many diversities which now exist anything new? Are they anything more than revivals of what once has been? It has been thought that man's doings, like storms, move in circles, and therefore a periodical recurrence of events takes place. Our present inventions and discoveries seem to have been before known, although perhaps, never so practically applied as now. A writer on this subject states that—

“The history of the dawning of great inventions shows us that nearly all our most important discoveries have been subject to repeated revivals and extinctions before they attained a character of permanence. Indeed, one author, M. Fournier, to whom we are indebted for much valuable information, asserts, in his recently published work, ‘Le Vieux-neuf,’ that no industrial or scientific discovery can escape that common law of alternate decadence and revival which clings to all human invention, and frequently interposes many centuries of neglect between its birth and its fully developed vitality. We need not wonder, then, to meet in remote antiquity with the use and practice of many things whose origin we commonly refer to modern times; for, notwithstanding the presumed superiority of the present over previous ages, we may still exclaim, as Solomon did three thousand years ago. ‘There is nothing new under the sun, for the thing that hath been is that which shall be, and that which is done that which shall be done.’

“Thus, for instance, the Chinese, who seem to have hovered on the

confines of innumerable discoveries, from the earliest period of their history, were familiar, even in ante-Christian ages, with modes of treatment and remedial agents which have only found their way into European practice within the last thirty years. Acupuncture, which was not known in Europe till towards the close of the last century, is described in the ancient medical works of China as an established mode of treatment among them; while in India and Japan it has long ranked as one of the ordinary surgical applications, and is effected by means of very slender and sharply pointed gold or silver needles, specially adapted for the purpose. The word *moxa*, which is now sufficiently familiar to British surgeons as a species of actual cautery, is the Chinese name of the plant whose dried leaves were originally employed by them in this process. It would appear, however, from Herodotus, that a similar mode of treatment was also practised among the nomadic tribes of ancient Libya, who had the habit of applying greasy wool to the heads or temples of their young children, and burning holes into the flesh, under the idea that the process was specially well adapted to prevent colds in the head, and to induce general vigour of body.

“In regard to anæsthetics, the ancients knew far more than was known to modern nations till within the last quarter of a century, for the Egyptians and Greeks were acquainted with several substances which had the property of inducing insensibility to pain, by plunging those who partook of them into a lethargic sleep.

“The *mandragora*, which is now banished from the *materia medica*, was used by the old Greek and Roman physicians; and Galen, Aretæus, Celsus, and others, ascribe to it strong soporific properties; while other writers, as Dioscorides and Pliny, state that those drinking a sufficient dose of it are rendered insensible to the pain of the surgeon's knife and the cautery. The Crusaders brought back from the east a knowledge of the hachisch; and in the middle ages an infusion of mandragora was given to patients who were to undergo painful operations, in the same manner as it had been administered by the ancients, the effect being to produce a deep sleep, which rendered the patient wholly insensible to pain. Boccaccio, who wrote in the middle of the fourteenth century, relates that a celebrated surgeon of the faculty of Salerno, named Mazet, employed a soporific, obtained by distillation, to deaden the pain of operations; while the confraternity of thieves and highwaymen of that age were said to be acquainted with a secret means of rendering themselves insensible to the torture of the rack; according to the account given of it in Le Brun's ‘Civil and Criminal Processes,’ published in 1647, soap was the agent employed, this substance having, as was asserted, the property of ‘stupifying the nerves.’

“If we pass to other presumed novelties in medicine, whose beneficial effects, unlike those of anæsthetics, are mere matters of individual opinion, we still find older claimants to the title of inventors than those to whom we commonly ascribe the merit. Thus, for instance, we are assured by M. B. de Xivrey, that Paracelsus forestalled Hahnemann's system, by teaching that ‘like should be treated by like, since like attracts like.’ Avicenna, too, was in advance of the German doctor in another fundamental principle of homœopathy, for he treated diseases by administering infinitesimal doses of the deadliest poisons. According to some authorities, the great Descartes killed himself from too rigid an adherence to the homœopathic doctrine that a disease should be treated by those agents which will produce analogous symptoms, for when he was attacked by a raging fever he insisted upon taking large and repeated doses of alcohol—a mode of treatment which brought on violent hiccoughing, and speedily terminated in death.

“The kindred system of hydropathy must necessarily, in its simpler

forms, have been coeval, if not antecedent, to all other modes of treating disease; but even in the more complex modifications of it, which Preisnitz has brought into such vogue in our own day, it may claim an ante-Christian antiquity. Musa Antonius, the freedman and physician of Augustus, had the distinguished merit of curing his imperial master of a dangerous disease by prescribing the use of the cold bath. He was munificently rewarded for the cure he had wrought, and honoured with a brazen statue, which, by order of the Roman senate, was to be placed near that of Æsculapius. The grateful emperor, moreover, exempted him from all taxes, and, as we may presume, vaunted his skill, and recommended him to his imperial household as the only physician to be trusted; at any rate, he was called upon to treat the emperor's nephew and son-in-law, Marcellus, who had been publicly proclaimed his successor. Here, unfortunately for the patient and the system, hydropathy killed, and did not cure; the poor youth, who was only eighteen, died, chilled to death by the cold-water douches administered to him by Musa; and with him died the system, which M. Fournier remarks it has taken twenty centuries to revive and restore to its former prestige. The cold-water cure, had, however, a short-lived notoriety in Nero's time, when the Marseille physician Charmis douched and drenched his patients most successfully with cold water, and in other respects prescribed medicines and modes of treatment not in use among his contemporaries."

Even clairvoyance, table-turning, spirit-rapping, and other absurdities of the present day, appear to have been known in olden time, and practised by the artful and designing; exciting, too, the same wonder and belief then as now.

We have been desirous to write on this subject—although it may be that our extracts have been somewhat too long—lest an expression made by us in our last leader should have been misunderstood. We there said, "As a compact body, we must resolve in our own strength to 'go on.'" From this some might have inferred that we seek no assistance or co-operation. Far from it, we are no friends whatever to isolation; indeed, we believe, fully believe, in the advantages derivable from union. Moreover, the sciences have a co-relation—the one aids the other. It would be, therefore, just as consistent to hope to maintain the integrity of a chain by the removal of one of its connecting links, as for any division of science to make advancement by insulation. All the inventions of physical science are united together, and by their nature tend to bring mankind into alliance with one another. We have been likewise told not to bury our talent in a napkin, nor burn our lamp in a sepulchre, like the old Rosicrusians.

Again, when we spoke of "our own strength," we meant it

only in reference to that with which we are endowed, for we are not ignorant from whom all power emanates. It is the strength imparted we desire to employ, knowing what the result must be if this be rightly done. The duty is ours—the consequences we must be content to leave.

“Let us, then, be up and doing,
With a heart for any fate:
Still achieving, still pursuing,
Learn to labour and to wait.”

Extracts from British and Foreign Journals.

THE CROONIAN LECTURE ON THE COAGULATION OF THE BLOOD, DELIVERED BEFORE THE ROYAL SOCIETY, JUNE 11, 1863.

By JOSEPH LISTER, Esq., F.R.S., F.R.C.S.

(Continued from vol. xxxvi, p. 758.)

It may, perhaps, be argued that the drop of blood employed being a small drop, and this small drop having been drawn up by suction into the tube, it might have parted with its ammonia before it got into the tube; but then (and now comes the bearing of the experiment on the effect of temperature) I found, if I placed a similar tube filled in the same way in a vessel of snow, so as not to freeze it, but to keep it ice-cold, the blood in it remained fluid as long as I chose to keep it there. Now, if all the ammonia had left the blood before it was introduced into the tube, cold ought, according to the ammonia theory, to have had no effect in retarding its coagulation; for, according to that theory, cold operates by retaining the ammonia. On the other hand, if we take the other alternative, and suppose that any ammonia which the blood might have contained was still in these tubes, the former experiment proves clearly that the retention of ammonia has no effect in producing fluidity—no effect in preventing coagulation; and if the retention of ammonia has no effect in preventing coagulation, then cold certainly cannot prevent coagulation by retaining the ammonia, because, even if retained, it would not influence the result. In whatever way we look at them, therefore, these

simple experiments prove conclusively that cold maintains the fluidity of the blood in some manner unconnected with any influence it may exert upon ammonia.

Then, again, I varied the experiment in this way. I placed such little tubes of blood in baths of liquor ammoniæ at different temperatures. By careful management, guarding against the volatilization of ammonia, and consequent reduction of temperature, I succeeded in employing satisfactorily a bath of liquor ammoniæ at 100° Fahr., the blood being in the bath within a few seconds of its leaving the vessels of my finger, and I found that the high temperature, though under such circumstances it could not possibly dissipate any ammonia from the blood, yet accelerated its coagulation in precisely the same way as when it was applied to blood in watch-glasses exposed to the air.

It is clear, then, that the promotion of the solidification of fibrin by heat is as independent of the evolution of ammonia as the coagulation of albumen under the same agency. Indeed, it seems probable that the two cases are analogous, except that a higher temperature is required in the one than in the other.

When fine tubes containing blood were placed in liquor ammoniæ, the alkali acted only upon those parts which were close to the ends of the tubes; a very small portion was rendered brown by it, and beyond that a little was kept permanently fluid, but the chief length of the blood in the tube was unaffected. Having thus ascertained that ammonia travels so slowly along tubes of this capillary fineness, I thought I might have an opportunity of giving the ammonia theory a fair test by tying such a tube as has been above described into the jugular vein of a rabbit, and filling it directly from the vessel, and then ascertaining whether there was any evidence of retardation of coagulation in the blood thus imprisoned. But I could discover no such evidence, although I sought for it in confirmation of a view I then held. To this, however, there is one special exception to be made—viz., in the case of asphyxia. I found that if two such tubes were filled from the same blood-vessel of a creature, and under normal circumstances, and the other after asphyxia had been induced, there was a most remarkable difference between the rates of coagulation of the blood in the two tubes, the asphyxial blood coagulating very much more slowly than the ordinary blood; but when the asphyxial blood was shed into a watch-glass, and air was blown through it, it coagulated rapidly, showing that in the state of asphyxia there must be some volatile element in the blood which has an effect in retarding coagulation.

Supposing at first that this volatile element must be ammonia, I hoped to be able by chemical means to find evidence of its accumulation in asphyxia, and thus add a fact of great interest to physiology. Imitating experiments previously made by Dr. Richardson, I passed air successively through blood and through hydrochloric acid, and then estimated the amount of ammonia acquired by the latter by means of bichloride of platinum. In order to prevent the possibility of the loss of any ammonia, I directed blood from the carotid artery of a calf fairly into a Woulfe's bottle by means of a vulcanized india-rubber tube tied into the vessel, and then drew a certain volume of air through it by means of an aspirating jar, the experiment being performed first before and then during asphyxia. The same procedure was adopted with a second calf, the animal being in each case under the influence of chloroform, which does not interfere with the development during asphyxia of the peculiarity in the blood above alluded to; but I could not find satisfactory evidence of accumulation of ammonia; and, without going further into the question at present, I may say that it seems much more probable that the effect is due to carbonic acid, which is known to have a retarding influence on coagulation, and which probably accumulates greatly in asphyxial blood.

But in justice to the author of the ammonia theory, and to myself too, who at one time expressed a qualified belief in it, it is but fair to say that this theory is extremely plausible. It has been well shown by Dr. Richardson that ammonia is a substance well fitted to keep the blood fluid if it be present in a sufficient quantity. An experiment of my own illustrates very well the same point. I drew out a tube about a quarter of an inch in calibre, so that while for two inches at one end it retained its original width, the rest (some ten inches) was pretty narrow, though far from having the capillary fineness of those before described. Into the thick part I introduced a drop of strong liquor ammonia, and then securely corked that end of the tube. The object of this was that there should be a strong ammoniacal atmosphere in the narrow part of the tube. I then opened a branch of a vein in the neck of a sheep, introduced the narrow end of the tube into the vessel, and pushing it in so that its orifice should be in the current of the main trunk of the vein, tied it in securely. I then removed the cork and made pressure on the vein at the cardiac side, causing the vessel to swell and blood to pass into the fine part of the tube; and before the blood had reached the part of the glass

moistened by the ammonia, I put in the cork again and withdrew the tube. In a short time, on introducing a hook of fine wire into the extremity of the tube, I found the blood already coagulated; but on filling off a small portion of the tube, I found the blood there fluid. The portion of blood thus exposed soon coagulated, when, a second small piece of the tube being removed by the file, fluid blood was again disclosed, which again soon coagulated; and this proceeding was repeated with the same results time after time, till, near the thick part of the tube, the ammonia in the blood was so strong as to prevent coagulation altogether.

This experiment illustrates how fitted the ammonia is to maintain the fluidity of blood, and also how apt it is, when present in the blood, to fly speedily off from it, leaving it unimpaired in its coagulating properties; and it must be confessed that the end of the tube sealed with a small clot resembled most deceptively the extremity of a divided artery similarly closed. But although the experiment seems in so far to favour the ammonia theory, it will tell differently when I mention the object with which it was performed. It appeared to me that, if the cause of the fluidity of the blood was free ammonia, then, if I provided an ammoniacal atmosphere in the tube, and introduced blood by pressure directly from the vein into this ammoniacal atmosphere, this blood, lying between the strong ammoniacal atmosphere on the one side and the ammonia naturally present in the blood, within the vein on the other side, ought to remain fluid; and if it did remain fluid, this would tend to confirm the ammonia theory, by making it appear that the volatile material was the same at both ends of the tube. But, to my disappointment, I invariably found that if I drew away the tube after a few minutes only had elapsed, there was already a clot in its extremity; in other words, the ammonia had diffused from the end of the tube into the blood within the vein as into a non-ammoniacal atmosphere. This experiment alone, if duly considered, would, I think, suffice to show that the blood does not contain enough ammonia to account for its fluidity.

One more experiment, however, may be adduced with the same object. I mounted a short but wide glass tube, open at both ends, upon the end of a piece of strong wire, and connected with the latter a coil of fine silver wire, so that it hung freely in the tube. I then opened the carotid artery of a horse, and through the wound instantly thrust in the apparatus so far that I was sure the tube lay in the common carotid, which in veterinary language means the enormous trunk common to both sides of the neck of the animal. The

tube, being open at both ends, and slightly funnel-shaped at that end which was directed towards the heart, had thus a full current of arterial blood streaming through it. Having ascertained how long the arterial blood took to show the first appearance of coagulation in a watch-glass, I very soon after removed the apparatus, and, on taking out the coil of silver wire, found that it was already crusted over with coagulum. Yet here assuredly there had been no opportunity for the escape of ammonia.

From this experiment it is obvious that there is a very great difference between ordinary solid matter and the living vessels in their relation to the blood. But the same conclusion may be drawn much more simply from experiments which I had the opportunity of performing after making an observation which it seems strange should have been left for me to make, and which, I may say, was made by myself purely accidentally; and this is, that the blood of mammalia, though it coagulates soon after death in the heart and the principal arterial and venous trunks, remains fluid for an indefinite period in the small vessels. If, therefore, a ligature be tied round the foot of a living sheep a little below the joint which is divided by the butcher, the foot being removed and taken home with the blood retained in the veins by the ligature, we have a ready opportunity of investigating the subject of coagulation, and of making observations as satisfactory as they are simple. Here are two feet provided in the way I have alluded to. A superficial vein in each foot has been exposed. The veins, I see, have contracted very much since I reflected the skin from them before our meeting; and I may remark that such contraction, dependent on muscular action, may occur days after amputation, indicating the persistence of vital properties in the veins. Now, as I cut across this vein blood flows out, fluid but coagulable. Into the vein of this other foot has been introduced a piece of fine silver wire, and when I slit up the vein you will see the effect it has produced. Exactly as far as the silver wire extends, so far is there a clot in this vessel. Now, this experiment, very simple as it is, is of itself sufficient to prove the vital theory in the sense that the living vessels differ entirely from ordinary solids in their relation to the blood. It is perfectly clear that by introducing a clean piece of silver wire (and platinum or glass or any other substance chemically inert would have had the same effect), I do not add any chemical material or facilitate the escape of any, and yet coagulation occurs round about the foreign solid.

Again, if a blood-vessel be injured at any part, coagulation

will occur at the seat of injury. As a good illustration of this, and also as bearing upon the ammonia theory, I may mention the following experiment. Having squeezed the blood out of a limited portion of one of the veins of a sheep's foot, and prevented its return by appropriate means, I treated the empty portion with caustic ammonia, the neighbouring parts of the vein being protected from the irritating vapour by lint steeped in olive oil. After the smell of ammonia had passed off, I let the blood flow back again, and left it undisturbed for a while, when I found on examination a cylindrical clot in the part that had been treated with ammonia, while in the adjacent parts of the same vessel the blood remained fluid. I repeated this experiment several times, and always with the same result—where the ammonia had acted there was a clot. The chemical agent used here was one which, so long as any of it remained, would keep the blood fluid; yet its ultimate effect was to induce coagulation, the vital properties of the vein having been destroyed by it.

If a needle or a piece of silver wire is introduced for a short time into one of the veins of the sheep's foot, it is found on withdrawal to be covered over with a very thin crust of fibrin; whereas the wall of the vessel itself is never found to have fibrin or coagulum adhering to it, unless it has been injured. Now, this seems to imply that the ordinary solid is the active agent with reference to coagulation; that it is not that the blood is maintained fluid by any action of the living vessels, but that it is induced to coagulate by an attractive agency on the part of the foreign solid. We see, at any rate, that the foreign solid has an attraction for fibrin which the wall of the vessel has not.

And yet I own I was at first inclined to think that the blood-vessels must in some way actively prevent coagulation. There were two considerations that led to this view: one was that the blood remained fluid in the small vessels after death, but coagulated in the large. Now, why should that be? It seemed only susceptible of explanation from there being some connection between the size of the vessel and the circumstance of coagulation. It looked as if in the small veins the action of the wall of the vessel was able to control the blood and keep it fluid, but that the large mass in the principal trunks could not be so kept under control. The other circumstance was the rapid coagulation of a large quantity of blood shed into a basin. Why should this occur unless there was some spontaneous tendency in the blood to coagulate? It seemed scarcely credible that it was the result of contact with the surface of the basin.

Both these notions, however, have since been swept away. In the first place, I have observed recently that it is by no means only in small vessels that the blood remains fluid after death. If blood be retained within the jugular vein of a horse or ox by the application of ligatures, either before or after the animal has been struck with the poleaxe, it will often continue fluid, but coagulable, in that vessel, which is upwards of an inch in diameter, for twenty-four or even forty-eight hours after it has been removed from the body. I say often, but not always. The jugular vein seems to be in that intermediate condition, between the heart and the small vessels, in which it is uncertain whether it will retain its vital properties for many hours, or will lose them in the course of one hour or so. Unfortunately for my present purpose, it happens that in this jugular vein, removed from an ox six hours ago, coagulation has already commenced, as I can ascertain by squeezing the vessel between my fingers. But now that I lay open the vessel, you observe that the chief mass of its contained blood is still fluid, and we shall at all events have an opportunity of seeing that what is now fluid will in a short time be coagulated. It is an interesting circumstance, with reference to the question which we are now considering, that the coagulation always begins in contact with the vein, indicating that it is not the wall of the vessel that keeps the blood fluid, but that, on the contrary, the wall of the vessel, when deprived of vital properties, makes the blood coagulate.

The observation of the persistent fluidity of the blood in these large vessels furnished the opportunity of making a very satisfactory experiment which I hoped to have exhibited before the society, but as there was some clot in the vein I did not think fit to run the risk of failure. The experiment is performed in the following way. A piece of steel wire is wound spirally round one of the veins in its turgid condition, and with a needle and thread the coats of the vessel are stitched here and there to the wire, care being taken to avoid puncturing the lining membrane, and thus the vessel is converted into a rigid cup. Two such cups being prepared, and the lining membrane of the vein being everted at the orifice of each, so as to avoid contact of the blood with any injured tissue, I found that, after pouring blood to and fro through the air in a small stream from one venous receptacle into the other half a dozen times, and closing the orifice of the receptacle to prevent drying, the blood was still more or less completely fluid after the lapse of eight or ten hours. On the other hand, if a fine sewing-needle is pushed through

the wall of an unopened vessel so that its ends may lie in the blood, it is found on examination, after a certain time has elapsed, that the needle is surrounded with an encrusting clot. It is scarcely necessary to point out how entirely the ammonia theory and the oxygen theory, as well as that of rest, fail to account for facts like these.

While the blood may remain fluid for forty-eight hours in the jugular vein of a horse or an ox, it coagulates soon after death in the heart of very small animals, such as mice; so that it is obvious that the continuance of the fluidity in small vessels is not due to their small size.

(*To be continued.*)

ACCLIMATIZATION.

WE continue our promised condensation of Mr. J. Ince's papers in the *Pharmaceutical Journal*, in which he thus describes the Garden of Acclimatization of Paris:

“A garden of acclimatization differs essentially from either the zoological or the botanical garden, nor is it the result of the two combined; for whereas both these latter are meant to be the living text-books of the subjects to which they are specially devoted, and are just so far perfect as they contain accumulated illustrations of their respective studies, a garden of acclimatization, having no technical boundary line of science, selects from all living objects whatever of either use or beauty may be deemed worthy of home introduction. Its range is from the yak to the silkworm, and from the lama to the sponge; to quote its own announcement, ‘its great object is to acclimatize, to multiply and to distribute to the public, animal or vegetable species which are or may be hereafter newly introduced into France, and may seem worthy of interest from their usefulness or ornament.’

“For France read Europe, and then we shall clearly understand the scheme. In the remarks about to follow, I have been painfully hampered by the difficulty of compressing discursive details into journal space; the whole zoological section has been necessarily omitted, while at the same time many of the topics here barely mentioned form the basis of successive lengthy papers in the official ‘Transactions’ of the society. Enough, however, is brought forward to guide the steps of future students, and possibly to stimulate their interest; and if all the hidden gold has not been dug

up ready for the market, at least a good plain sign-post has been erected to indicate the mine.

“The Society of the Garden of Acclimatization is thus constituted. Its duration is restricted to forty-two years. Capital a million francs (£40,000), in 4000 shares of 250 francs (£10) each. Each share gives a right to an equal and proportional allotment of effects, and constitutes a perpetual free ticket of admission. Part of the capital is to be so invested as that at the end of forty-two years the shareholders shall receive back the amount of their original contribution.

“Previous to the actual establishment of the garden, the committee visited and studied the gardens (Zoological and Botanical) of London, Brussels, Antwerp, Ghent, Amsterdam, and Marseilles. The nature of the receipts is twofold:—1st, The sale of animals, eggs, plants, and seeds; 2nd, the payment of visitors. The council consists of forty members, each of whom must have not less than five shares. After payment of necessary expenses, a reserve fund is created of 150,000 francs (£6000); the surplus beyond this is thus divided:—Five per cent. on shares at interest; five per cent. as a sinking fund; and of the remainder, half is to be given to the shareholders as dividend and half to the City of Paris as indemnity. Whilst we are on business topics, I may add that that the Imperial Society took a hundred shares, the banker is M. Rothschild, and the office of the garden is at present No. 19, Rue de Lille, Paris.

“The garden is situated in the Bois de Boulogne, just beyond the fashionable promenade; a broad pathway runs right round it. The first building that strikes the eye is the establishment for silkworms, where, from May to October, are made the various experiments on the cultivation and introduction of silk. By the side of the different silkworms feeding on the mulberry, from France, Italy, Spain, Asia Minor, India, China, and Japan, are seen the new species that have been introduced into Europe by means of the society, namely, the *Bombyx Mylitta* (silkworm feeding on the oak), *Bombyx Arrindia* (silkworm of the castor-oil plant), and the celebrated *Ailanthus* (Vers à soie de l’Ailante), the *Bombyx Cynthia vera*, about which so much has been written, and from which so much is expected.

“Next in order comes the great collection of birds—not the mere gathering of a zoological garden, but the specimens only of such as are recommended either by their beauty or their use. Behind this building are two rows of cages, one used as a sort of waiting-room when regular accommodation

is deficient, the other arranged as a hospital for sick birds. I must not stop to mention the curious fowl-yard, the pride of the genuine acclimatist, but I may just remind the reader that the most useful fowl we have in England is due to the prescient acclimatist who first introduced to Europe the domestic cock and hen.

“Further on, we find the space reserved for the annual exhibitions; and continuing our route, the paddocks of the larger animals, such as the yaks, oxen, sheep, and goats, every specimen of which is there to work out the problem indicated by the donor. Coming back, the beehives meet our view. In the summer, lessons are regularly given upon bee-training and cultivation, properly called apiculture.

“The aquarium is now no novelty; the one here presented is wonderful in its details and arrangement. We are apt (led by experience) to consider an aquarium as a repository of weird-looking shapes, which we were content to know mostly resided at the bottom of the sea, and we were sometimes tempted to consider their abode appropriate; certain it is that scientific children have done their utmost to bring this useful institution into pardonable disgust. Here, however, the salmon, trout, carp, and eel, may be studied in a tolerably correct imitation of their actual homes; whilst in another compartment sundry sea-water groups, and, in regular succession of time, the eight thousand species which constitute the class called fish, may be carefully examined. This alone may give some idea upon what a scale this practical scheme of education has been devised.

“Leaving the aquarium, we gain perhaps the most interesting spot in the whole garden, the ‘Garden of Experiment,’ where the different plants, grains, and seeds that have been received from time to time by the society are in process of cultivation, and on which should be inscribed the motto, ‘Failures constitute success.’ Such of our members who are so nervously timid about the establishment on their own premises of a museum of practical experiment and apparatus, would do well to witness the rapid progress lately made in applied zoology and botany in the field-laboratory of the Garden of Acclimatization, a progress that will not be slow in bearing a direct influence on pharmacy itself.

“Here are presented, under different modes of cultivation, and flourishing with every imaginable variation of success, more than four hundred species of plants, destined to serve for food, for medicinal purposes, or else capable of industrial application.”

To some of these Mr. Ince gives a special notice, after

which he seeks the retirement of the little reading-room, where, he says, we shall find books, treatises, and periodicals, bearing on acclimatization, and in there, sheltered from the glare of the sun without, we may glean something of the private history of a few great acclimatists, of whom a brief account is given by him; and he concludes his observations as follows:

“Such is a general outline of the Société du Jardin d’Acclimatization. Thoughtful men of all nations have been keen observers of nature, and in the charmed circle of other thoughtful men they have received the full homage of respect; yet too often the result of their labours has been a new ponderous folio, or a learned abstract, destined to be decently interred in the annals of some privileged society. Books do not teach everybody—there is a class of mind (in itself both highly cultivated and intelligent) to which printed sentences are literally a dead letter. Many a man of great energy, passionately fond of enterprise, daring and successful in commercial speculation, is in himself a walking encyclopædia of general knowledge, and is yet incapable of clothing a single thought in appropriate written language, and hates the printer’s devil as orthodox Christians do the father of all evil. Shall we call him uneducated, and ignore his real practical learning? Let us be more sensible, and at the same time more just—*his* literature is action. Now, a garden, such as the one described, appeals directly to sympathies like these. Here is a book in nature-printing, the type of which is never worn, and whose truths present the strange anomaly that they are both ever-changing and everlasting—a book wherein the most contemplative philosopher and the busiest mortal may delight to read; and it is certainly worth while offering a fair field of study to meet the craving eagerness of many an adventurous spirit, who, though he may scarcely distinguish between an Elzevir and the printing of this journal, feels himself aggrieved because his merit is sometimes unfavorably contrasted with that of the man who can merely round a period or construct a phrase.

“Should it, moreover, be the fortune (good or ill) of any reader of these lines to be engaged on foreign service, he will assuredly thank the writer for having introduced the subject of acclimatization to his notice. I had a near and dear relative, of most companionable habits, stationed in the Havannah. Often have I listened to his sad recital of the blank routine monotony of that least enviable life. No wonder that in all that colony of disheartened Englishmen there was but one thought—to make money and retire.

How would each homesick resident have welcomed the genial inspiration of the Saint-Hilaires, and have expanded under the grateful influence of a study which brought them once more within the pale of European sympathies!

“‘Thoughts perish,’ says the eternal record; well is it, therefore, for the natural philosopher of the present day that his deepest theories may be translated into living and palpable realities; and that while men stumble over books and sentences, he may not only realise his speculations, but present them in a language intelligible to humanity in common.

“In 1860 M. E. Roehn thought that the alpaca* was destined to be of essential service; he sent over and acclimatized the animal, and it is now writing its own history (practical and scientific) in the garden at Paris, in the industrial produce of Australia, in the fabrics of the North of England, in the covering of my umbrella, and in my last tailor’s bill. May I commend this great subject specially to pharmacutists? May I offer them, even though but as a relaxation from their severer studies, a theme so rich in associations and so fertile in results?

“Haply a stray, sight-worn English tourist, tired of the theatre and sickened with the glare and glitter of Mabilie, may be glad to seek refuge on some quiet autumn morning in the more placid, though not less pleasurable, scenes of the Jardin d’Acclimatation.”

NATURE OF “MATERIES MORBI,” AND THE ACTION OF PERMANGANATE OF POTASH THEREON.

By H. B. CONDY.

THIS term is applied to the emanations from the bodies and intestinal discharges of persons suffering from contagious diseases, whose only ascertained property is that of generating in other individuals, predisposed for their development, definite affections, in the course of which matter possessing the same power is reproduced. There is no evidence to show that these substances are of a gaseous or even truly vaporous nature. The fact that those contagious matters which are accessible, such as the virus of cow-pox and

* “This paper is of course written from a French point of view. I am not ignorant of the English claim to the introduction of the alpaca, nor of the admirable acclimatization experiments of Messrs. Ledger, Wilson, and others. Let us hope that some competent authority will give an account of recent Australian success.”

of syphilis, may be dried in the air without exhibiting any signs of volatility, tends to the contrary conclusion. If the matters of contagious diseases were of a volatile nature, they would evidently, by the law of gaseous diffusion, be liable to pervade the entire mass of the atmosphere in a form of extreme attenuation, not at all admissible from what we know of their effects. Volatility, moreover, which implies simplicity of constitution and a limited number of atoms in the integrant particles of matter, would be incompatible with the organic character of such substances. We know that mere gases of the kind principally exhaled from persons suffering from fevers and other similar contagious affections, as ammonia, sulphide of ammonium, and such like, are of themselves insufficient to cause special disease when breathed admixed with air. But as the vapours of volatile liquids carry with them sensible quantities of all the solids which are held in solution by them, the gases and exhalations given off from fever patients and their excreta are well suited for becoming the vehicles of non-volatile contagious matters, in the shape of consistent particles of complex matter analogous to the polybasic combinations of the organic kingdoms.* Being derived from the blood, these bodies may be presumed to exist in a peculiar state of active transformation, capable of communicating itself to the circulating fluid of other individuals of the same species, when so circumstanced as to be unable to conduct their metamorphosis into simpler and more permanent forms. As they are clearly susceptible of increasing in activity and of propagating their condition, according to the circumstances in which they may be placed, they must also be capable of diminishing in morbid force, and of suffering resolution into a state of inertia by conversion into the last products of transformation. The progress of such matters will be regulated entirely by the opportunities afforded them of meeting with active oxygen, which, whether in the process of combustion continually kept up within the body by the respired air, or in that which is as unceasingly in operation without, is the great means employed by nature for the extinction of abnormal influences and the maintenance of sound sanitary conditions in the organic creation.

If they do not consist merely of the usual organic substances contained in bodily exhalations, brought into a peculiar catalytic state, those morbid matters at all events cannot be supposed to differ in constitution, in any material

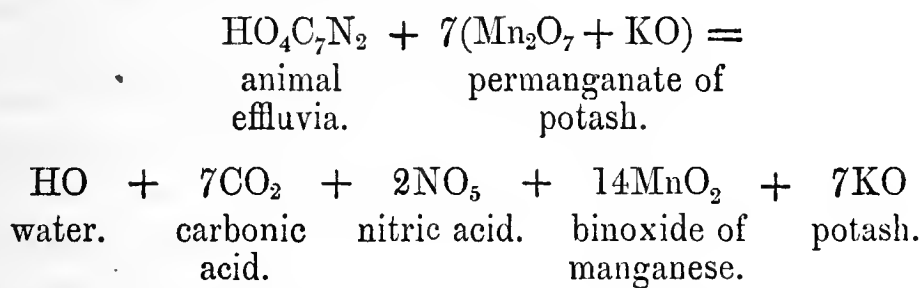
respect, from ordinary animal bodies. They are probably complex organic products, possessing a quaternary arrangement of elements, like the generality of animal matters. Their morbid power resides in their peculiar dynamic condition, which is capable of maintaining itself so long as no elementary change occurs to alter their state. In this respect these substances, in their intimate nature, may justly be compared with those poisonous products which, under certain circumstances, are developed in some kinds of sausages, and occasionally in the human body after death. As it has been found impossible to extract any special virus from such putrid substances, so it is easy to understand why we are unable to recognise any tangibly poisonous material in the emanations of persons struck down by contagious diseases. In both cases every known method of investigation has failed to reveal any peculiar morbid compound, and the presence of the morbid force is only rendered cognizable to the senses by the train of symptoms excited in the system of those brought within its influence, which will be more or less felt according to the greater or less degree of intensity of the state of metamorphosis in which the poison happens to be at the moment of its reception, the nature of the medium through which it finds admission to the living body, and the presence in the system of materials capable of entering into the same state.* The facility with which those matters communicate their peculiar condition to the blood of individuals predisposed to receive such impressions may be easily comprehended by calling to mind the extremely complex nature of the circulating fluid, its constant state of transformation, the manner in which it is dispersed throughout the entire body and permeates every tissue from the lungs and bowels within to the skin without, and, above all, the circumstance that such morbid matters are themselves blood products, and consequently composed of constituents most favorably circumstanced for the diffusion of their peculiar state of mobility in the circulating mass.

It is a law of catalytic metamorphosis, that a body in the act of decomposing, on being added to a fluid in which its own constituents are present, is itself reproduced, exactly as new yeast is formed by the addition of that substance to saccharine liquids containing gluten, and that the only limits to this process of reproduction are the amount of matter present which is capable of undergoing such alteration, or the supervention of some counteracting influence.

* Dr. Budd, of Clifton, on "The Propagation of Typhoid Fever;" 'Lancet,' Dec. 12, 1856.

This change takes place with more certainty when the fluid acted upon contains among its constituents the substance from whose transformation the body suffering decomposition was formed.* We have a familiar instance of the action in question in the "turning" of milk, when placed in dishes not scrupulously clean, and to which some particles of older milk in a sour state have been allowed to adhere, or when intentionally soured, as in the preparing of the *yaourt* of the Turks and other pastoral people, by the addition of a reserved leaven of coagulum. Although milk is a homogeneous fluid in a state of quiescence, as compared with the warm blood of the body, which, to use the beautifully comprehensive expression of Liebig, is "the sum of all the organs and tissues in the act of formation," the extreme sensitiveness it displays to fermentive influences affords an instructive subject for reflection.

Of the oxidizable impurities which are found in the atmosphere, few are so disposed to combine with active oxygen as the decomposing effluvia which proceed from the morbid and putrefying bodies, and the effete excretions of men and other animals. When in a condition for combination, their elements form with that substance compounds of a most permanent nature. Assuming those matters to resemble in constitution nitrogenized animal bodies, their behaviour in the presence of permanganate of potash may be represented by the following equation :



Every particle of such substances which thus undergoes oxidation represents so much unwholesome matter reduced to an inert and innoxious condition, and the quantity of permanganate decomposed will correspond exactly to the amount of impurities destroyed. Were it possible to bring the organic matter, as it exists, for instance, in offensive exhalations, into rapid and intimate contact with the permanganate, the process of purification would be instantaneous and complete. This, however, is perhaps scarcely attainable. The destruction and withdrawal of such impurities as obtain contact must, nevertheless, have the effect of lessen-

* Liebig's 'Chemistry of Agriculture,' by Playfair, 4th ed., p. 382.

ing the total amount present, and of improving the average purity of the air operated on. In the atmosphere of confined spaces, or of places where the source of impurity is limited, as in a room containing but one or few cases of some contagious disease, this result is speedily obtained. The mere exposure of an extended surface of permanganate solution will, in general, suffice to destroy as great an amount of impurity as that which is continually being imparted to the atmosphere.

THE ACTION OF OZONE ON SOME ORGANIC MATTERS.

By M. BESANEZ.

M. BESANEZ has found that on the following substances ozone has no action:—urea, hippuric acid, allantoin, alloxan, creatine, leucine, fibrine, gelatine, starch, sugar, inosite, amygdaline, and salicine.

Cyanide of potassium rapidly absorbs ozone, and is changed into the cyanate. Uric acid diluted with water, and agitated with ozonized air, is dissolved and changed into allantoin and urea.

Creatinine is moderately acted on, the products being creatine and an acid, the nature of which the author will describe hereafter.

The action of ozone on albumen is very curious. M. Besanez hoped to find urea among the protein bodies; but although he directed his attention particularly to this point, he was disappointed. Not an atom of the compound was produced, and the author does not believe in the transformation of albumen into urea by oxidation with hypermanganate of potash.

In contact with ozonized air, albumen becomes slightly coloured, and then forms a coagulum somewhat analogous to fibrine, but insoluble in a solution of nitrate of potash. After some time this coagulum liquefies, and when the liquid ceases to absorb ozone it is no longer coagulated by heat nor precipitated by mineral salts, always excepting the tribasic acetate of lead. By evaporation in a water bath it leaves a brownish residue, which is partially soluble in alcohol. The principal result of this experiment, according to M. Besanez, consists in the formation of a compound similar to that produced when albumen is acted on by gastric juice.

The action of ozonized air on casein resembles the action

on albumen. When milk is operated on, the casein is first modified, the fatty matters resist longer, and the lactine is not at all affected.

Amylic alcohol acted on by ozone gives first valerol and then valerianic acid.

Oil of cinnamon condenses a large proportion of ozone without being oxidized, but yields it up to substances more easily affected. In this way ozonized oil of cinnamon rapidly decolorises solutions of indigo.

Purified bile is not acted on by ozone; but fresh bile is quickly decolorised, the action being limited to the destruction of the colouring matter, and perhaps also the mucus.

Among the organic substances most eager for ozone is tannic acid. The author has not studied this reaction deeply; but he is certain that oxalic acid is formed, and a body which quickly reduces the cupro-ammoniacal liquid.

M. Besanez, as regards ozone, confirms a fact remarked by M. Chevreul, viz., that the presence of an alkali singularly hastens the oxidation of organic matters. The author also quotes an observation by M. His, who remarked that blood is so completely burnt by ozone that the residue is composed of scarcely anything but mineral substances. M. Erdmann has observed that ozone transforms indigo into isatine.—*Répertoire de Pharmacie*.

ON THE TRANSFORMATION OF ARSENIC INTO A SOLID HYDRIDE UNDER THE INFLUENCE OF NITRIC ACID.

By Dr. BLONDLOT.

IT is well known that when more or less diluted acids disengage the hydrogen of water in the presence of zinc or iron, the nascent gas, if in contact with a soluble compound of arsenic, forms with the latter a gaseous hydride having the formula AsH_3 . But to this general fact there is one exception, which I believe to be unique, and to which I desire to call attention, inasmuch as it may have great importance in toxicological researches. Nitric acid and its derivatives, under the conditions mentioned, only produce a solid hydride, having the formula As_2H , which is precipitated upon the zinc in the form of brown flocculi.

This characteristic reaction is evidently due to the formation of a certain quantity of ammonia, and is produced even

when the nitric acid is mixed in very minute proportions with other acids, so that we may avail ourselves of the reaction to detect the least trace of a nitrous compound in sulphuric, hydrochloric, or other acids. When once formed, however, the solid hydride of arsenic is insoluble in the cold, in sulphuric and hydrochloric acid, whether concentrated or diluted, and therefore gives no trace of the gaseous hydride in Marsh's apparatus. Of this fact I have repeatedly assured myself by placing in the apparatus strips of zinc previously coated with the hydride in question.

For the production of this solid hydride to take place, however, the author states that the absence of all other metals from the solution is necessary. And not only this; the presence in the liquid of certain organic matters, such as sugar, gum, gelatine, alcohol, ether, even in small proportion, prevents the formation of the hydride. Nevertheless, he adds, the property possessed by arsenic of depositing itself on zinc as a hydride in the presence of nitrous compounds affords us the means, if not of isolating, at least of characterising it. If arseniuretted hydrogen is passed into nitrate of silver, as in Lassaigne's test, and the excess of silver is precipitated by chloride of sodium, the clear liquor obtained by filtration, acidulated with a few drops of nitric acid, will quickly deposit the hydride on a strip of pure zinc. The author affirms that this reaction is second to none in sensibility.

Hitherto sulphuric and hydrochloric acids have been considered sufficiently pure for toxicological researches when proved to be free from arsenic; but the author's results show that it is equally important to have these acids free from nitrous compounds. Another source of error exists when animal matters suspected to contain arsenic are carbonized by a mixture of sulphuric and nitric acids. If the whole of the nitric acid is not got rid of, there is the danger that when the liquid obtained is tested by Marsh's method the whole of the arsenic may pass into the solid hydride and remain undetected.—*Condensed from Annales de Chimie et de Physique.*

ON TRICHINA SPIRALIS.

By W. MÜLLER, M.D., Homburg.

FOR many years past the trichina spiralis (class Nematodes) have been found in the muscles of hogs, wound up in a spiral form, and enclosed in chalky capsules; and Dr. Owen discovered and described them in the muscles of men. Professor Zenker, of Dresden, was the first who proved, by a full and exact statement of a case, and a careful and minute *post-mortem* examination, that the development and wandering of the trichinæ in the human body produce violent symptoms similar to those of typhus fever, and cause, most probably, in many cases, the death of the individual.

Experiments made by Professor Virchow,* of Berlin, and Professor Leuckart, of Giessen, by feeding animals with pork in which were trichinæ, proved the same as Professor Zenker's observations in the above-mentioned case, namely, that the trichinæ, when taken into the stomach, commence almost immediately their development, male and female, and innumerable embryos. The young worms, perforating the intestines, enter the muscles, and, wandering in them, produce the violent symptoms of the disease above mentioned, until they become incapsulated in the muscles, in which state they are innocuous.

In Hettstaedt, a small town in Prussia, containing about 5000 or 6000 inhabitants, a veritable epidemical propagation of trichinæ commenced in the middle of October last, in consequence of the infected persons having eaten a kind of sausage (not thoroughly cooked) made of pork in which were trichinæ.

In some cases small portions of muscles were taken by Middeldorpf's harpoon from the persons infected, and whilst suffering with the disease; and by submitting those portions to microscopical examination trichinæ, were discovered in them.

In the evening of the 9th of November last I was summoned by a telegram from the physician of Hettstaedt, informing me that a relation of mine was suffering from the trichina disease; that he had also a pneumonic affection, and was very ill. On my arrival on the following day I found the patient—who previous to the attack was a strong and very healthy man, twenty-three years of age—perfectly conscious,

* Vide Virchow's 'Archiv,' vol. xviii, p. 561.

and with a slight œdematous swelling of the face. On examination of the chest, a dull sound over about an inch and a half of the lowest part of the lower lobe of the left lung was produced by percussion; crepitating rattles were audible, but there was no bronchial breathing, thus showing the beginning of resolution of the pneumonia; at the lowest part emitting the dull sound there was a slight pleuritic rubbing. The pulse was 140; respirations 48; and the temperature of the body 39° Centigrade.

The symptoms of the disease commenced on the 16th of October with loss of appetite and diarrhœa, followed by a sensation of painful weakness in the limbs and difficulty in moving the tongue; the pulse being above 100. The patient was not confined to his bed during the daytime until the 6th of November, when the pneumonic symptoms commenced.

The day after my arrival (November 11th) the pneumonic symptoms were unaltered, with the exception of the pleuritic rubbing, which had moved a little higher up. The whole of the pleuro-pneumonic affection was so very trifling that it certainly did not account for a pulse of from 140 to 150, and for the violent oppression, or rather, as the patient explained it himself, "the weakness in drawing his breath."

The following day the frequency of respiration varied between 30 and 60; the pulse was more than 200, and very weak; the temperature had fallen to 38° 6' Centigrade; and the body was covered with a profuse clammy perspiration. The other physical symptoms were the same as before, and the pleuritis had not extended higher. The complaint of weakness in breathing, or, as the patient called it, "the impossibility of drawing a sufficient quantity of air into the lungs," was increased; but he remained conscious and resigned, so much so that he several times asked me at what hour I expected he would die.

At seven o'clock on the evening of the 12th of November he died.

The *post-mortem* examination, performed on the 13th, proved an infiltration of a part of the lower lobe of the left lung, extending upwards about an inch and a half from the lower margin of the lung, and about three or four ounces of liquid exudation in the pleural cavity of the same side. When examining the chest and intercostal muscles, I found, in every small piece of the muscle placed under the microscope, trichinæ partly wound up, but not capsulated, partly forming a single sling, and partly extended. In the examined parts of the heart and diaphragm no trichinæ were discovered.

On the day previous to the above-mentioned *post-mortem* examination I examined with the microscope several small pieces of muscles which had been taken from the bodies of persons who had died of the disease, and were given to me by the physician of Hettstaedt, Dr. Rupprecht, and I found a considerable number of trichinæ in them.

Previous to my departure from Hettstaedt eighteen to twenty persons had died of the trichina disease, and more than eighty persons were at that period afflicted with the same malady, produced by the same cause.

According to the information I obtained on the spot, the disease begins a few days after eating the meat in which there were trichinæ, with loss of appetite, and almost without exception with diarrhœa and fever; œdema of the eyelids; also pain, or at least painful sensation of weakness, in the limbs; œdema of the joints; difficulty in moving the tongue; profuse clammy perspiration; and those patients who do not become convalescent die either unconscious, with symptoms of typhus fever, or, in a few cases, remain conscious to the end, complaining of inability to breathe freely.

The only important symptom of typhus absent in the disease is the enlargement of the spleen, and it is very probable that some of the so-called epidemics of typhus fever in former days were caused by the propagation of trichinæ in the human body.

Since the disease has been known (about three years ago) a great many cases have been observed in Germany.

The vitality of the trichinæ is not destroyed unless the meat or other substances in which they are located be subjected to the temperature of boiling water for a sufficient time to ensure that every particle has been acted upon by that degree of heat. Salting and smoking trichinous meat, as is usually done, does not appear to be sufficient to destroy the worms in all parts of the meat.

Picric acid (*Acidum Picro Nitricum*) was tried with the hope that it might be administered with success to the patient, but it failed.

In trichinous pork of a pig killed with picrin acid the worms were found alive.—*Lancet*.

THE DANGERS OF SLAUGHTERING.

OUR own pages, along with those of numerous contemporaries, have for some time told the public what no doubt they are by this time, in more senses than one, "sick of hearing"—viz., that disease has been rife amongst cattle, and that the flesh of diseased cattle has been rife amongst the butchers. The exact nature of the disease prevalent amongst stock has been differently regarded; but a sort of typhoid pneumonia has been held to be the chief cattle plague in this country, while "splenic apoplexy" has prevailed upon the Continent. According to some recent interesting and laborious inquiries by Dr. Edwards Crisp, it would appear that splenic apoplexy occurs more frequently in this country than has hitherto been supposed, particularly amongst the stock of marshy and malarious districts. Amongst the more important of the results arrived at by the above-mentioned indefatigable naturalist, is the proof he adduces of the deleterious influences produced upon man and the lower animals by the spleen and other viscera of the beasts affected. Dr. Budd, of Clifton, as our readers well know, has for some time maintained the inoculability of a virus from diseased cattle to human beings. Dr. Crisp has worked out the problem, and shows that it cannot be too generally known among agriculturists that persons who flay animals dying of splenic apoplexy should be careful to avoid scratches, cuts, and punctures, and on all occasions to wash their hands well immediately after they have finished. If a cut be received, Dr. Crisp recommends the *immediate* application of salt or spirits of turpentine to the part injured. Mr. Hamilton, one of the Commissioners for New South Wales at the late Exhibition, informed Dr. Crisp that when the disease in question was prevalent in that country the men were so disabled from punctures and the imbibition of the poison when flaying the sheep, that they refused to slaughter any more unless they received an amount of pay adequate to the risk. One man nearly lost his arm. M. Garreau, of Chateaufneuf, punctured his hand when dissecting a sheep that had splenic apoplexy, and a malignant pustule appeared after four days, and lasted a long time. Dr. Cherreau mentions the case of a shepherd who, in bleeding a sheep that was affected with this disease, received some drops of blood in the eye, which he neglected to wash, and death took place in three days. Four men who flayed some stall-fed oxen so

diseased suffered more or less from sores on the hands, which were a long time before they healed, and two of them had much constitutional disturbance.

According to Dr. Crisp, the effects of eating the spleen or other viscera are still more extraordinary. Mr. Edward Cooper, of Great Oakley, Essex, lost seven fat hogs from their eating the paunch of an ox that had splenic apoplexy; and a man in the same village lost last August thirteen ferrets from a like cause. Many analogous instances are cited to put the agriculturist on his guard, and to convince him of the necessity of burying at once the bodies of all creatures dying from this strange disease. The evidence adduced respecting the death of many animals from eating the uncooked flesh, blood, and viscera of oxen dying from it would be, perhaps, sufficient to convince some persons of its injurious effects upon man. M. Garreau maintains that a volatile poison is connected with the malady, and that, judging from inoculation, the virus loses its virulence after a certain time. Dr. Crisp has not been able himself to procure reliable evidence to show that the *cooked* flesh is injurious; but it must be remembered that most of the animals that die of splenic apoplexy are sent to London or some large town, and the meat distributed in various directions, so that it is very difficult to ascertain its effects. This investigator hopes to settle the question, however, by a series of experiments that he purposes undertaking as soon as he can obtain the bodies of animals which have died from the disorder.—*Lancet*.

THE ORIGIN OF INFUSORIA.

IN a recent address on physiology, delivered before the British Medical Association, Dr. Sharpey said, "In the physiology of reproduction, the old question of spontaneous generation has been lately revived and submitted to further discussion; but, as I think, has been satisfactorily answered in the negative, and especially through the admirable researches of M. Pasteur. That most able and accomplished inquirer has not only proved the non-appearance of infusorial organisms when adequate means are taken to exclude their germs, but he has succeeded in actually demonstrating the presence of such germinal spores in the atmosphere. Air was made to pass through a tube filled with gun-cotton taken from a sample proved to be free from foreign admixture. The cotton was then dissolved in ether or chloroform, and the

sporules of algæ and other small organisms which had been entangled in their passage were found in the liquid." In a former article, on the "Conditions of Infusorial Life," we gave a faithful account of the real state of this singular controversy, which is decidedly misrepresented by Dr. Sharpey's remarks. In the first place, it is not fair to M. Pouchet, the leader of the heterogenists, whose opinions we by no means espouse, to treat the contest which is eagerly pursued in France, and which has extended to America, as merely a revival of the old dispute about "spontaneous generation." The details of M. Pouchet's views will be found in his own work, 'Heterogenie,' or in the article to which we have referred, and we do not intend to re-examine them now; suffice it to say that he reduces all generation to one principle, and conceives reproduction by eggs (*orthogenesis*) and reproduction without eggs (*heterogenesis*) to be the result of the same laws operating under different conditions. "If," says M. Pouchet, "a Supreme Being, whose unity is revealed in every part of the globe, has presided eternally and universally over all the phenomena that have been exhibited on its surface, and if it has pleased him to people the earth with tribes of animals and of plants that have succeeded one another, why not repeat to-day what has occurred in former epochs, for, as P. Gorini observes, spontaneous generation is not a greater marvel than normal reproduction." M. Pouchet affirms in another passage that the same "Creative Will" which originally caused physical matter to assume living form without the previous intervention of sexual elements operates still. Thus both physiologically and theologically the modern controversy differs from the old, and it is only represented otherwise by those who would rather smother it under evil associations than patiently wait for a result that can only be reached by much labour and thought.

As we stated in a former paper, the simplicity of the apparatus employed by M. Pasteur gives great value to his experiments, for it must be extremely difficult to shut out all sources of error when a series of vessels with numerous joints are employed, but some of his opponents deserve equal credit for the method they have adopted. Practically, the question to be first decided is, whether any vital organisms can appear in infusions in which existing germs have been destroyed, and to which the access of fresh germs is rigorously prevented. It has been assumed that boiling an infusion destroys any life or germ of life that it contains, and that when air is made to traverse a red-hot tube a similar result takes place. Now, it cannot be said that, in adopting these

methods, M. Pasteur has "*proved*" the necessary non-appearance of infusorial organisms, as Dr. Sharpey asserts, because opposite results have been obtained by other able experimentors who have made analogous trials. In France Messrs. Pouchet, Joly, and Musset, and in America Professor Wyman, adduce experiments that flatly contradict those of M. Pasteur. We gave some account of Mr. Wyman's experiments in No. 9, p. 229, and they will be found in detail in *Silliman's Journal*, or in the *Chemical News* of August 30th. Several of these trials were made as described in the following extract:—"Two flasks each of 550 c.c. capacity, and each containing about 20 c.c. of beef juice and urine, were hermetically sealed at the temperature of the room, wrapped in cloth, and exposed for two hours in boiling water. The film formed on the fourth day. One of them was opened on the fifth and the other on the eleventh, and both found to contain Bacteriums." In experiment 35, pieces of mutton in an hermetically sealed flask were boiled for ten minutes in a Papin's digester, under the pressure of five atmospheres. "No film was formed. The flask was opened on the forty-first day. Monads and vibrios were found, some of the latter moving across the field. No putrefaction; the solution had an alkaline taste." In four instances out of thirty-three no organisms appeared, but the balance of the results was discordant with those of M. Pasteur, Professor Asa Gray being present at the opening of some of the flasks. In experiment 12, the juice of an ounce of beef, to which was added 10 c.c. of urine and 40 c.c. of water, was boiled twenty minutes in a bolt-head and hermetically sealed. A film formed on the fourth, and the flask was opened on the eleventh day, when there was a distinct rush of air outwards. Large numbers of Bacteriums were found, also small spherical bodies with ciliary motions and oval bodies like kolpods, containing what appeared to be Bacteriums. One of these kolpod-like bodies moved with cilia.

After these experiments, it is obvious that there is something else to be done than simply to acquiesce in the results of M. Pasteur, notwithstanding his scientific eminence and skill. Nor is it true, as Dr. Sharpey appears to conceive, that the presence of germinal spores in the atmosphere sufficient to account for the appearance of infusoria in solutions has been ascertained. M. Pasteur certainly discovered some spore-like bodies, but we believe he never identified any of them as eggs of infusorial animals. Professor Wyman states, as the result of many examinations of dust deposited in attics, and of the particles floating in air and collected on glass

plates covered with glycerine, that, like Pouchet, he found grains of starch and spores of cryptogams, and much less frequently what appeared to be eggs of invertebrate animals, but that "both eggs and spores may be to be said of rare occurrence." It will, however, be asked whether the eggs of infusoria could be discovered by the methods employed. M. Balbiani gives a table (which will be found at the close of this article) of the number and dimensions of the ova produced by various animalcules, and, as will be seen on reference to our account of his remarks in No. 6, p. 468, he describes them as so transparent that their form can only be made out by employing dilute acetic acid to augment their cohesion and refractive power. It would probably be impossible, especially without the employment of reagents, to see those bodies after they had been caught in a film of glycerine, or, still worse, in one of olive oil, which MM. Joly and Musset employed, and we should certainly not be warranted in assuming the non-existence of infusorial ova in consequence of the failure of a comparatively clumsy means of investigation.

With reference to the appearance of Bacteriums or similar objects in infusions apparently free from living germs of any kind, we may observe that scarcely anything is known concerning these minute organisms. Ehrenberg placed them among the animals, and inferred their possession of a plurality of stomachs! Other investigators regard them as vegetables, and Mr. H. J. Clark, of Cambridge, U.S., claims some of them as nothing more than portions of decomposed muscular fibre or tissue. Probably these objects, which assume the form of exceedingly minute chains, more or less flexible and movable, differ widely in their real nature, and some of them may not be alive at all.

M. Pouchet now deposits with the French Academy a fresh batch of printed and MS. matter on heterogenesis, to compete for the Alhumbert prize, and MM. Joly and Musset send in for the same purpose their 'Nouvelles Etudes sur l'Heterogenie,' a brief account of which is given in 'Compte Rendus,' September 22, from which we select the most interesting facts. They took a series of flasks holding one litre, and containing forty grammes of the same decoction, together with air that had been passed through red-hot tubes (*air calciné*). Then, following the method of M. Pasteur, they caused a little tube containing gun-cotton, charged with dust from the air, and "subjected to the action of burnt air," to fall into flask A. The neck of the flask, also filled with the burnt air, was sealed in a lamp. In flask B, prepared in the

same way, they placed a piece of gun-cotton, selected from the middle of a considerable mass of that material which had been kept in a closed bottle, and was as free as possible from atmospheric dust-particles. In C they placed the same decoction, with calcined air, and no cotton, while D was subjected, like the preceding, to a second ebullition, but was allowed to remain open. A fifth, E, was closed during the second boiling. After five days A was opened, and found to contain long Bacteria, and a clot of a branching and entangled mycelium. This was the result obtained by M. Pasteur. B was opened two days later, and contained what the writers call dead Bacteria reduced to granulations, and on a portion of the gun-cotton which extended beyond the tube there was a fine mycelium, identical with that in A. C was opened on the same day with A, and exhibited Bacteria, but rather fewer than A, and no mycelium. "This result," say MM. Joly and Musset, "confirms once more those which we obtained last year, in repeating the experiment of Schwann, and it proves, contradicting the assertions of M. Pasteur, that air heated and then cooled does not leave intact the juice of meat which has been exposed to ebullition. On the sixth day D, which had remained open, exhibited no infusoria, but two days later swarmed with long and active Bacteria. Eight days later E exhibited no infusorial life. Another set of experiments showed that distilled water containing a tuft of gun-cotton charged with atmospheric dust produced few organisms, and sometimes none; that similar water, to which a considerable quantity of dust was added, yielded Bacteria and monads; that if aster leaves, carefully washed in pure water, were placed in distilled water, ciliated infusoria appeared. Distilled water used to wash a large quantity of mercury from a pneumatic trough "remained unfertile, although one of the enemies of heterogeny affirmed that a single globule of mercury was enough to people any infusion."

Following M. Pouchet, MM. Joly and Musset placed a considerable quantity of a filtered infusion of chopped hay in one vessel, and then floated in it a smaller vessel containing some of the same infusion. In the large vessel they obtained ciliated infusoria, and only Bacteria and monads in the little one. It is not stated how long they kept these vessels to see what they would yield.

It is possible that after a greater lapse of time ciliated infusoria might have appeared in the smaller vessel, as they can certainly be obtained with very small quantities of fermenting hay;* but if not, it does not follow, as these gentle-

* Mr. Slack tells us that he has obtained kolpods and other ciliated in-

men consider, that the existence of germs in the atmosphere is disproved, as the small quantity of filtered infusion may not have contained enough of some particular substance to facilitate the development of any germs which might have fallen into it.

It is evident that controversies of this kind tend to clear up obscure points in the history of infusoria, and it is a pity that in England, as on the Continent, they cannot be regarded from a purely scientific point of view. It is not honest to take no account of facts that contradict our own notions, to cite Pasteur, and omit Pouchet or Wyman. As the matter really stands, there are discrepancies which have to be explained, and the vast assemblage of objects grouped together as "infusoria" differ so widely in structure as to countenance the idea that their mode of origin may not be the same. We may mention that the French Academy has appointed a commission, composed of MM. Milne-Edwards, Flourens, Brongniart, and Coste, to report upon the papers on spontaneous generation sent in to compete for the Alhumbert prize.

THE EGGS OF INFUSORIA (*Balbiani*).

Name of Species.	Number of Eggs.	Diameter of Eggs in fractions of a millimètre.*
Trachelius ovum	2	0.120
Amphileptus gigas (?)	20—25	0.018
" anas	2	0.008
Loxophyllum meleagris	12—15	0.015
Loxodes rostrum	15—20	0.015
Chilodon cucullus	1	0.005—0.020
Bursaria truncatella	4	0.057
Ophryoglena flava	4	0.018
Spirostomum teres	2—3	0.018
" ambiguum	20—50	0.014
Stentor cæruleus	8—15	0.021
Euplotes patella	2	0.014
Stylonichia mytilus	4	0.018
" pustulata	4	0.010
Urostyla (undetermined)	100 or more	0.007
Paramecium aurelia	4	0.018
" bursaria	2—4	0.014
" (undetermined)	20—25	0.007

—*Intellectual Observer.*

fusoria in vessels containing half a grain of chopped hay and two drachms of distilled water.

* The millimètre is equal to 0.0394 of an inch.

NOTE ON THE DETECTION OF ARSENIC IN COPPER.

By W. ODLING, M.B., F.R.S.

As even in the most satisfactory performance of Reinsch's test for arsenic—the deservedly favorite test of English toxicologists—there is always some, although but an extremely small quantity, of the copper wire, foil, or gauze, dissolved, and as commercial copper is rarely quite free from arsenic, and sometimes contains a very notable proportion thereof, it is important that the copper to be used in medico-legal researches as a precipitant for arsenic should be specially tested as to its purity.* But as in the ordinary mode of experimenting by Reinsch's process the amount of metal dissolved is scarcely appreciable, it is quite unnecessary to submit any considerable quantity of it to examination. If a solution of four or five grains of the copper does not yield any evidence of arsenic, it is quite pure enough for the purpose, even though a little arsenic should be recognised in the solution of a larger quantity.

As a means of detecting traces of arsenic in copper, the author believes that the following process is superior to any hitherto proposed in conjoint delicacy and rapidity of operation :

A few grains of the copper cut into fine pieces are placed in a small tube-retort, with an excess of hydrochloric acid, and so much ferric hydrate or chloride as contains a quantity of iron about double the weight of the copper to be acted upon. The mixture is then distilled to dryness, some care being taken at the last to prevent spurting.

The whole of the copper is in this way quickly dissolved, and any arsenic originally contained in it carried over in the form of chloride of arsenic, which may be condensed in a little water with the excess of aqueous hydrochloric acid. The resulting distillate is then tested for the presence of arsenic, by treating it with sulphuretted hydrogen, or preferably by boiling in it a fresh piece of clean copper foil or gauze. In some cases the residue left in the retort may be treated with a little fresh hydrochloric acid, again distilled to dryness, and the distillate collected and tested along with that first produced.

Most oxygenants other than ferric chloride are objection-

* Taylor, 'Guy's Hospital Reports,' [3], vi, 201. Abel and Field, 'Journal of Chemical Society,' xiv, 291.

able, as by their reaction with hydrochloric acid they give rise to free chlorine, which passes over with the distillate, and renders it unfit for being immediately tested, either with sulphuretted hydrogen or fresh copper. Cupric oxide or chloride, on the other hand, is scarcely active enough for the purpose, while the dissolution of copper in hydrochloric acid, brought about by mere exposure to the air, is extremely tedious.

It may be as well to add that ferric chloride is rendered quite free from arsenic by evaporating it once or twice to dryness with excess of hydrochloric acid.—*Journal of Chemical Society.*

THE CAROB BEAN, OR LOCUST.

THIS famous plant, the *Ceratonia Siliqua* of botanists, though known for the nutritious properties of its pods more than 2000 years ago, is only just coming into general use as food for cattle. The carob tree is a remarkable plant, growing to the height of about fifteen feet, and is found wild in the countries skirting the Mediterranean, especially the Levant. At Malta it is almost the only tree that grows, relieving the monotonous appearance of the white stone inclosures by its dark-green foliage. It belongs to the natural order of the Leguminosæ, amongst which it is singular for the very unusual circumstance of its flowers having no petals. The pods contain a sweet nutritious pulp, and have lately become common in the fruit shops; they are a common article of food in the countries where the tree grows wild; and at the present day are sent from Palestine to Alexandria in shiploads, and from thence across the Mediterranean, as far as Constantinople, where they are sold in all the shops. The pulp resembles manna in taste and consistence, and it is sometimes used as sugar to preserve other substances. But the circumstance, of all others, which has rendered it famous, is the celebrated controversy as to whether it was not the real food of St. John in the wilderness; be this as it may, it certainly goes by the name of "St. John's Bread" in the wilderness of Palestine to this day, where it grows in great abundance, and where its produce is commonly used as food. It is also, by some, thought to be the plant alluded to by our Saviour in the parable of the Prodigal Son, as "the husks that the swine

did eat." It is called by the Arabs "Kharood." In Spain it is known by the name of "*The Algaroba Bean*," where it is generally used as food for horses, and during the Peninsular war it formed the principal food of the horses of our cavalry. Its seeds are about the weight of a carat, and have been thought to have been the origin of the ancient money weight. Strange it is that a plant possessing the nutritive properties of the locust bean should have remained for 2000 years before coming into general use! It is one of the many instances which prove how slow is the march of agricultural improvement when unaided by the light of science.

We do not know to whom the credit is due for having been the first to introduce the carob bean to the notice of the British agriculturist, but, be he whom he may, he has done much to promote the science of cattle-feeding, by the introduction of a plant possessing fattening properties greater than any other species of the Leguminosæ, and which only requires to be skilfully prepared and mixed with other compounds to supersede oil-cake altogether, by producing a larger quantity of meat at a smaller cost.

Of its fattening properties there can be no doubt, seeing that in fat-forming constituents it is richer than any other known plant. As will be seen from the following analysis by Professor Anderson, in the 'Transactions of the Highland Agricultural Society,' 1855, the carob (locust) bean, 100 parts, contains—

Water	.	.	.	.	12.57
Albuminous compounds	.	.	.	.	3.11
Sugar	.	.	.	.	49.68
Gum and starch	.	.	.	.	12.83
Woody fibre	.	.	.	.	7.00
Oil	.	.	.	.	0.41
Ash	.	.	.	.	2.80
Seeds	.	.	.	.	11.16
					100.90

Here, then, is a substance containing no less than 65.62 per cent. of fat- and flesh-forming properties, to say nothing of its seeds. And upon these I have made one or two experiments, in order to ascertain whether they possess any feeding value. I find on incineration they leave just 11 per cent. ash, 7 per cent. of which is soluble, giving .82 of phosphoric acid and 1.15 of nitrogen. Though extremely hard in themselves, they become soft by boiling, and are nearly altogether soluble in dilute hydrochloric acid, yielding gum, sugar, and legume; the only waste, 4 per cent., in the husk,

as before stated. If ground up altogether, and carefully mixed with other compounds, such as Indian corn and linseed meal, I am clearly of opinion that a feeding compound could be produced possessing fattening and flesh-forming properties far beyond any possessed by oil-cake. And, what is of immense advantage to the farmer, he would then be sure of having a genuine instead of an adulterated article.

—*Agricultural Gleaner*

THE PROGRESS OF ZOOLOGY.

By SHIRLEY HIBBERD.

ZOOLOGY may be considered one of the most fortunate of sciences. Like a well-spread table, it has something to tempt every taste—milk for babes, and strong meat for men. Its subjects are so varied, many of them so familiar, and all them have so direct a reference to life, that its very theories are romantic, and its facts oftentimes rise to the level of poetry. The affection of a dove for her nestlings, or the persistent faithfulness of a dog, following the corpse of his master to the grave, that he also may die there, are matters that scarcely come within the domain of the science to which the modern term of “Biology” has been applied, but they represent the sentiment which has been, and still is, the corner-stone of zoological science. The animals that are more immediately associated with man in his enterprises are those in which the most notable variations of form and colour occur; and the economy of civilization has required a more than casual investigation of the circumstances which influence their welfare, as well as of their relations to each other. The two most natural of all sciences—if such a term may be allowed—are zoology and botany; they deal with the material necessities of human life, with the best adornments of the world, and, above all, with organization. It is the possession of Life that renders a waving blade of grass or a chirping sparrow more attractive than an impassive stone. If there were no stone there would, perhaps, be no sparrow—they are both essential to the oneness of the world; but the sparrow has consciousness; it exhibits the working of mysterious instincts; it moves by volition *per se*, and it utters in its chirpings somewhat of an idea. It may be that we are searching after the Principle of Life as if it were a material substance or mathematical entity, forgetful of Stahl’s defini-

tion, *putredini contrarium* ; but any way we do search, and not in vain, for at every step some discovery is made which affords encouragements for perseverance. But we may adopt the term "natural," as applicable to zoology and botany, in an especial sense, not because they treat of natural objects, for all sciences do that, but because their subjects are almost wholly contemporaneous, and those that are not so may be made so by the aid of analogy ; so that even palæontology may be studied at the Zoological Gardens, and recent species among the models of extinct forms in the Crystal Palace. What Margaret Fuller expected of the sculptor may be as well expected also of the zoologist :

"If he already sees what he must do,
Well may he shade his eyes from the far-seeing view."

Student and professor are alike concerned in one effort, and that is the separation of the natural from the artificial, and the proven from the conjectural, in all inquiries and all accumulations of facts. At the very threshold of zoology we perceive that there are many stumbling-blocks, and if we escape those without damage, we next perceive that there is a sort of antagonism between man and nature, the one insisting on creating, if he cannot find, a system, the other insisting that every fact shall stand for itself, and every creature enjoy an independent sovereignty. No doubt the plants and animals that redeem the world from stony deadness are so many members of a system as truly mathematical as the law which governs the relationships of the planets, but man has not yet discovered what that system is ; and until he has mastered the last little item of organography, he must perforce rely upon invention, and classify his knowledge by artificial rules. It is a wonderful testimony to man's power of perception and analysis that since the second edition of Cuvier's *Règne Animal* there have been scarcely any contributions to the classification of animated nature of a character to influence deeply the aspects of the science. Even those of Professor Owen, who, pursuing the indications of analogy with the instinct of a poet, has only been able to rectify in some few particulars the deficiencies of Cuvier's magnificent scheme. In fact it is no easier for Owen than it was for Cuvier or Linnæus to define on what grounds a class, order, or genus, shall be formed. Nature has no classes, no orders, no genera ; she fashions creatures to lead a certain life, and places them in the conditions requisite to their well-being, and with a defiant nonchalance says, "Group them as you please ;" and all that we can do is to define apparent relation-

ships, and make a sort of artificial memory out of the signs presented to us. The acquisitions of anatomy and physiology have favoured the study of zoology in connection with the homologies of internal structure, and rendered zoology more recondite in the exact proportion in which its tests and comparisons have been removed from popular eyesight; but it has yet to be proved that structure and function are alone sufficient to afford satisfactory evidence of relationship for the purpose of grouping the subjects of the science into families and classes. There is a tendency in the modern school of zoologists to consider form as an accident of life, and as very remotely connected with organisation, whereas, though it be very objective, it is certainly the true key to structure and function. The botanists have the best of it in a choice between two systems; they are neither tied to Linnæus nor Jussien: and while the system of the first is a mere aid to memory, and as such invaluable, the other is self-expounding, and conveys information in its very terms, yet becomes entirely artificial under false pretences, when its assumed "natural" principle fails in the application.

It has never been attempted yet to establish a parallel between Bacon and Linnæus, and show how the inductive method so differently dealt with by such became the substantial basis on which their successors in the several departments of physics and natural history have built up the edifice of modern science. The *Novum Organon* and the *Systema Naturæ* are the two great pillars which sustain the portico of the temple for the completion and embellishment of which so many energies have been evoked, and so many splendid abilities combined. When we compare the classification now generally adopted with the scheme of the mammalia which Linnæus so patiently elaborated, we are astonished at the few departures from it which have been found necessary in modern times. Cuvier found ready to his hand a magnificent framework, and he did well in boldly clothing it, to hold in reverence the genius of his Swedish predecessor, who had determined the true elements of zoology so accurately, and had invented a language so well adapted to a comprehensive natural system, that the supply of deficiencies was almost all that remained to be done. But the deficiencies were many, and in none of the groups has rectification been more necessary than in the section to which Linnæus assigned the opossums, in the order *Feræ*, placing them between the bears, badgers, and racoons. Cuvier had the advantage of knowing most of the mar-

supials of Australia, and he arranged them in an order between the Carnassiers and Rodents, making the one great peculiarity in their mode of reproduction the basis of the order *Marsupinata*. This, as regards the Mammalia, was the distinguishing feature of Cuvier's scheme, and it is the one most likely soon to undergo a complete revolution. It is in the classification of the tribes below the Mammalia, and especially the invertebrates, that Cuvier shines; as, on the other hand, it was amongst those that Linnæus lost himself, as witness his class "Vermes," into which he flung all the animals that refused to take positions among vertebrates or insects. To form a fair estimate of the progress of zoology in the classification of the orders in the vast stretch between Batrachians and Zoophytes, the *Systema Naturæ* must be explored, and its method of dealing with these compared with the labours of Cuvier and his successors. Still, the principles of classification have remained nearly the same, at least since Cuvier, proving how truly he seized upon the characteristics really indicative of structural and physiological relationships. The most important proposal for a redistribution is that of Professor Owen for the division of the Mammalia into two great groups, the designations of which are self-explanatory. Under *Placentalia* he ranges all the higher mammalian forms in the same order as in Cuvier's scheme, but the marsupiates and monotremes are separated to form another grand division called *A-placentalia*, in which the monotremes are ranged to correspond to the edentates in the first division, and as their counterparts with a less perfect mode of reproduction. But this, though based on obvious and important distinctions, appears to have found little favour with zoologists, and, like the labours of Grant and Blainville on the nervous system, is valued more for the prominence it gives to certain physiological facts than for its adaptability to the purposes of classification in the present transition state of zoological science. These things are, however, the proper fruit of the labours in philosophical zoology which have been conducted with such ardour in Europe during the past half century, and we seem now to be waiting for a second Cuvier who shall boldly grasp the distinctive features of the animal kingdom, and arrest for a time the growing tendency to trifle with zoological landmarks by a revision of all boundary lines, and fitting into their proper places all that is true and durable in the various systems that have been of late propounded.

The frequent varying of the basis of classification, though inevitable, is not the less destructive to harmony and that

correspondence of mutual relationships which a system professes to unfold. That homologies of structure are to be regarded as of the first importance in the determination of the place an animal is to occupy in a natural system is self-evident; but it is worth asking, whether a purely artificial system would not serve as useful a purpose in zoology as it has done in botany, because it could be framed once for all, and serve for comparison at any future time with a progressive natural system, which of necessity can never be perfect. Pliny excites the laughter of the young naturalist when he describes the cat as the *only bird* that suckles its young; but a strictly homomorphic system would have its value, and the wonder is that no one has ventured hitherto to propose a scheme of the kind. Bats, squirrels, and marsupiates claim relationship with birds in their faculty of flight; the quadrumanes might as well contribute the marmosets to the family of squirrels, and the Douroucoulis to the cats, as retain them for the doubtful character of their hands. The armadillo, *Dasypus apar*, is more like a turtle than a mammal; the Aard-wolf, *Proteles Lalandii*, is a hyena in its external aspects; the Cetacea are fishes, to all intents and purposes, in their habits of life as well as in general form. Perhaps the difficulty of classing the marsupiates might be got over at once by homomorphism, for as at present regarded they threaten the boundaries of Rodentia, Carnivora, Cheiroptera, and Testudinata, and a classification resting on external configuration would serve all the purposes of an index to species, without impeding inquiry into physiological and anatomical details. As it is, the natural system affords only a few faint indications of character, and the fault of all natural systems is that as soon as they cease to indicate correctly they lead the student astray, for after a few of the most characteristic groups have been defined—as in botany the Coniferæ, the Cupuliferæ, and the Ranunculaceæ, and in zoology the Quadrumana, the Carnivora, and the Rodentia—there are innumerable other subjects that refuse to conform to distinct positions by reason of their combining the characteristics of many. No system can suffice to indicate the place, for instance, of that curious vertebrate, *Amphioxus lanceolatus*, which, emulating the chameleon, has a life on one side which has no necessary conformity on the other. The chameleon may sleep on the left side while the right side is awake, and in the *Amphioxus* the bronchial aperture, the olfactory organ, and the eye, are all situated on the left side. The *Chamælonidæ* are, however, a well-defined group of

saurians, but the *Branchiostoma* is as indefinable for scientific purposes as any of the cattle of fairyland. There is certainly room for an artificial system of zoology of a comprehensive kind for the tabulation of the entire animal kingdom.

Looking at the several departments of zoology in their present aspects, it is evident that the most satisfactory progress has of late years been in the study and classification of the lower forms of life. The aquarium and the microscope have given an impetus to the study of the Invertebrata, and such immense additions have been made to the knowledge of this great section that the mere weight of facts threatens to separate it from the hitherto recognised connection with the vertebrates, and so to constitute in zoology two distinct sciences, the future paths of which will be separate though parallel. It is in this section that we have most striking evidence of the abundance of life in every region of the globe. Dr. Wallich and Mr. Gwyn Jeffreys have, by their researches on the subject of deep-sea life, enlarged immensely the geographical limits and the physical conditions known to be favorable to the production of animal life. In that still lower department of the Infusoria, the magnificent work of Pritchard offers another example of the splitting up of old divisional arrangements through the accumulation of facts indicative of distinctive characteristics. The publication of a fourth edition of this work, combining the labours of Arlidge, Archer, Ralfs, Williamson, and Pritchard, with the magical delineations by Mr. Tuffen West,* is a sufficient proof that natural history flourishes in Britain, and that the objects least attractive to the popular eye are acquiring a popularity such as to assure us that the cultivation of science is almost universally shared in by the intelligent classes of this country. But when we get among desmids and diatoms we have almost done with zoology, and we may take advantage of this extremity to offer a few remarks on the higher forms of the vertebrata.

If we are astonished at the abundance of life on the globe, and can sympathise with Dr. Livingstone's remark, that it "seems like a mantle of happy existence encircling the world," it is also pretty certain that some of its forms are fast passing away from us, and that not very far in the future the zoologist will pay as much attention to mammals recently extinct as we do to certain fossil forms, because they fill up

* 'A History of Infusoria, including the Desmidiaceæ and Diatomaceæ.' By Andrew Pritchard. London: Whittaker and Co.

gaps in our classified system of transitions. That the dodo is utterly extinct there can be no reasonable doubt, for the region it inhabited has not only been thoroughly explored, but is now densely populated. The kiwi or apteryx is fast going in the same direction, and as the interior of New Zealand becomes a home for the white man that and other feræ must of necessity disappear. The last *dinornis* has probably long since perished, yet it could not be long since there were at least eight species of *dinornis*, varying in size from that of the bustard upwards, *D. giganteus* being vastly superior to the ostrich in magnitude. The great *quadrumana* will probably be the next to disappear, for civilisation will not tolerate the existence of anthropoid apes, and the mere savagery of what is called "sport" will extinguish them. The gorilla evidently occupies but a limited range of country, and that near the coast, and the tendency of civilisation is to people the coasts everywhere with colonies of Anglo-Saxons, French, and Portuguese, respecting whom it is not easy to say which are the most active in the destruction of indigenous fauna. The beaver still holds a few secluded weirs in the North of Europe, but no one can say when it became extinct in Britain. The otter is so scarce in this country that the sport of hunting it is almost obsolete, yet it is only thirty years since the finest otter ever seen in Britain was shot at Walthamstow, on the borders of Epping Forest, where it may still be seen in a very fair state of preservation. Of the *Falconidæ* there are few living examples left in these islands, and the eyrie of an eagle is as rare in England as the nest of a thrush in France, where the most melodious of songsters is valued only for its flavour in a pasty by a people who make great pretensions to the culture of the sentimental. The noble blackcock and the ignoble black rat appear to have vanished almost simultaneously from the British fauna, and the fox is probably following the wolf in full conviction that its mission is accomplished. Indeed, the fiercest war maintained by man against animal races is waged against the carnivora and the raptorial birds.

(To be continued.)

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire.

RESEARCHES ON THE INFUSORIA OF THE BLOOD IN THE
MALADY KNOWN AS APOPLEXY OF THE SPLEEN (SANG
DE RATE).

By M. C. DAVAINE. (Sitting of the Academy, 27th of July, 1863.)

(Continued from p. 242.)

The longest duration of life after inoculation has been seventy-six hours from all experiments. It is not necessary, I think, to dwell on these facts of the existence of the Bacteria in the blood in splenic apoplexy, as no one in the present state of science will seek for any other agents as the cause of contagion than these corpuscles—agents mysterious and unseizable, which develop and destroy themselves under the same conditions and are possessed of the same physiological properties as the Bacteria. This agent is visible and palpable; it is an organized being, endowed with life, propagating in the same manner as other beings. By their presence and their rapid multiplication in the blood, they bring into its constitution certain modifications, no doubt acting in the manner of ferments, which speedily kill the infected animal. The study of splenic apoplexy raises other questions which have also been the object of my researches, but the results are not so exact as to enable me to lay them before the Academy.

The Academy, at its sitting on the 27th of July, received a very interesting communication from M. Davaine, on the frequency of Bacteria being found in the blood of sheep attacked with splenic apoplexy (*sang de rate*), and on inoculations made for the purpose of experiment on different animals. It is for the completion, as much as lies in my power, of this communication, that I have the honour to submit for your consideration a few observations which I have collected on the same subject.

These singular productions were observed for the first time by Facks in 1848, by Bravell, of Dorpat, and by Pallender,

and have been made known to the veterinary profession by M. Delafond in the *Bulletin des Séances de la Société des Vétérinaires*, 1860. M. Delafond had ascertained the presence of Bacteria only in the blood of animals affected with charbon. It is probable that if he had been able to continue his researches he would, like me, have ascertained their presence in some other maladies of the horse. I have, in fact, found them many times in the maladies of this animal of a *typhoid diathesis, influenza, &c. &c.*, of which the mode of manifestation is very different. Thus it has happened to me frequently to meet with them in animals which had sunk under the thoracic or the abdominal form of this malady. Also in horses that had died consequent on those forms which are characterised by the *raptus hæmorrhagic*, and moreover in those which had sunk under the paraplegic form, which is one of the most ordinary modes of expression; for it is most remarkable that notwithstanding the diversity of the organs affected, the histologic study permits us to aver, under these circumstances, so different in appearance, the existence of analogous lesions, from which we are logically authorised to presume the identity of their nature. I have also found them in the blood of an animal which had died consequent on gangrene provoked by traumatic reaction. I will briefly relate the case:—17th of November, 1861, the horse, number 9814 of the Pantheon establishment, was being clipped by one of the grooms. The man, in an excess of brutality, struck the animal with the point of the scissors at the superior and posterior part of the scapula. This was immediately followed by an abundant subcutaneous hæmorrhage, and the limb became the seat of an extended and painful tumefaction. On the 22nd emphysema appeared, and the horse died on the 23rd from gangrene. At the autopsy, the usual lesions of this affection were found, and the presence in great numbers of Bacteria in the blood was also ascertained. All these observations were made immediately, or a short time after death, in a space of time varying from one to six hours. Once only I have been able to ascertain the presence of these little bodies during the life of the animal. But it is necessary to notify that they were much smaller than those I have ordinarily found, and likewise less numerous. The blood of this animal was preserved for several days, and it was impossible to perceive any change in the number or size of these productions. I have several times introduced the blood thus altered into young sheep, and twice these inoculations have been followed by death. The first case is reported in the *Bulletin de la Société Vétérinaire*, page 667, 12th of April,

1860. The second inoculation, followed by death, was on the 1st of December, 1861, at 2 o'clock p.m., and the animal died on the 4th, at 2 p.m., after having been rather dull, and losing its appetite. The body was emphysematous, and, on parting the wool, the skin was seen to be of a dark-violet colour. On taking off the skin, blood-tumours were found in the subjacent cellular tissue, occupying principally the neighbourhood of the ganglions, at the entrance of the thorax and the groins; the abdomen contained a little bloody serosity; the volume of the spleen was somewhat increased; the parenchyma was black and tarry, and contained Bacteria in abundance, as did the blood, and all the other parts of the body. These are not the only lesions met with in this affection. Globules of a particular form are sometimes found; they are regularly rounded off, and larger than the normal white globules, of which they have the appearance. They are united in small clusters, in great abundance, and are composed of an outer cell of a bulbous appearance, reflecting, in some, a violet tint. In the centre of this cell there are found several nuclei, the double outline of which is well marked. In some these nuclei have degenerated into the sandy or granulous form particular to the nuclei, which are produced by *scissian*, so that evidently we have under our eye an alteration of the elements which are in a fair way of multiplication. This, moreover, will explain the rapid march of these affections. The blood usually presents this remarkable character, that if you examine it after death the globules have often disappeared, and crystals of different forms have taken their place, the result of their dissolution, the most abundant of which have a great analogy with the crystals of the cholesterine. The cells of the liver in the midst of adipose globules are almost invisible. The muscular fibres also contain adipose globules in abundance, and their elegant striated appearance has almost totally disappeared. This phenomenon is above all most remarkable in the psoas muscles in the paralysis which I have described above. The presence of adipose matter is in great abundance in all the tissues, and fluids of the economy. The existence of Bacteria analogous, according to M. Davaine, to the products which are developed in the butyric fermentation, lead us to suspect that the presence of the adipose element plays a great part in the appearance of this affection, particularly if we notice that it is always the fattest animals which are attacked by the malady.

In resuming this notice, which it was necessary to make as brief as possible, I will say,—First. That the Bacteria are not

peculiar to animals attacked by splenic apoplexy, as is proved by the pre-cited observations.

Second. That the blood which contains them is inoculable, and that they are again found in the blood of animals inoculated of Bacteria, in great abundance.

Third, That the presence of fat in the tissues and fluids of the economy, and the state of obesity of the animals who are the victims of the affection, with the similitude signalised by M. Davaine between the Bacteria and the product of the butyric fermentation, permit us to presume the part that fat plays in the production of this malady. There is no doubt that this conclusion wants a vigorous demonstration, and which I have merely indicated here.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

British Pharmacopœia. Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom. London: 1864, 8vo, pp. 444.

ON the present occasion we intend acquainting our readers with the chief objects and leading features of the new or 'British Pharmacopœia,' by laying before them extracts from the preface of this book, with short comments thereon, reserving for a future opportunity our more complete criticisms upon the work.

The authority for publishing the 'British Pharmacopœia' was obtained by the passing of the Medical Act in 1858; and by the Act 25 and 26 Vict., cap. 91, in addition to many other things, it was enacted that "The '*British Pharmacopœia*,' when published, shall for all purposes be deemed to be substituted throughout Great Britain and Ireland for the several above-mentioned Pharmacopœias" (*i. e.* those of London, Edinburgh, and Dublin), "and any Act of Parliament, Order in Council, or custom relating to any such last-mentioned Pharmacopœias, shall be deemed, after the

publication of the '*British Pharmacopœia*,' to refer to such Pharmacopœia." We see, then, by the perusal of this section of the Act referred to, that it was the laudable desire of the Medical Council to get rid of the absurdity, inconvenience, and even danger, of British medical practice being encumbered with three more or less distinct codes for the preparation and prescribing of remedial agents. Notwithstanding, however, the great praise which is due to those who have endeavoured to effect a change so important and desirable, we are compelled at once to state that the '*British Pharmacopœia*' will have to undergo a searching revision and very considerable alteration before it can displace and supersede its three predecessors. This is an opinion which is enjoyed, not only by ourselves, but also by the majority of prescribers and dispensers of medicine throughout the kingdom.

The '*British Pharmacopœia*' is divided into two parts and two appendices. The *First Part* consists of the *Materia Medica*, and the *Second* of the *Preparations and Compounds*. The *Appendix A* contains the *Articles employed in the Preparation of Medicines*, and the *Appendix B* *Articles employed in Chemical Analysis*. The nature of the appendices are sufficiently explained by their titles, but we shall now quote portions of the preface in explanation of the peculiarities of the two principal divisions of the book.

"The *Materia Medica* contains, in its simplest pharmaceutical form, every definite medicinal substance, whether obtainable in ordinary trade, or prepared by the chemical processes in the *Second Part*, which the Committee of the Council found, on careful inquiry, to be so far approved in practice as to be entitled to a place in the '*National Pharmacopœia*.' Under each article are given,—“1. A Latin pharmaceutical name, by which it may be prescribed” (the entire matter of the work, with this sole exception, is briefly rendered in the simplest possible English); “and an English name for use in describing the processes in the *Second Part*. 2. Its definition, together with its chemical symbol, if it be a substance of definite composition; its botanical name if it be a plant; and also in most cases, a reference to a correct figure of the plant, and a statement

of the quarter whence the article is obtained. 3. The characters by which it may be distinguished from all other articles of the *Materia Medica*. 4. The tests by which it may be ascertained to be of due strength, and free from known impurities or adulterations. And 5. The preparations of which it is an active ingredient.”

“The Second Part comprises processes for the forms in which medicines may be used in extemporaneous prescriptions, and for articles in the *Materia Medica* obtained by chemical operations.” Why the sources, properties, &c., of chemicals and drugs should be described in one part of the book and their preparation in another part we cannot understand, and we feel convinced that this division of such kindred subjects will be attended with much inconvenience to those for whom the ‘*National Pharmacopœia*,’ has been compiled.

In very many instances the names of preparations hitherto employed in the *Pharmacopœias* of London, Edinburgh, and Dublin, have undergone either considerable alteration or have been totally changed. Many articles which had long existed in the old codices have been omitted, while several new ones have found places in the ‘*British Pharmacopœia*.’

“The alterations which have occasioned most anxiety to the Council are those which affect the strength, and therefore the doses, of dangerous medicines. Three measures have been adopted for securing the public against the risks which might arise from such changes. In the first place, important changes in the strength of dangerous preparations have been carefully noted. Secondly, when change was inevitable, the weaker form has been preferred to the stronger. Thirdly, an attempt has been made to assimilate the strength of preparations of the same pharmaceutic form, in order that they may be prescribed in similar doses.
* * * * Thus, among tinctures, those made with dangerous ingredients are, with few exceptions, brought to one standard of strength, so that an ordinary dose is from fifteen to twenty-five minims; while all tinctures made with substances of no great activity are left, as formerly, uniform in strength, so that an ordinary dose is from one to two fluid drachms.” These doses, of course, are those which

are administered in the practice of human medicine. In the 'British Pharmacopœia' no mention is made of the doses or therapeutic action and uses of medicines. The subject of weights and measures is one to which the Council gave long and patient attention, and the results of their deliberation is that "The weights and measures of the 'British Pharmacopœia,' with their symbols, will now stand as follow :

WEIGHTS.

1 Pound	.	.	.	lb.	=	16 ounces	=	7000 grains.
1 Ounce	.	.	.	oz.	=	.	.	437·5 „
1 Grain	.	.	.	gr.	=	.	.	1 „

MEASURES.

1 Gallon	.	.	C	=	8 pints	.	.	O. viij.
1 Pint	.	.	O	=	20 fluid ounces	.	.	fl. oz. xx.
1 Fluid ounce	.	fl. oz.	=	8 fluid drachms	.	.	.	fl. dr. viij.
1 Fluid drachm	.	fl. dr.	=	60 minims	.	.	.	min. lx.
1 Minim	.	.	min.	=	1 minim.	.	.	min. j.

All liquids are ordered by measure unless it is stated otherwise." * * * * *

"In conclusion, the Council warn all apothecaries and pharmaceutic chemists that, on the publication of the 'British Pharmacopœia,' it will be necessary, in order to discharge safely their duties to the public, that they should duly alter or destroy all pharmaceutic preparations made according to previous and now altered formulæ." We will conclude the present notice of the 'British Pharmacopœia' by again stating our belief that the work, in its present form, containing, as it undoubtedly does, innumerable imperfections, cannot completely supersede the Pharmacopœias already in use in Great Britain and her colonies, but that until a more perfect edition is published it will be used contemporaneously with those works, and we would therefore advise veterinary surgeons, in purchasing preparations of the wholesale druggist, and in writing prescriptions which may be dispensed by a chemist and druggist, to invariably take the precaution of adding to their written directions,

when necessary, the abbreviations Ph. Br., Ph. L., Ph. E., Ph. D., to the names of the articles indicated, accordingly as they are to be prepared or dispensed as directed by the British, London, Edinburgh or Dublin Pharmacopœia.

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

(OFFICIAL REPORT.)

THE above society held its quarterly meeting at the St. George's Hall, Bradford, on Monday, the 11th inst. The following gentlemen were present:—The President, Mr. E. C. Dray, Leeds; Messrs. Secker, Knaresborough; Fallding, Wakefield; Anderton, Skipton; Broughton, Leeds; Cuthbert, Leeds; Carter, Bradford; Smith, Barnsley; McTaggart, Halifax; Lord, Halifax; Kay, Pontefract; Ball, Otley; Naylor, Wakefield; Paterson, Dewsbury; Howell, Rochdale; Greaves, Manchester (President of the Lancashire Veterinary Medical Society); Horne, Barnsley; and the Secretary.

Four new members were elected, viz., Messrs. Howell, Rochdale; Smith, Barnsley; Sampson Wood, Moor Town, Leeds; and Austin, Huddersfield.

After the preliminary business was concluded, *Mr. Secker* read an excellent paper on laminitis. He prefaced his essay by paying a high compliment to the members on the inauguration of the society, hoping that their labours would be crowned with success, and promising that he would do his utmost towards that end. He said that laminitis was a disease to which the horse, as an animal of speed and weight, was most liable, considering the concussion to which the feet are subjected by the application of iron shoes, and the abuse of the drawing-knife. Referring to the disease in other animals, *Mr. Bell*, of Lancaster, stated that he had seen it in cattle; he had likewise found that well-bred horses, having strong, upright feet, were oftener affected than others. *Mr. Secker* divided the disease into three forms, and described the acute as the most painful ailment that affects the horse. After minutely describing the symptoms, he went on to the causes, and, in doing so, stated that, although what is termed metastasis was sometimes a cause, he believed that many cases ascribed to it have been laminitis from the commencement.

As one of the terminations, he said that he had seen mortification in two or three instances. The treatment recommended by him consisted in the use of bleeding, cathartics, alkaline carbonates, a certain deobstruent, applying poultices to the feet, and attention to the general comforts of the animal.

In the discussion the *Secretary* observed he could not understand the term metastasis as such, and thought that all cases ascribed to this cause were due, not to a transference of the seat of disease, but to irritation of the mucous membrane, extended through the medium of the skin to the laminæ of the feet, they being folds of the derma confined within the horny box. In support of his views he called the attention of the members to the irritable condition of the skin in laminitis, and believed the irritation to be general, and to exist throughout the mucous membrane primarily affected, the skin and laminæ. He objected to the employment of drastic cathartics, but was in favour of giving mild laxatives, alkaline carbonates, &c.

Mr. Greaves, having objected to the giving of large doses of cathartic medicine and to warm applications to the feet, brought before the notice of the members thirty-one morbid specimens of diseased pedal bones, kindly sent to him by Professor Gamgee, expressly for the Bradford meeting. There was an animated discussion for and against the Messrs. Gamgee's views on the pathology of diseases of the feet, which, in all probability, will be laid before the profession *in extenso*, as Mr. Greaves has proposed to the Secretary, since the meeting, that they should discuss this matter in a series of friendly letters.

Mr. Naylor said that, in his practice, he found that horses with weak feet and heels were the most susceptible to this disease, and he had been very successful in the treatment of horses having good, strong feet. He had seen the disease as a sequel to parturition, and condemned the use of setons in the active stage.

Mr. Carter allowed that in those cases said to be due to metastasis there was great irritation of the skin, and recommended the employment of slings when the animal will not lie down.

Mr. McTaggart applied poultices containing arnica, and recommended homœopathic remedies.

Mr. Cuthbert advocated cold poultices and bleeding, but did not approve of strong cathartics; he also recommended blisters after the acute symptoms had subsided.

Mr. Broughton and *Mr. Lord* agreed in their method of treatment.

Mr. Howell said that most cases of laminitis arose from indiscretion in feeding, more particularly from feeding on wheat; and in such cases he gives cathartics combined with carminatives, and bleeds largely from both brachial veins.

Mr. Secker then replied, and maintained his opinion as to the administration of strong cathartics, and that strong feet were most liable to the disease; that weak feet are more yielding, and consequently more easily affected by warm poultices, which he prefers to cold; he likewise spoke at some length, commenting on some of the views of the members who had spoken.

The President, in closing the discussion, said that rasping of the hoof was often a cause of the disease, the hoof consisting, microscopically, of tubes hermetically sealed. He approved of topical bleeding, but not from the toe; and condemned the use of cathartics; upheld the theory of metastasis as generally understood, and agreed with the essayist that the strong hoof and horses of high action are most liable to the disease. He objected to frog-setons, and recommended the treatment generally adopted by the essayist, with the exception of strong cathartics, to the serious consideration of the members, well knowing that *Mr. Secker* was a gentleman eminently successful in his treatment, and that he had arrived at his conclusions after well-matured study, great experience, and careful thought. The President concluded his remarks by proposing a vote of thanks to the essayist; this was seconded by *Mr. Naylor*, and carried with applause.

The unanimous thanks of the society were accorded to *Professor Gamgee*, for his kindness in sending the specimens above referred to.

The next meeting of the society will be held at Harrogate, on Monday, 11th of July, at 1.30 p.m., when *Mr. Naylor*, of Wakefield, will read a paper.

W. WILLIAMS, Bradford,
Hon. Sec.

WEST OF SCOTLAND VETERINARY MEDICAL
ASSOCIATION.

THE quarterly meeting of the West of Scotland Veterinary Medical Association was held in the Glasgow Institution Rooms, on Wednesday, 6th April.

Mr. ROBINSON, President, in the chair.

The minutes of the former meeting were read and approved.

The Bills now before Parliament, called the "Cattle Importation Bill," and "Cattle Diseased Meat Bill," were moved for discussion by the *Chairman*, who said,—In the time allowed for the discussion of particular cases, before the reading of the paper specially prepared for this day's proceedings, I should like to hear the opinions of the members of this society on the Bill now before Parliament regarding the sale of diseased cattle and meat; and before entering upon the discussion of this question I will merely throw out a few ideas for your consideration, which I trust will be the means of evoking an unbiassed opinion from each of you as to the necessity of coming to a right conclusion on this matter, at the present time, I may say, one of vast importance.

The subject may be generally stated as referring to the alleged nature of and extent to which the sale of diseased animal food, and also the traffic in the milk of unhealthy cows, is carried on in large communities, involving, as it does, to such an extent, the health and lives of the people. The question is not only of the most vital public importance, but is peculiarly applicable for investigation by this association.

A great deal has been said and published regarding it, and in some cases individuals have been indicated with as much precision as if named who are said to have, directly or indirectly, connived at the introduction of diseased cattle and carcasses into our markets and slaughter-houses. In appealing, however, to your collective experience, I hope that the whole bearings of the case will be elicited, and the public confidence restored, either by proving the utter groundlessness of the allegations thus made, or by protecting the public from the risk of even occasionally a carcass being exposed in which the taint of disease can be detected by the most skilful as well as most vigilant inspection.

I do not presume to dictate the precise means by which these objects are to be obtained, or to cast the slightest im-

putation on any of the gentlemen at present holding office as inspectors of markets or slaughter-houses; but I may at least indicate one way by which they might be satisfactorily accomplished, although, in my opinion, the present market and slaughter-house regulations, if carried out, are sufficiently stringent for all practical purposes. Let professionally educated men be appointed as inspectors of these places—men qualified by their veterinary and scientific knowledge and experience to give an authoritative opinion as to what animals are or are not suitable for human food—men of known abilities and unimpeached integrity, who would perform their duties without fear or favour. Let the light of science be brought to our aid, and the public would then have a guarantee that they would be effectually protected against any deleterious animal food emanating from the public shambles.

To anatomise the subject of diseased animal food thoroughly, the scalpel must be used with a firm and unflinching hand, and this pestilential sore in our social economy laid open, and, when discovered, the application of the remedy must be short, sharp, and decisive.

Perhaps, after all, however, it may be a wind-ball which the probe of investigation may cause to collapse, or it may be found to arise from the morbid action of the spleen in those whose *cacoethes scribendi* has raised the whirlwind of nauseating alarm now agitating the public mind; or, on the other hand, it may be of the very utmost importance that certain gentlemen have lifted their pen to disclose a practice the prevention of which would be a lasting security to the community against unwholesome meat ever appearing on their tables.

Indirectly, the integrity of this association is assailed; and were this question to remain without being thoroughly discussed, it might lay us open to a charge of complicity in the nefarious traffic, by our neglecting to institute those inquiries which the extensive professional practice of its members enable them so easily and so accurately to answer. The reputation of stock-holders and dealers, cow-feeders and dairymen, agents and butchers, is intimately concerned in the settlement of this question. The public anxiety demands either a refutation of the published statements, or that they be established as facts, and producer and customer are equally interested in having a careful, free, and candid discussion to ventilate the whole matter.

Gentlemen, in considering this subject I have every con-

confidence that you will do so dispassionately, without party feeling, and with the single end in view of promoting the public good.

Mr. Anderson took especial notice of the "Disease Cattle Prevention Bill," and called the attention of the members to the *Veterinarian* for April, which contained a summary account of a few points under the head of "Diseased Cattle."

These points he considered too stringent, and if allowed to come into effect, would tend considerably to the dealer's disadvantage, without lessening the evils they were intended to remove; not to speak of the very great amount of care that would be necessary for the best-informed inspector to say, often at one examination, whether the animal was possessed of what is called an infectious disease or not.

To place such powers in the hands of one inspector, or even two, would also be unwise, as it placed him too far beyond the owner, and under the control of no one. A committee ought to be formed to consider all questions affecting immediately the trade in markets, so that no delay might be caused, and as little injury done to the stock-owner as possible.

He hoped that those various points would be well considered when the Bill passed through committee, and altered so that the trader in cattle should not be punished for an act he has no control over, and was often ignorant of his cattle being diseased.

Mr. McBryde thought that this Bill had an important object in view, and although not perfect in all its parts, considered that the points referred to by *Mr. Anderson* might be modified in committee, but could not, in his opinion, be materially altered. The fact was well known that many farmers had lost almost all their stock by purchasing a diseased cow in the market; so to prevent parties exposing even those supposed to be affected, heavy penalties were necessary.

It was also necessary to place the inspector as distant from the control of the owner as possible, in order that he might not be swayed or deterred from duty by threats. Although the Bill contained some things difficult to execute and very stringent on the dealer, he would hail it as a useful measure if it lessened the amount of the diseased meat sold, but more especially if it prevented those infectious diseases which scourge the country and bring many to ruin.

Mr. Pottie was very much of the same opinion as *Mr. Anderson*, and thought we should not leave unconsidered the interest of the agriculturist or dealer, seeing our profes-

sion so much depended on them, but assist them in what might be deemed an oppressive measure. Penalties were easily put down on paper, but one of £20 was not so easily paid, especially when in some instances the inspector might err. Then there is not only the fine, but the owner would obtain a public name which was not easily borne, and all for nothing, bearing out what Mr. Anderson has said regarding the difficulty of arriving at sound conclusions as to infectious diseases.

Much had lately been said about the increase or decrease of pleuro-pneumonia in this country; and as Mr. McCall, of this city, had published a letter last week stating that it was on the increase in the west of Scotland, he should like to hear the opinion of the members present on this point. As to the district around Renfrew, he could only say that not a case of it was known there at present. Some attempt has been made to induce belief as to its increase in the London dairies, but Professor Simonds' letter, published in this month's *Veterinarian*, entirely puts it beyond a doubt that such is not so.

Professor Dick, of Edinburgh, has also mentioned that it is on the decrease in the east of Scotland, so that from such authority, and our own experience, we can arrive at a pretty fair idea of its present condition.

Mr. Dobie could bear out the opinion that, compared with former years, in the Irvine district it was not known at present, so that he could not understand how Mr. McCall was able to maintain his point. As to the points of the Bill discussed, he was inclined to view them as hurtful measures to cattle-dealers, and would prove ruinous to parties who had a stock of cattle where disease existed, as we often find that parts of the stock might be to all appearance sound, and the owner, anxious to part with it to prevent further loss, sends it off to the market. Would it not, then, be ruinous if such were not permitted to be sold? Then, if we take into consideration the difficulty of minutely inspecting animals in the markets, you must say with me that it would be impossible. Therefore, granting that one or two were affected, if infectious, as some so strongly hold, the presence of such animals was sufficient to contaminate a whole market. No doubt the inspector might do a great amount of good amongst bad cases, and deter many from sending such to the public markets; yet when all difficulties are considered, such punishment should not be put upon those who were so situated as to be unable in a great measure to control circumstances.

Messrs. Ferguson, Blackie, Mitchell, Robb, Walker, and

Pollock, all took part in the discussion, and were of opinion that the whole Bill required very careful consideration and alteration.

The President then called on Mr. Blackie to read his paper on grass staggers. It awakened some discussion, and for it he received the thanks of the members.

The Secretary stated that Professor Gamgee was next on the roll, and would deliver an address at the next quarterly meeting.

ALEX. POTTIE,
Secretary.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 6, 1864.

PRESENT :—The President, Professors Simonds and Gamgee, Messrs. Braby, Broad, Dickens, Ellis, Harrison, Hunt, Lawson, Moon, Secker, Silvester, Wilkinson, Withers, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

Letters were read from Professor Brande and Dr. Struthers, relative to the meeting of the Court of Examiners.

It was moved by *Mr. Braby*, and seconded by *Mr. Silvester*—

“That the London examinations should take place on April 21st, 22nd, 25th, and 26th.”—Carried.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Dickens*—

“That the Scotch examinations should commence April 26th, and be continued on following days.”—Carried.

Letters were read from E. Holland, Esq., M.P., relative to the Veterinary Medical Bill.

The Cattle Diseases Prevention Bill was next read.

A long discussion ensued relative to the appointment of Veterinary Surgeons as Inspectors, and a wish was expressed that the Council should watch the course of the Bill before the Committee of the House.

It was moved by *Professor Gamgee*, and seconded by *Mr. Harrison*—

“That a Committee of the Council be appointed to represent to Government the importance of modifying Part IV of the Diseased Cattle Act, to secure that the Cattle In-

spectors should be persons having the advantage of a regular veterinary education.”—Carried.

It was moved by *Mr. Silvester*, and seconded by *Mr. Braby*—

“That the Committee consist of the President, Messrs. Field, Mavor, Wilkinson, and the Secretary, with power to add to their number.”—Carried.

The Finance Committee reported that they had examined the vouchers and receipts of payment during the preceding quarter, which were found to be correct. The Committee also submitted the Quarterly Balance Sheet of the Treasurer’s Account, from which it appeared that the liabilities for the quarter ending April 1st amounted to £71 6s. 9d., which they recommend should be discharged.

It was moved by *Professor Gamgee*, and seconded by *Mr. Secker*—

“That the report from the Finance Committee be received and adopted.”

On the report of the Committee appointed for the alteration of Bye-law 21, it was resolved that the following notice of motion be suspended in the Board Room for three months:

“Each section of the Court of Examiners shall have a Chairman and a Secretary. The Chairman of each division of the Court shall be elected by and from amongst its members. The Secretaries shall be appointed by the Council.”

The Council also gave instructions that the two new Bye-Laws which had been confirmed should be now duly signed and sealed, in accordance with the provisions of the Charter.

Copies of the Bye-laws were also ordered to be printed.

The arrangements for the forthcoming annual meeting were considered, when

It was moved by *Professor Simonds*, and seconded by *Mr. Lawson*—

“That the same gentlemen constitute the Committee for preparing the Annual Report as last year, viz., the President, Messrs. Wilkinson, Harpley, Braby, and the Secretary.”—Carried.

It was moved by *Professor Simonds*, and seconded by *Mr. Hunt*—

“That Mr. Jas. Broad and Mr. J. R. Cox be appointed Auditors.”—Carried.

A discussion next ensued relative to the anniversary dinner.

It was moved by *Mr. Silvester*, and seconded by *Professor Gamgee*—

“That the London Tavern be selected.”—Carried.

It was also moved by *Mr. Hunt*, and seconded by *Mr. Broad*—

“That the Medical Examiners be invited to attend.”—Carried.

It was further moved by *Professor Simonds*, and seconded by *Professor Gamgee*—

“That the incidental expenses of invitation to the Medical Examiners be paid out of the funds of the College.”—Carried.

The following gentlemen agreed to constitute the Dinner Committee:—the President, Messrs. Braby, Harpley, Moon, Silvester, Wilkinson, Withers, and the Secretary.

Cheques were ordered to be drawn for the current expenses.

By order of the Council,
WILLIAM HENRY COATES,
Secretary.

SPECIAL MEETING OF THE COUNCIL, HELD APRIL 20, 1864.

PRESENT: The President, Professor Spooner, Messrs. Braby, Harrison, Moon, Pritchard, Wilkinson, Withers, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

Letters were read from the Medical Examiners regretting their inability to attend at the Anniversary Dinner.

The Dinner Committee reported to the following effect, viz.—That arrangements had been made for the Dinner to take place at the London Tavern precisely at 6 o'clock, p.m. Tickets £1. 1s. each, including Wine, &c.

A letter was read from Mr. Parsons, of Launceston, a practitioner of several years standing, who was desirous of becoming a candidate for the Diploma of the College, asking whether he could present himself for a practical examination only.

It was moved by *Mr. Pritchard*, and seconded by *Mr. Braby*—

“That the Secretary be instructed to write to Mr. Parsons, and inform him that Bye-laws No. 27 and 29 requiring the production of a certificate from one of the Schools could not be departed from.”—Carried.

A letter received from Mr. Jex, tendering his resignation as a Member of the Council, was next read.

It was moved by *Mr. Moon*, and seconded by *Mr. Braby*.

“That the Secretary be instructed to inform Mr. Jex that his resignation was accepted with much regret.”—Carried.

A letter was read which had been received from Mr. Holland, M.P., asking to be informed of the period of attendance which is required as constituting a regular Veterinary education, before a diploma is granted by the Royal College of Veterinary Surgeons, in order to the naming of such persons in the Bill now before Parliament for the prevention of diseases among cattle, as being only eligible as Inspectors at fairs and markets.

The Secretary informed the Council that he had supplied the information required.

A further discussion took place relative to the Bill now in Committee of the House on Cattle Diseases, when the Secretary was desired to obtain information from Professor Simonds with regard to the proceedings of the Committee, so as to provide for a deputation to wait upon Sir G. Grey or Mr. Bruce.

The Balance Sheet of the receipts and expenditure during the past year, as audited, was laid on the table; also the Annual Report of the Council, as prepared by the Committee.

The Report being amended, it was moved by the President—

“That it be received and adopted.”—Carried.

By order of the Council,

W. H. COATES,
Secretary.

NEW MEMBERS OF THE PROFESSION.

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons the following gentlemen passed their examinations, and were admitted members of the body corporate.

STUDENTS OF THE ROYAL VETERINARY COLLEGE, LONDON.

April 21st.

- Mr. W. F. H. Chattell . . . London.
 — Charles F. Phillips . . . London.
 — James M. Broad . . . Bath.
 — Frederick C. Boulter . . Plumstead, Kent.
 — Peter Ellis Liverpool.
 — Francis H. Ridler . . . London.
 — Robert S. Blee Truro, Cornwall.
 — Arthur New London.
 — John Milnes Gloucester.
 — John A. Rostron. . . . Bolton, Lancashire.
 — Richard Poyser Wirksworth, Derbyshire.
 — Bower Talbot. Whatton, Notts.

April 22nd.

- Henry Llewellyn . . . Tredegar, Monmouthshire.
 — Walter Thurston. . . . Fressingfield, Suffolk.
 — Henry Hogben Lyminge, Kent.
 — Edward Creswell . . . Hanbury, Bromsgrove.
 — John Simpson, jun.. . . Liverpool.
 — Thomas Tilsley Berriew, Montgomeryshire.
 — Thomas P. Hounsell . . London.
 — William Colbeck. . . . Barnsley, Yorkshire.
 — Robert Lineker Balderton, Newark.
 — James Taylor. Wix, Essex.

April 25th.

- Charles M. Rawlings . . Wells, Somersetshire.
 — Christopher Williamson Beaconsfield, Bucks.
 — John A. Polding. . . . Bury, Lancashire.
 — George Bourdass Bridlington.
 — Henry Hills Cambridge.
 — Charles E. Borman. . . Tetney, Lincolnshire.
 — William B. Edmonds . . Hounslow.
 — Thomas Rickaby. . . . Hungerford, Berks.
 — William H. A. Verney. . Stow-on-the-Wold, Gloucester.
 — William Walker King's Lynn.
 — Walter F. Russell . . . Princes, Risboro.
 — George F. Bolton Paris, Canada West.
 — Henry K. Shaw Sydenham, Kent.
 — Matthew Clarke Thorpe Market, Norfolk.
 — John P. Berry Northampton.

Veterinary Jurisprudence.

REDRUTH COUNTY COURT.—TUESDAY.

Before C. D. BEVAN, Esq.

A WARRANTY CASE.

THE following case was heard before a jury of five.

THOMAS *v.* ABRAHAM.

Mr. Paull (Paull and Linton) for plaintiff; Mr. H. Rogers for defendant.

The case opened for the plaintiff was that on the 8th of December, at Camborne, the plaintiff, a well-known horse-dealer, agreed to buy of the defendant, a farmer of Camborne, two horses for £40; the defendant warranting both to be sound and good workers, and the plaintiff paying £5 on account. The horses, though sold together, were separately priced at £23 and £17. About the hock of the lower-priced horse the plaintiff observed an appearance which he did not like, and specially called the defendant's attention to it, on which the defendant assured him it was all right—that the swollen appearance was only the result of a kick from another horse, and that he would warrant the leg to be sound. The horses were not delivered at the time of purchase, but remained in the possession of a Mr. Jewell until the completion of the transaction. Subsequently the defendant bought back the £23 horse (a mare) at that price, and the other horse was finally sold to plaintiff for £17 on the warranty stated, the plaintiff paying the balance of £12. The horse received by plaintiff was kept in his stables a few days, and then sold with a warranty to a Mr. Gundry, for a Mrs. Nicholls, for £20 certain and £2 extra in a month if the horse should turn out well. But the next day Gundry brought back the horse, and returned it in consequence of its being lame and unfit for use. Plaintiff then called in a veterinary surgeon, who examined the horse, and found that on the lame leg the cap of the hock had been knocked out of place. Plaintiff then sent back the horse to defendant, but defendant refused to take it back, and, thereupon, plaintiff had the horse sold by auction at Redruth, where it realised £9. The plaintiff now brought his action for the recovery of £8 difference, and £1 for keep of the horse.

There were examined in support of the plaintiff's case—the plaintiff himself; Mr. Bennett, a farmer, of Illogan; John Prout, a farmer, of Camborne; George Bray; Charles Gundry; and Mr. John Lewis, a veterinary surgeon.

Mr. Lewis stated that when requested to examine the horse he found it had an enlargement of the windpipe and a nasty cough; this was, however, only a temporary affection, though it might possibly become chronic and lead to unsoundness. He found the cap of the hock off, and beneath it there was inflammation, which interfered with the horse's action, and might cause lameness; and this latter ailment he should call unsoundness. The appearance of this ailment was such as he should say must have been observable to any horse-dealer or other person accustomed to horses. The detachment of the cap was not a cause of lameness; the

cause of lameness was the inflammation of the muscles underneath the cap.

In cross-examination, the witness said the injury to the hock might have been caused by a kick or by a twist of the leg, and might have been produced within a few days. It was not what he should call a chronic disease. The horse was in good condition, barring the cough.

Re-examined: From the appearance of the leg, he should say that the injury, which he considered unsoundness, had existed a week or fortnight.

The sale of the horse at Redruth for £9 was admitted.

Mr. Rogers, for the defence, addressed the jury, submitting that the plaintiff must fail even on his own case. There were four questions for their consideration:—1st, Was the horse unsound? 2nd, If so, was the unsoundness present at the time of the purchase? 3rd, Was there any warranty given in respect of this particular horse? 4th, Had there been any breach of warranty so as to justify the plaintiff in seeking to recover damages? Now, as a lawyer, he was prepared to contend that, even admitting the injury spoken of, the horse was not in point of law unsound; because it was laid down by Chief Justice Eyre that a merely temporary defect did not constitute unsoundness. To justify the charge of unsoundness there must be proof of chronic disease. The evidence of the veterinary surgeon showed that the swelling spoken to by Thomas might have been produced by a kick, and that the horse was not labouring under any unsoundness arising from any chronic disease or permanent injury. But if the jury should think the horse was unsound now, they must further be satisfied that it was unsound at the time of the purchase by Thomas; because between that date and the 4th of January, after which time the horse was first seen by Mr. Lewis, the horse might have received injury from various causes. And they had evidence only from Thomas that the horse was unsound at the time of purchase. But even admitting that the horse was unsound at the time of purchase, then he contended that Thomas knew of that unsoundness, and acted on that knowledge in making his bargain; and it had been laid down in *Margettson v. Wright* that if there was any defect to which the attention of a purchaser was called at the time of bargain, a general warranty of soundness could not be deemed to extend to that part. On the fourth point, Mr. Rogers stated that he should distinctly prove, by several respectable witnesses, that no warranty was given in respect to this horse, and that if any warranty at all was given by Abraham it applied only to the mare, which was sold to Thomas for £23, and afterwards repurchased at the same price by Abraham.

The witnesses adduced for the defence were—Thomas Abraham, the defendant; Thomas Eva and William Eva, butchers, of Camborne; and Thomas Holman.

The evidence on the two sides was of a very conflicting nature, especially on the question of warranty or no warranty.

In his reply, *Mr. Paull* said his learned friend's legal authority in support of his opinion that temporary lameness was not unsoundness was doubtless very good at the time when it was published; but in a book of undoubted authority he (Mr. Paull) found it laid down by Lord Ellenborough—"That an infirmity, as a temporary lameness, which renders a horse less fit for present use or convenience, though not of a permanent nature, and though removed after an action brought, is an unsoundness." It was also ruled that a cough, though not permanent, was an unsoundness. The learned advocate then addressed himself to the facts in evidence, contending that, as well from the probabilities of the case as from comparison of the witnesses, the jury must find for the plaintiff.

The learned *Judge*, in summing up, remarked on the seeming conflict in the quoted opinions of two eminent judges as to what constitutes unsoundness; and in the difficulty of deciding between such opinions, he advised the jury that it would be safe to rely on the general principle of law, that soundness in horses must be taken to imply the absence of such disease or seeds of disease as would impair the usefulness of an animal. Keeping that general principle in mind, he thought, would afford means of reconciling the apparent conflict in opinion between the two eminent judges cited. Because it might be that a horse might be afflicted by a complaint which might be only temporary, but which still would render it useless to the purchaser at the time of purchase; and it might be fairly said that if a horse were thus useless for months it might be considered as unsound. But, on the other hand, if a horse, sound in other respects, had received a kick, bite, or blow, the results of which were apparent, and which might be cured in a few days, or a week or two, the animal might be deemed sound. And the decision of this point, as affecting the present case, must be left to the practical common sense of the jury. The learned Judge carefully went through the evidence; after which

The Jury immediately returned a verdict for the defendant.

CHARD COUNTY COURT.

TOWN HALL, WEDNESDAY, MARCH 23RD, 1864.

Before His Honour C. SAUNDERS, Esq., Judge, and a Jury.

SCAB IN SHEEP.—IMPORTANT CASE.

GRABHAM *v.* O'BORNE.

Damages £50 for breach of warranty of twenty lambs bought by the plaintiff of the defendant, on the 17th of June last.

BOTH the plaintiff and the defendant are highly respectable farmers, residing in the neighbourhood of Ilminster, and the case excited great interest among the sheep-grazing farmers. The Court was crowded all the day, the case lasting from 11.30 until 1.20 on the following morning, at which late hour the Court was as full as it well could be.

Mr. Paull, of Ilminster, appeared for the plaintiff; Mr. Langworthy for the defendant.

Without commenting further, we lay before our readers the whole of the evidence in this important case.

Mr. Paull, after his opening speech to the jury, called

The plaintiff, *George Grabham*, who said: I live at Ashford Farm. On the 17th of June last I attended Taunton fair, and bought of defendant's bailiff twenty lambs at 25s. a head. There were two pens, twenty in each; I bought the best lot, warranted sound. Defendant came up afterwards, and I told him I had bought a score of the lambs, and that they were not fat enough to kill. I bought them for store. We parted, and soon after met again. I asked defendant whom I should pay, and he said I could pay him, but must be quick, as he was off to Bristol. We went into Clark's Hotel, and I there drew a cheque for £25, payable to his order. I said, "These lambs are sound, Mr. O'Borne?" He replied, "Oh, yes, they are all right." I said, "Then of course you won't object to sign the cheque; I never buy without a warrant." I had written the

words "warranted sound" on the back. The defendant said that when he commenced business he made it a rule never to warrant anything. I said, "Then I shan't have the lambs, that's certain." I closed up the cheque-book. "Well," he said, "you have bought the lambs;" and I replied, "I know I have; but I bought them with a warranty, and I'll have them with a warranty." He said, "They are sound enough; and as they are lambs I don't mind warranting them." "Very well, that's enough," I said. I paid the defendant the cheque. After I had written it I wrote on the back "twenty lambs, warranted sound," and put it towards him, and it remained a minute on the table. I told him if he would not take the cheque with those words upon it I would not have the lambs. The defendant took the cheque and folded it, and put it in his pocket, and went away. He did not indorse the cheque or obliterate the writing on the back in my presence. He did not take a pen in his hand at all. I went out to find some person to drive them home, and in consequence of something I heard I went in quest of Mr. O'Borne. I found him talking to Mr. Webber, and I put my hand on his shoulder and said, "I have heard you have had the scab, Mr. O'Borne, among your flock." He replied, "Oh, my dear fellow, I assure you it's nothing of the sort." "Well," I said, "if you have, I would not have the lambs home for £50." He said, "Oh, I don't know it's the scab: but they tell me it is. Mear has dressed a few of them, and I think it has caught one sheep a second time." He then added, in Mr. Webber's presence, "I warrant them sound and all right, and I'll make them sound and clean." He said, "Come and ask my man;" and I went towards the pen to him. Before I had time to speak he said, "Oh, Hill, Mr. Grabham has heard we have had the scab." Hill replied, "I don't know we have had the scab there." I said, "I don't know what to do about it, Mr. O'Borne; this is a very serious case." He said, "I have never had the scab in my life that I know of, and I tell you again they are all right, and I'll warrant them sound and clean." I then took the lambs home, and I kept them separately for some time; but afterwards they got mixed up with the rest of the flock. There were then ninety-eight altogether. During the fall I gave them corn up to November. In consequence of what my boy said to me in the latter part of November, I examined the lambs, and found something the matter. I did not know what it was. I had never seen the scab before, but I concluded it was that because it was one of Mr. O'Borne's lambs that was very bad. I at once sent for a veterinary surgeon, who sent me some dressing. In a few days, more became affected, and I then went to defendant and told him about it, and asked him what he was going to do. He said if I had let him know before, he would have taken them back and paid me for the keep. At last he agreed to come and see them. I said, "I must place the matter in the hands of my solicitor." The defendant did not come, and the next week, at the London Inn, Taunton, he said he had not had time. I saw him again in December, at Ilminster; he then said he should have nothing to do with it. I then consulted Mr. Paull. I caused the twenty lambs to be sold—they realised £30. They were so diseased they could not walk. I consider 25s. each was a sound price for them.

The witness then went into an explanation of the particulars of his claim, and declared that no unnecessary charge had been made, and that if he established his claim he would be a very great loser.

Mr. Langworthy cross-examined the witness at great length, but his testimony was not shaken.

Charles Plowman called: I am cashier at Stuckey's Bank, at Ilminster. Plaintiff keeps an account there. I produce this cheque. The words

“for twenty lambs warranted sound” are in much paler ink than the signature and obliteration.

Hull Webber, farmer, called: I was at Taunton fair on the 17th of June last. I was in conversation with the defendant. The plaintiff came up; he said, “Oh dear, Mr. O’Borne, I understand that your sheep have had the scab.” The defendant said, “Well, I know there has been something the matter with them, but did not know it was the scab, or what it was, but they are all sound now.” He said also that he had bought some sheep in, and they had brought something among his flock, but they were quite cured and sound now, and that he would make them all right. Plaintiff said he would not have them on his farm for £50, if they had any scab about them. The plaintiff had asked me to let them go home with my sheep, but I refused, because I had heard that they had the scab.

Cross-examined: I do not recollect Mure’s name being mentioned. Defendant said he had had a man to dress them. This was before dinner. No one has suggested to me what happened. I perfectly recollect it.

By the Court: I walked away, and left plaintiff and defendant talking. Plaintiff had asked me to let the lambs go with mine before he came up to Mr. O’Borne and myself.

Samuel Crabb, farmer, said: I was at Taunton fair on the 17th June last. I asked defendant’s bailiff to take back my sheep as far as Ashley. I had defendant’s permission. I saw plaintiff and defendant together. I had heard plaintiff say something before I saw him put his hand upon defendant’s shoulder. I heard plaintiff say, “If there is anything of that sort, I would not have the sheep upon any consideration.” Defendant said, “You need not be afraid of that, my dear fellow; I’ll warrant the sheep perfectly sound and clean.”

John Hill, farmer, said: I was near the last witness, and heard Mr. O’Borne warrant the sheep. I heard the words, “I warrant them sound and clean.”

Cross-examined: Mr. O’Borne was walking away from the pen. The plaintiff put his hand upon his shoulder and said, “If there is anything about these sheep, I shall not have them;” and defendant replied, “My dear fellow, I’ll warrant the sheep sound and clean.” I understood that my brother had previously sold the sheep. I saw the plaintiff and defendant at the pen together.

Frederick Bond, farmer, said: I keep a large flock of sheep. On the 25th of January last I was called upon to examine some sheep at plaintiff’s. About eighty or ninety seemed to be suffering from scab, more or less. Mr. James Paull accompanied me, for the purpose of assessing the damage sustained. The charge of 4*d.* per head is a fair charge for ordinary keep; 2*s.* per head for dressing and attendance is a very small charge. I consider the loss of wool to be 2*s.* 6*d.* a head; 5*s.* per bushel for peas and vetches is a fair charge. The remaining sum of £12 7*s.* 2*d.* charged in the particulars would not compensate for other loss.

Cross-examined: The lambs would be worth 37*s.* or 38*s.* in January, if they had been free from disease. They ought to be worth 45*s.* per head by this time.

James Ware Paull, yeoman: I estimated the loss upon the eighty or ninety sheep in consequence of the disease, and consider it is much under the mark.

Cross-examined: The sheep ought to be worth 50*s.* a-piece, supposing they were free from scab. I examined the sheep in company with Mr. Bond and the plaintiff. We were about two hours engaged. I reckon that the loss of wool was fully 2*s.* 6*d.* a head. I should say some had lost three pounds, and were nearly naked.

John Hellier said: Last spring I was in defendant's house, and I looked through his flock with him. I told Mr. O'Borne his sheep had the scab. He said he was not aware of it; some of them had "*the worms*," and some stuff had been put about them to cure them. I told him then it was the scab, and recommended him a man to cure it. I said I would send him a man, and did so at his request. I remember having 300 ewes affected with the scab one year; in January and in February they lambed down. The lambs did not break out till six months afterwards. If the ewes suffer from disease, the lambs must have it. I should think the loss was 15s. a head.

Cross-examined: We supposed the ewes cured before they lambed. The disease is in the system, and the lamb inherits it from the mother. There were only three bad at the time I saw them, and I recommended the defendant to put one by itself—it was almost naked.

Re-examined: It is in the blood, not derived from sucking the mother.

Edward Mear, dealer and jobber: I have cured the scab in sheep. Last spring I went to the defendant's house. Mr. Hellier sent me. I examined defendant's sheep. I found they had the scab very badly. About eighty were so affected. They had then about ten lambs. I dressed the sheep for six weeks or more. Just before Taunton fair I went there, and defendant was picking out the lambs to show them to Mr. Brown, the butcher. He said he was going to sell them as fat lambs. I told him that they had some spots of scab upon them. I caught one and showed it him. I recommended him to sell them as fat lambs, as the meat would not be fit for food if I dressed them. There was a little rig sheep which I dressed, and I afterwards dressed the same sheep at the plaintiff's. In December I was sent for to dress some sheep for the plaintiff. I agreed to cure them at 1s. a head. The other score lambs sold to Mr. Perrin appear to have been dressed.

Cross-examined: It was just before the lambs went to Taunton fair that I dressed the little rig sheep in defendant's presence, and when I saw it in December it was all over spots.

William Emms, veterinary surgeon, proved being sent for on the 1st of December by the plaintiff, and dressing some scabbed sheep. The disease is contagious, but does not come in a lamb from having been dropped from a diseased ewe. *The cause may exist in June, and not appear until December.* It is quite necessary to have all gates and farm material washed and cleansed after having affected sheep upon it.

Charles William Blake, veterinary surgeon, said: I obtained a prize at the Royal Veterinary College for a work on cutaneous diseases. Scab is both unsoundness and uncleanness. It is highly contagious. The disease is caused by mites in the skin. *The mites may be in the animal in the month of May, and the disease not appear until December.* One dressing is not sufficient to cure. You may kill the insect, but not destroy its ova by one dressing.

John Jeffery, farmer, proved buying some sheep in May, and their having the scab break out in October.

William Goodland, butcher, proved buying seven lambs of defendant in July last, and re-selling the same to Mr. House, of Stoke St. Gregory. They had scab in them, and I was threatened with an action, and made it up by paying Mr. House £5. I shall ask defendant for its repayment.

Mr. Francis Jennings proved selling the plaintiff, during the past year, twenty-four lambs; Mr. Matthew Lang, fifty; Mr. Christopher Born, twenty-four; Mr. David Symes, thirty-two; and William Harris, two.

All these gentlemen deposed to their being sound, and added they had never had the scab upon their farms.

Mr. Langworthy, in addressing the jury for the defence, contended, first, that there was no warranty; secondly, that there was no disease at the time of sale.

Benjamin Norton, farmer and dealer, said: I bought twenty-seven lambs of defendant on the 27th of May last. I had no warranty. I saw another pen of twenty or thirty more. I sold them to a butcher a day or two afterwards. Never heard they had anything the matter with them. I did not notice any disease.

Cross-examined: I would not swear that they had been dressed for scab.

Simeon Hill, the defendant's bailiff, said: Last Taunton fair I took forty lambs there for sale. Before I got them out of the waggon the plaintiff came up. He bid me money for them before I had them penned. They were afterwards put into two separate pens. I gave him a price for the lambs—27s. a head. He offered 24s., and I sold them to him for 25s. I gave him no warranty, and he did not ask me for one. We both went into the fair. The plaintiff bid me money for the other twenty, but I refused his bid. We went into the inn and had a glass of beer each. When we came out my master was standing against the pen. The plaintiff came and asked me if there was any doubt about the lambs. I told him I did not know. He then said if there was he would keep them by themselves, and I said that would be the best plan. Mr. O'Bone said nothing. After that, plaintiff came back and looked at the lambs, and went into the pen, and he then said he would take them back with him in the same waggon they came in. I heard my master say he might go in and look at the lambs, and take or leave them as he liked. I was not present when the lambs were paid for. Nothing was said about a cheque in my presence, and master and plaintiff went away. In about a quarter of an hour plaintiff came back and told me to take the lambs up and carry them back. The other twenty were sold to Mr. Perring. I have heard nothing of them since. I went to live with my master in June. The ewes and lambs were there then, and I never saw a spot or blemish about them. I told Mr. Grabham so at the fair. He offered to pay me for them, and I said, "Mr. O'Bone is here, and you can pay him." It was some time after the sheep were sold that there was a talk about the scab, and after the offer to pay me.

Cross-examined by Mr. Paull: I saw Mr. Mear at the fair, but had no talk with him. Never said to him that I only warranted their livers sound. He did not say to me that it was a shame to take in a neighbour so. I was at the auction at Taunton where the sheep were sold. They were bought by Mr. Brown and my master.

This witness gave evidence in a very confused manner, and his statements and contradictions caused much laughter. He seemed to be the worse for liquor, and no one could understand anything he said.

Harry Charles O'Bone, the defendant, sworn, said: On the 17th June I sent forty lambs to Taunton fair. I found Hill there with them when I got there, and in about ten minutes I saw the plaintiff. I asked my bailiff if he had sold the lambs, and he said, "Yes, sir." He told me he had sold the twenty fat lambs to the plaintiff, whereupon Mr. Grabham smiled and said, "I have bought them much too dear." He then walked away, and in about ten minutes came back and asked if I had sold those in the other pen. I said, "No." He offered me a guinea a head, and I told him Mr. Bradley had offered 22s. for them. He replied, "You had better let Bradley have the lambs; he has offered you a good price." Mr. Perring then bought them for 22s. 6d. I afterwards saw the plaintiff and my bailiff. They seemed to be in serious consideration. Mr. Grabham said, "Oh, dear, this is a bad job. I hear you have the scab up

there." I said, "Yes, more or less; but they have all been dressed, and Mear has warranted them cured." He then asked me if the lambs had had it, and I told him no. I called to my bailiff and told him to tell Mr. Grabham all he knew about the lambs. Hill told him that they had no spot about them, and had not been dressed for the scab. Mr. Grabham said, "Well, I don't know what to do about the lambs; it is a serious thing; I should not like to take them if I thought they had the scab." I told him he had better get over and examine them for himself, and he did so, and then came to me and said he would risk them. He said, "Whom shall I pay?" and I replied he could pay me, but that he must be quick, as I wanted to catch the express to Bristol. We then went into the Castle Hotel. He took out his cheque-book and handed me this cheque, and I observed the words "warranted sound." I said, "What does this mean?" and he replied, "It is usual to write 'warranted sound' when buying sheep." I said, "Then I must strike it out, as I do not warrant everything; I never do," turning to Mr. Baker, who was in the room. Mr. Baker smiled, and said, "That is the right way." I then folded up the cheque, and put it in my pocket. Prior to folding it I struck out the words "warranted sound." Grabham was sitting close by and smiling all the time. He then made some kind of grimace, shrugged his shoulders, and we parted. There were two bottles in one inkstand; I cannot say which I dipped in, or whether there were wafers in one. I indorsed the cheque at the same time; I believe I wrote with a steel pen. I had seventy-six ewes, and did not know there was anything the matter with them until Mr. Hellier told me in February. Mear came a day or two after and dressed them. He did not dress any lambs for me, to my knowledge. I sheared my ewes in June, and found they were all right. I remember the plaintiff coming to my house about the lambs early in December, and was surprised to hear that the lambs had the scab. I told him he must have bought other sheep, and thus infected his flock. He wished me to come and see them, and I said I was too busy then, but would call in the course of a few days. He said, "Very well; I do not wish to go to law; I shall be glad to see you." I saw him twice after that, and the last time was in January, when I told him I should have nothing to do with the lambs, and he said he was prepared to spend a large sum about it, and I said I was equally prepared.

Cross-examined: I do not recollect if Mr. Webber was talking to me at Taunton fair when Mr. Grabham came up and said, "Oh! here's a pretty job about this scab." I will swear that I did not say that I had had something the matter with my flock. I said I had had the scab. I did not say as Mr. Webber has sworn. I deny what Mr. Crabbe has sworn, and also what Hill has sworn. I never warranted them. I obliterated the words "warranted sound" on the cheque, and wrote my name in Mr. Grabham's presence.

George Grabham, the defendant's carter, said: I assisted to take the lambs to Taunton. The plaintiff came up and looked over the lambs at the pen, and helped to get them out. I saw him get into the pen and handle the lambs, and after he got out he said, "I'll take them."

James Mead, stable-boy, said: I remember going to Taunton fair, and seeing my master and Mr. Grabham at the pen. I remember the plaintiff asking master if the lambs had the scab. Master said the lambs might not have it if the ewes had. I saw defendant get into the pen, and when he got out he said, "I'll take them and risk them."

William Baker, farmer, said: I remember being at Taunton fair, and seeing the plaintiff and defendant at Clarke's Hotel, in the Market-room.

I heard Mr. O'Borne say he did not warrant anything. He turned round to me and added, "I never did."

In cross-examination this witness admitted buying some ewes of Mr. O'Borne about last apple-fall, and, hearing they had the scab, sold them, after dipping them.

Re-examined: Defendant told me they had the scab.

Thomas Howard, farmer, said: I went to the plaintiff's on the 10th February last, and looked over his flock. Seven or eight had lost wool. I have been accustomed to treat sheep having the scab. I should not think the loss of wool would be 1s. a head. I would have attended them and cured them for 1s. a head. The extra food charged would be proper for common feeding. The sheep would be thrown back about 2s. per head for having the scab. I have known it not much injury to them when properly treated. I should think that the seventy-five or seventy-six I looked at are worth two guineas a head now.

Richard Coleman, farmer, Cricket Malherbie, said: I keep a large flock of sheep, and have had the scab among them. It is easily cured. I cured the whole flock once in a month. Some of the ewes we kept, and lambed them, and nothing was the matter with them afterwards. I went with the last witness to Mr. Grabhams', and examined the sheep in question. Some of them have lost wool. I should say about 1 lb. average. One shilling a head would be a fair allowance for loss of wool. I never knew an instance of scab lying dormant for three months. I have seen the twenty bought at the sale, and have dipped and cured them. I had some conversation with Mr. Grabham about the cheque paid, and he said, "If Mr. O'Borne struck out the words, I did not see him." I asked him about the £7 12s. 2d., and he said it was to make up the £50. He did not expect to get it all.

James Collis, dealer and auctioneer, corroborated the previous witnesses as to loss of wool and deterioration in value of the sheep, and added that "he would be glad to buy any number of scabbed sheep at 2s. a head less than market price; he could cure them for about 17s. per 100.

Thomas Symes and *Joseph Redwood*, veterinary surgeons, were then called, and said that scab was easily cured. *Neither of them agreed with Mr. Emms and Mr. Blake, that the disease of scab could be dormant for so long a time, as stated by the plaintiff's witnesses.*

Mr. Langworthy now addressed the jury upon the whole of the evidence, and submitted that his client was entitled to their verdict.

Mr. Paull replied.

His Honour's summing up was rather elaborate, occupying more than one hour.

The jury then retired, and after a few minutes' absence returned into Court with a verdict for the plaintiff, damages £40.—*Sherborne Journal*.

OBITUARY.

Mr. Philip Hempson, May Fair, London. His diploma bears date May 24th, 1855.

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Communications and Cases.

FRACTURE OF THE SESAMOID BONES OF THE
OFF FORE-LEG OF A HORSE WITH LUXA-
TION OF THE FETLOCK JOINT.

By Professor VARNELL.

IN the month of April, 1864, I had sent to me a specimen of fracture of the *sesamoid* bones of the off fore-leg of an aged thorough-bred horse, complicated with luxation of the fetlock joint. Two cases only of this description have before come under my notice, and I am inclined to think, without making especial reference to our various veterinary authors, that very few instances of the kind have been recorded. For this reason I am the more indebted to Mr. Blakeway for the trouble he has taken in sending the specimen, and also for the history of the case as contained in the following letter.

STOURBRIDGE, *April 21st*, 1864.

DEAR SIR,—I met with, to me, rather a rare case this week, which I will relate, and then you will judge for yourself. On Tuesday last I was sent for to our race-course, about one mile from town, to see an aged thorough-bred gelding that had “broken down” while taking a gallop, he having to run at Kidderminster steeple-chase on the following Tuesday. I found he had dislocated the off fore fetlock joint. The condyloid extremity of the large metacarpal bone appeared to be resting on the sesamoid bones. I advised that he should be destroyed, which was done immediately. Upon examining the leg at my leisure, I found the suspensory ligament completely ruptured. A small portion also of the superior part of both sesamoid bones was broken off. The ligaments of the joint were completely torn asunder, and the large metacarpal bone

was resting against the flexor tendons and on the broken surface of the sesamoid bones. There was a good deal of extravasated blood around the joint.

I may add that the horse was galloping on a perfectly level course, and nothing could be seen as being likely to have caused the accident. He had been previously fired on both fore legs, and during the last season he had gone a little stale on them.

I send the bones, &c., for your examination.

I am, &c.,

F. BLAKEWAY.

To G. W. VARNELL, Esq.

I found the bones to be fractured in a transverse direction, a little above their middle; and, in addition, I noticed that the upper part of the inner one was broken into three or four pieces. The capsular ligament was much torn, and the outer branch of the superior sesamoidal ligament was also lacerated. The inner branch, however, had not suffered from recent injury, but was much thickened from previous disease evidently of long standing. In attempting to elucidate the most prominent features of this case, it will be necessary to discuss two or three points. In the first place it may be asked, what was the immediate cause of the fracture? Did it take place from over-tension, or from a blow produced by the hind foot during the act of progression? Upon reflection, I think the former was the most probable cause. The flexor tendons and common integument would prevent, to some extent, sufficient force being applied to the bones in question to cause fracture. If, then, it occurred, as I think it did, from over-tension, it may again be asked, if there were any predisposing causes favorable to such a lesion? I am inclined to think there were, as the fractured bones did not appear to be so compact as these bones are usually found—their structure seemed more spongy and fragile—at least such was my impression. This being the case, I think we may fairly admit that they were incapable of resisting the same amount of force which they would have done had their structure been of normal density and toughness. Bones are tough, by virtue of the animal matter they contain; and hard, through the earthy material in their composition. Let there be a deficiency of either of these normal constituents, and they become liable to be injured, through the common physical forces they are exposed to. I may next observe, that the superior sesamoidal ligament was diseased to a great extent. The outer branch was partially torn through, while the inner was much thickened from disease of long standing. This ligament, in its normal condition, yields more than ordinary ligamentous tissue when weight is thrown upon it, and it contains in its structure a

ference to the history of the case, and received the following reply:—

MARKET DRAYTON; *April 26, 1864.*

MY DEAR SIR,—Having made further inquiries into the case of the cow, I regret to say I am unable to add anything of importance to the particulars which you are already in possession of. Her owner, Mr. Minor, has, since my last communication to you, informed me that he bought her at the public auction mart in this town last year, and that she was then in fair condition, and had a *calf* by her side. She did not make *red water* until *two* weeks after the purchase. She milked well all the season.

Mr. M. is unable to say whose property the cow was before coming into his possession, which is very unfortunate, as I cannot, in the absence of this information, trace her previous history. From the fact of her having brought a *living calf*—supposing the one she had sucking her to be her *genuine offspring*—I should infer that her parturition had not been very difficult or attended with violence, and I am strengthened in this supposition by the circumstance of her being exposed for sale at public auction within a short period—say a fortnight—after this event had occurred.

She was of the breed common to this and the adjoining counties of Staffordshire and Cheshire, *i. e.*, a crossed short-horn. In some dairies you will find nearly pure shorthorns, while in others you have only a third or fourth strain.

I am sorry the whole history of the case is so meagre and unsatisfactory, more especially as the case possesses features of no uncommon interest. I feel gratified that I may have contributed in a degree, however slight, to the pleasure I know you always take in these investigations.

Yours, &c.

OBSERVATIONS BY PROFESSOR VARNELL.

I may premise my remarks by stating that I examined the parts referred to with more than usual interest, as I felt that the details of the case had an important bearing, whether considered medically or legally.

The case was supposed to have been one of "*red water*" by those who had the charge of the cow previous to Mr. Kettle seeing her, simply from the fact of her urine being of a reddish colour. This gentleman, however, as will be seen,

was of a different opinion ; and believed the altered character of the urine to be due to organic disease of the bladder, which, upon the *post-mortem* examination, proved to be the case.

Two of the symptoms presented in this case are especially worthy of consideration in studying its pathology, viz., the capability of the fluid which imparted the red colour to the urine to coagulate, showing clearly it was unspoilt blood ; and secondly, the very small quantity of urine which was passed at a time, especially during the later stages of the disease. The last-named symptom would indicate that a mechanical impediment to the passage of the urine through the urethral canal probably existed, and such an obstruction was found to exist. In a practical point of view, the case is therefore especially valuable to the junior practitioner, as it shows that in all instances in which the urine is of a reddish colour the malady is not of necessity ordinary "*red water*," or to borrow a more scientific term, "*Hæmo-albuminuria*." To the physiologist also, as well as to the pathologist, the case is interesting, for we see that the cow had shown symptoms indicative of organic disease for a period of no less than twelve months ; and yet during this time she had a calf and yielded a fair quantity of milk. These facts prove that the cause of the urine being high-coloured, whatever it might be, was at any rate not incompatible with conception, gestation, and lactation ; and they may also be considered as additional reasons for believing the case was not one of common "*red water*."

In a legal point of view, as I have before stated, the case has its significance. That the cow was sound at the time she was sold to her last owner admits of great doubt, as it is said that she passed red-coloured urine a short time after she was purchased by him. This abnormal state of things I think very likely depended upon some lesion produced at the time she gave birth to her first calf, which led to the formation of the tumour described by Mr. Kettle, and from which blood, varying in quantity, passed into the bladder, and thereby coloured the urine.

I do not make these statements with a view to induce the late owner of the cow to seek for damages, or to lead him to suppose that he would be right in doing so, but rather to show that the case has a legal bearing, and that if the cow had been represented as a sound one a claim could have been made for damages. These brief suggestions may strike the mind of the junior practitioner as being of some importance. He will see that in a practical point of view it is necessary to

ascertain the true character of the urine when called upon to treat similar cases. Such a procedure will materially aid him, not only in forming a correct *diagnosis* and *prognosis*, but also to speak with some degree of confidence should he be called into the witness-box to give evidence, or have to take part in arbitrations on such matters. The province of the veterinary surgeon is wider than many suppose it to be, and it might be, with great advantage to the public, much more extended.

I will now describe the morbid changes that had taken place in the organs sent by Mr. Kettle, which consisted of the bladder with the urethra, the ureters, kidneys, and a portion of the vagina, together with a large mass of abnormal deposit situated between the upper surface of the urethra and neck of the bladder, and the under surface of a portion of the vagina, and more or less encircling the whole of these parts. This adventitious growth, which was a little flattened on its upper and under surfaces, formed a tumour of the size of a small child's head. The bladder was greatly increased in size, its coats were thickened, and like the tumour it was of a dirty purple colour, which probably depended upon the tissue being stained by effused blood. On laying the bladder open from one end to the other, exit was given to a large quantity of thick blood-coloured urine and clots of coagulated blood. This fluid was carefully examined, as was also the surface of the much thickened mucous membrane, with a view to ascertain if any calcareous deposit existed, but I could not discover a trace of any. The mucous membrane itself was of a dark colour, approaching to black, especially towards the neck of the organ, into which the tumour projected for a considerable distance. Here the surface of the tumour was uneven, the blood-vessels were enlarged, and many of them had given way, thus allowing the blood to escape into the bladder.

A section was next made through the tumour, in a line with the urethral canal, so as to expose the whole of its structure. The centre of the mass was composed of dense fibrous tissue; the outer part was less dense, and seemed to be made up partly of the same material, but to a larger extent of blood-vessels, fibrelized lymph, and coagulated blood. The central part was likewise of a dirty white colour, gradually approaching to a darker hue towards the outer surface, particularly at that part which was within the bladder itself. I examined different parts of the diseased mass with the microscope, but was unable to discover that it was composed of anything more than a simple fibro-vascular

tissue. The walls of the urethral canal were very much thickened, and its interior almost closed, which will account for the gradual diminution of the quantity of urine passed at a time during the latter stages of the disease.

Such is a brief outline of the examination made by me of the morbid parts, and taking a retrospective view of the case, I am inclined to think, as before stated, that the injury done to the bladder, which eventually gave rise to the tumour, took place during the act of parturition with her first calf, and although the nature of the disease did not prevent a second conception, nor interfere with gestation, still it gradually impaired her health to an extent to render it necessary for her to be destroyed. It is probable that during the second *calving*, which took place about two weeks before Mr. Kettle was called in to see her, additional exciting causes came into operation, which resulted in a rapid increase in the size of the tumour. The hæmorrhage was now greater, and the urethral canal became very nearly closed—changes which will account for the symptoms observed in the latter period of the animal's life. The kidneys and ureters were free from structural disease.

CASE OF OPEN HOCK-JOINT.

By E. C. DRAY, M.R.C.V.S., President of the
Yorkshire V. M. A., Leeds.

A ROAN draught gelding, belonging to a railway company, whilst shunting, was thrown down on the rails, and severely injured the near hock, on the inner side. At my first examination I was afraid there was a fracture of some of the bones; the limb was pendulous, and a quantity of blood, mingled with synovia, flowed from a small wound. I directed the hock to be constantly fomented with warm water during the day, and a linseed meal poultice to be applied at night, until the inflammation and tumefaction of the injured parts had subsided. The animal was then put in slings, for he could not place his foot to the ground. The discharge of synovia was excessive.

The managers of the company wished the horse to be destroyed, but I begged permission to try what further and bolder treatment might effect. This being granted, the Tin. Ferri Mur. was injected into the wound twice a day, and to

variable amount of contractile tissue, which is not the case with articular ligaments. The two functions possessed by this ligament, although very slight, yet if destroyed even to a small extent by disease, would predispose to such lesions as were observed in the bones above alluded to. And such may have been the predisposing or remote causes.

We have next to take into consideration the immediate cause, or even causes—for I can suppose there may have been more than one—in operation. At any rate, one cause is obvious enough, and cannot be questioned, viz., the exertion the horse was put to. Added to this, and which is decidedly more direct, is the probability of his having made what is sometimes termed “a false step,” or an unconscious movement, whereby the whole weight would be suddenly thrown upon the bones and ligaments, which, if impaired by disease, would under such circumstances be very likely to give way. Such seems to me to be an explanation, imperfect though it is, of the cause of the fracture of the sesamoid bones in this particular instance.

CASE OF FIBRO-VASCULAR TUMOUR IN THE BLADDER OF A COW.

By BAMFIELD KETTLE, M.R.C.V.S., Market Drayton.

Believing that you take a strong interest in morbid anatomy, I forwarded to you by train, a day or two since, the kidneys and bladder of a cow, promising that very shortly I would furnish you with the history of the case. This I now do, but I fear you will find it too brief and imperfect.

The cow in question was the property of Mr. G. Minor, of Morton Hall, four miles from this town. My pupil, Mr. E. Meek, saw her for the first time on Friday, the 19th March, when her owner informed him that she had been bad from the time she came into his possession, twelve months since, and that during this somewhat protracted period she had been constantly passing “*red water*,” and that, believing her to be suffering from this disease, he had exhausted his medical knowledge in attempting to arrest its progress by trying everything he himself knew, or had heard recommended, without, however, succeeding. She had calved about a fortnight prior to the visit of my pupil, and up to

that time her appetite had been good. He found her exhibiting the following symptoms: pulse very feeble and quick, mucous membranes blanched, appetite lost, eyes sunken, and breathing accelerated. At times she would stretch herself as if in pain; she was also very much emaciated. My pupil prescribed two doses of tonic laxative medicine, and ordered plenty of gruel to be given her.

22nd March.—On visiting the animal to-day, I found that the symptoms were much aggravated. She is now nearly pulseless, and in addition her back is arched, and she is almost constantly straining and passing a small quantity—fifteen or twenty drops—of pale, blood-coloured urine, which stains the straw as it falls. Her breath is foetid; respiration is accompanied with a grunt, and she is so feeble as scarcely to be able to stand. From the hopeless state of the case, I ordered her to be slaughtered.—*Diagnosis*, chronic disease of the bladder.

March 23.—Autopsy. On opening the chest I found the lungs emphysematous and much enlarged, with here and there deep-seated spots of sub-acute inflammation. The right lung was adherent to the ribs. On opening the abdomen the liver was found to be pale, hard, and tough, with here and there large, irregular patches of a dirty yellow colour, even harder and tougher than the other portions of the organ. The bladder was enormously diseased and distended with urine, and fearing it might rupture and thus cause the loss of the fluid, I punctured the fundus, as you will perceive, in order to send you some of its contents.

There is, you will discover, an enormous substance near the neck of the bladder, at its inferior portion, from the inner surface of which the blood, I conceive, must have escaped. It appears to me, from the imperfect glimpse I could get from the hole in the fundus, that the tumour was coated with a thin layer of calcareous deposit. For fear of lessening, however, your interest in this somewhat unusual specimen of disease, I have not cut into the bladder, and am therefore not in a position to do more than hazard an opinion that the tumour may prove to be of a cancerous nature. The fluid sent represents rather the *sediment* of the urine, so to speak, than that which was voided when the animal was alive, which at that period was of a sero-sanguineous character.

I am, &c.,

To Professor VARNELL.

On receipt of the above letter, I wrote to Mr. Kettle to ask him if he could get any additional information in re-

mon fairness, such an animal should have a very distinct specification of the nature of his malady sent with him, rather than the general one of his unsoundness. Many horses examined at the present would prove to be whistlers, and perhaps very decided ones, that in a fortnight's time would bear the severest tests satisfactorily; and the two certificates from different examiners would relate opposite stories. It is a question for the profession to consider, whether the neglect of proper precaution; the too rigid adherence to the mere certification of unsoundness does not often lead to a difference in expression of opinion that should not and would not exist if the two opposing examiners were *both* present at each examination.

It is commonly advanced as a reproach to the profession, that a horse may be sent to one qualified man and returned unsound, as a roarer; and shortly afterwards certified by another, equally capable, to be perfectly free from such defect. Each man will vigorously defend his own opinion, and solace himself with the belief that his opponent has made a mistake, accepting the triumph of his case as a compliment to his superior sagacity, forgetting that he loses, as a member of the profession, more than he gains as an individual. Such discrepancies are most unfortunate in their effects upon the public. Instead of dogmatically adhering to his own opinion, founded upon evidence presented at one time, it would better become each member to reflect that the opposite view might be equally inevitable upon evidence present at another period, and the public would not be so far justified as they are now in the assertion, so often uttered, that if six men are found to swear to a horse's unsoundness, there is no difficulty in finding six more to solemnly aver that he is free from every defect.

Recent disease may lead to permanent deposits in the respiratory organs, and occasion confirmed roaring or whistling, unfortunately very often consequent upon attacks of catarrh, bronchitis, and pneumonia in young horses. While the symptoms indicate that the disease is still acute, there is a possibility of successful treatment, and it cannot, under such circumstances, be proper to give an opinion implying permanent unsoundness, when it may happen that the defect will altogether have ceased to exist in a few days' time.

It is not contended that any doubt can be raised as to the present unsoundness, only that there should be some distinction made between cases that certainly differ in some very essential particulars.

(To be continued.)

THE SHOEING OF OUR CAVALRY HORSES.

By GEORGE FLEMING, F.R.G.S., F.A.S.L., and V.S. King's Own Hussars.

I, and I am nearly certain, all the army veterinary surgeons would esteem it a great boon if you would, with your usual courtesy, give insertion to the following remarks, which have reference to a matter of great importance, not only as affecting their professional reputation in this country and on the continent, but as seriously implicating their ability and desire—as it is their duty—to maintain the welfare and efficiency of the British army, so far as the very responsible charge imposed upon them is concerned.

In what is intended to be a popular work, now publishing in shilling parts, and entitled 'Our Domestic Animals in Health and Disease,' the author while treating on the art of shoeing, has felt himself impelled—no doubt with the best motives, and with a patriotic desire to be the exposé of what he may consider a national calamity—to use the following remarkable expressions. In criticising the late Professor Coleman's ideas about the foot of the horse, and the baneful effects of his system of shoeing, he goes on to decry the influence by which that gentleman managed to introduce all his suggestions into the army, and says: "Effects followed causes. The good part of Mr. Coleman's teaching stood the test of time, and now, when it can be shown that the health of our cavalry horses is greatly improved, compared to old times, lameness prevails undiminished, so much so, that we never witness a sale of cast-off military horses that is not composed, to the extent of about two thirds of the whole number, of lame horses, mostly preventible cases, and many of them curable by the simple application of a better system of shoeing than now prevails in the service."

"The army affords the best means for training men up to the highest standard that distinguishes individuals, but in horse-shoeing the reverse has been the case; it has actually afforded a field in which inexperienced men have tried their hands, set at nought whatever was sound of old, and brought their pernicious schemes to bear their fruits."

Now it is difficult to make oneself believe that the man who writes in these terms of a most important department of our army can be really sincere. Certainly, to those who know how this most essential division of the army veterinary

the surface was frequently applied a powder consisting of Lapis Calimnaris, Resina Flav. et Bol Armen., until the synovia became thickened and less profuse. I then substituted Sol. Zinci Fort. for the Tinc. Ferri Mur.; and I am happy to say my efforts were at last crowned with success. The horse is now removed from the slings, the escape of synovia has ceased, and he can not only bear his whole weight upon the injured leg, but walks very little lame. I have no doubt, after the application of an iodine blister, the usefulness of the animal will be unimpaired.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor BROWN, M.R.C.V.S., London.

(Continued from p. 216.)

THE VARIOUS NOISES PRODUCED DURING RESPIRATION UNDER DIFFERENT CIRCUMSTANCES.

No attempt has ever been made to convey by words an idea of the sounds naturally resulting from the inhalation and exhalation of the air while the respiratory organs are in a healthy condition. That a certain sound accompanies the act, and that during respiration under exertion that sound amounts to a very decided noise, is a fact perfectly familiar to every one, but the absence of any artificial sound of a like character with which to compare it, renders it impossible to employ a term which would indicate it with any approach to exactness.

Alterations in the character of the respiratory sounds resulting from disease are no sooner apparent, than we are at once in a position to designate the tone produced in a manner calculated to convey to the mind a very positive idea of its nature; thus, "grunting," "whistling," and "roaring," three most common expressions among horsemen, are so absolutely descriptive of actual sounds, that any one would comprehend their force, without knowing or thinking anything of their application.

Other expressions of a less definite signification are used to indicate peculiar modifications of sound—as high-blowing, piping, and fluttering. None of the terms are remarkable

for their elegance, some of them the professional man would hardly care to introduce in writing his certificate, but, unfortunately, there is no remedy. A general expression, signifying unnatural noise in breathing, might be compounded from the classics, and would have the advantage of a sonorous victory over the vulgar words whose places it would usurp, but it is much to be feared that the public would not be satisfied with the innovation. To state to the expectant owner of the horse under examination that the respiration was cacophonous might excite in his mind grave apprehensions for his animal's life, or even originate a doubt of the examiner's sanity at the time, according to the mental calibre of the individual who sought the opinion, but it certainly would not suggest to him whether the horse was a whistler or roarer.

With some members of the profession it has been a question whether the employment of one term—for example, "roaring"—as the least objectionable of any, would not suffice to indicate an unhealthy sound, without further specification. Practically, this would not succeed, because every one possessing an animal so affected is anxious to know the exact degree of the noise produced, whether whistling or roaring, and, above all, whether the horse "grunts." In spite, therefore, of the technical objections to the use of the ordinary terms, it is impossible to substitute for them others which might better suit the educated taste; the words are appreciated by the people to whom, in the nature of things, they are most commonly addressed, and the attempt to banish them would only lead to hopeless confusion.

Difference of opinion, so frequent among scientific men upon all questions, would seem hardly possible in a case of roaring or whistling, or any of the unnatural noises occasioned by certain conditions of the breathing organs; but as if to prove beyond all doubt the truth of the adage, "doctors differ," we meet with instances of competent judges arriving at different conclusions, not only respecting the nature of the noise, but as to its existence. When the sound is very slight, it is easy to understand how a very delicate ear may detect what may altogether escape a less sensitive one. Again, the noise may be audible only when the animal is moving at a certain rate; its cause may be temporary, and hence, although distinguishable at one time, it may not exist at all at another. A careful consideration of the peculiarities observed in particular cases may suggest a reasonable explanation of the differences of opinion that undoubtedly exist, and, at the

same time, show the necessity of extreme caution in arriving at a decided conclusion.

The tubes of the respiratory organs, during the passage of the air to and from them, are precisely in the position of the pipes of an organ, through which wind is driven by a certain mechanical arrangement; the sounds produced depend upon the calibre of the tubes, and also upon the character of the internal surface, any irregularity or flaw leading to an alteration in the tone. In whatever part of the length of the pipe the sound is originally produced, it always seems to occur at the point of exit; so in the case of a roarer or whistler, the noise is apparently in the nostrils, even though its origin should be in the bronchial tubes; this circumstance renders it impossible to decide upon the situation of the disturbing cause, even when the noise is most apparent, and prevents the application of remedies which might be effective in many cases could the exact situation of the disease be discovered.

Numerous causes may at various times operate in the production of roaring or whistling. Anything interfering with the size of the tubes, any disturbance of the position of the cartilages of the larynx or trachea, deposits upon the mucous membrane in any part of its course, pressure from accidental tumours in any part from the commencement of the trachea to its termination, will, by modifying the vibrations of the atmosphere in the tube, alter the character of the sounds produced.

In one case of an ox, a tumour in the pharynx pressing upon the side of the larynx occasioned the breathing to be carried on with a loud noise, which seemed to result from obstruction in the nostrils. Sometimes the breathing suddenly becomes difficult, even to the extent of threatened suffocation, from which the animal is saved in a short time by the application of a powerful counter-irritant to the throat. Such instances are probably caused by partial closure of the glottal opening from spasmodic muscular action; this view is strengthened by the fact of the distressing symptoms being intermittent in some cases, while in others they suddenly cease altogether. Cases have recently occurred, in which the symptoms were so urgent that the performance of tracheotomy seemed to be the only plan for preserving the animals, but where counter-irritation proved so effective that the breathing became perfectly tranquil in a few hours.

Organic disease of the muscles of the larynx, or constriction of any part of the cartilaginous structure, will of necessity produce permanent derangement of the respiratory function; recent disease will cause, probably, a temporary

disturbance, while a third condition, that cannot be defined, will lead to the production of occasional noises or sounds made only under peculiar circumstances; to these may be added certain other sounds, which are the result of habit, or under the influence of the animal's will.

Under the comprehensive classification of "abnormal sounds in respiration," we have, therefore, to notice four distinct divisions, which will include—1, animals suffering from recent disease of the respiratory organs, causing certain sounds during respiration under exertion; 2, animals whose breathing is attended with unnatural noise only upon occasions or under certain conditions; 3, animals whose respiration under exertion is invariably attended with abnormal sounds, consequent upon permanent organic derangement; and, 4, animals that make certain noises in respiration as the result of habit, or in the exercise of their volition. These divisions will probably include all the peculiarities of sound met with in the examination of the respiratory capabilities of the horse, in reference to which the most rigid scrutiny is usually required. The separate consideration of each section may assist in the establishment of what is much needed—a uniform method of examination and classification.

TEMPORARY NOISES RESULTING FROM RECENT DISEASE.

Depending upon the extent of the attack and its acuteness, will be the nature of the sound emitted during respiration. We shall, at different times, observe all possible variations, from the crowing respiration, resulting from laryngeal obstruction, down to the slight whistle observed commonly when the horse is exerted while affected with a simple cold.

So long as any decided noise is made in the act of breathing while the animal is at rest, it is evident enough that an acute cause is present, and any question of soundness does not occur; but in numerous instances, where the breathing at rest is perfectly natural, the slightest exertion will be followed by the occurrence of abnormal sound, either whistling or roaring, but most frequently the former. Sometimes it will be apparent in the trot, sometimes a canter will be necessary to elicit it, and even it may be a sharp gallop. During the exertion the animal may cough, or the subsequent examination may detect soreness of throat, and at once afford an explanation of the unsoundness. Technically, it certainly is important to distinguish between such a case and one where the absence of all evidence of recent disease renders it probable that the animal is permanently unsound. In com-

surgeon's duty is executed, it may appear as no more than a joke thoughtlessly got up to tickle the mental palates of those excitable patrons who are always haunted by some public disaster, or one of those characteristic, sensational, wide-sweeping, and haphazard assertions made without sufficient care or data, and quite independent of facts. But to the many who crowd beyond this enlightened circle, it must, indeed, appear a most lamentable and reprehensible state of affairs, and one so productive of great public loss, as to call for instant investigation. And not only will it wear this aspect, but it will also tend to the belief, that while the veterinary art has been advancing in the civil world, in the military it has, in this respect, remained stationary since the infancy of our noble and humane profession.

Let me assure those, however, that such is not the case; that these alarming assertions are quite without foundation; that the principles which are published, and which guide and give uniformity to the system of army horse-shoeing are as perfect as the present state of the art will admit, and if they owe their introduction to the talented pioneer of British veterinary surgery, they prove that he does not merit such obloquy or utter condemnation, and that he was not a whit behind those who now so severely do honour to his labours.

The number of horses rendered unserviceable from shoeing in the army is, I have every reason for asserting, infinitely small, and to my certain knowledge few, if any of the cases are either preventible or curable by the better system of shoeing which the writer inculcates. The regimental veterinary surgeon is responsible for the shoeing of the horses entrusted to his care, and though an adherence to the established regulations is strictly enjoined for the sake of uniformity, and to guard against the pet vagaries of the *inexperienced*, yet a lame horse is a medical case, and can be treated as such. So that to preserve efficiency and avert loss, when horses require a particular description of shoe, or a modification in the method of applying it, the veterinary surgeon is permitted to exercise his judgment either in the prevention or cure of lameness, and that within no prescribed limit. From month's end to month's end I have not a single case of lameness caused by shoeing, in a corps of nearly four hundred horses, and many of the animals have been twelve and fourteen years in the ranks, and yet have beautiful feet. In regard to this, I should not like to consider my regiment at all an exceptional one.

But I trust I have written enough on this subject to call attention to the injustice that may be inflicted on a class of men, or on a system, by random assertions, which will not

for a moment bear investigation, but which might be credited by those who have not opportunities for getting at the truth; more especially might these statements be received as well founded by our continental brethren, and it is to them especially that I would desire this more favorable side of the picture to be shown.

THE STATE AND PROSPECTS OF THE VETERINARY PROFESSION.

By T. GREAVES, M.R.C.V.S., President of the Lancashire
Veterinary Medical Association, Manchester.

GENTLEMEN,—I have been induced to forward you the following communication, and ask you to give it a place in your forthcoming number, in consequence of some remarks which were made, at the annual dinner of the profession, on the necessity of co-operation, Provincial Associations, and the education of the pupils at our Veterinary Schools.

It having been my lot to have had a good deal to do with Provincial Veterinary Medical Associations, I beg to bear my testimony to their thoroughly practical utility. I believe them to be sound in principle, and that their prospects are very encouraging indeed. Such associations have brought me into contact with very many members of our profession, gentlemen who have been for a great number of years diligently and unobtrusively pursuing their scientific calling. It may indeed be said that ever since they graduated at the Veterinary College they have gone on acquiring and storing up much valuable knowledge, and have thus become eminent practitioners; but I find that many of them object in the most strenuous manner to the notion or system of making the knowledge they have acquired common property. They will neither record their views in the *Veterinarian*, nor will they place them by a *viva voce* description before our associations. The reason assigned for this is that their knowledge will fall into the hands of the common farrier, the groom, and the uneducated blacksmith, to employ it to their own advantage.

Thus the profession is deprived of means which, being derived from accumulated knowledge and experience no one can doubt, would greatly enrich veterinary science. Press these gentlemen, and they will say “no” a thousand times over. Whatever knowledge I may

possess—each will say—having acquired much of it by my own application and industry, it shall sooner go down to the grave with me than it shall be handed over gratuitously to the uneducated man, who will by its use do all he can, in his own uncourteous, bigoted, ignorant manner, to take the very bread out of my mouth; and moreover who is by law permitted to call himself a veterinary surgeon, and thus claims to stand upon an equality with myself. Abolish this very censurable state of things, and then all the knowledge I may possess I will freely make known to my veterinary brethren.

Now I would respectfully ask, Is not this feeling very generally expressed in the provinces? How much our profession suffers from it none can tell. This spirit of itself tends to check all interchange of acquired knowledge. It is a universal clog upon the onward progress of our profession. It is a state of things which certainly ought not to be permitted to exist. We are not faithful to ourselves—to our common profession—or even to society, if we do not become more in earnest in this matter, and not rest until we obtain all the powers that are necessary to secure the full benefit of our own individually acquired or developed knowledge.

I cannot find words sufficiently strong to convey my warmest thanks to our late President for his great and valuable services towards the attainment of this object. I fear, however, there is at present too much apathy in the profession, and even in the Council; but if they have been slow to understand their own interests, I trust they will not permit his exertions to be barren of results, but prosecute the Bill—which I fully believe to be a wise, just, and beneficial measure—to a successful issue.

Much also has been said upon the subject of education, and although it is the custom to say the Council has nothing to do with the education of the student, I am of opinion that time has demonstrated the fallacy of this, as it has proved the error of the prophecy that education would tend to ruin the labouring classes. Is it not a matter of fact that education does not make the labouring classes above their place? Education gives dignity to labour, enlightening the labourer and making him a more apt, skilled, and useful, and consequently a more valuable member of society. As such he is worthy of a higher rate of pay than the uneducated and unskilled man. Let me here point out the rapid and gigantic strides education is making, and has made of late years among the masses of society. The agriculturist is now an educated man. There is scarcely to be found one who,

like the true "clodhopper" of old, is unable to distinguish between ignorance and knowledge in our profession, or between the presumptive man groping in the dark and the enlightened practitioner. I entertain some strong opinions upon this point; I view it in its broad and common bearing upon mankind generally. The relation in which our own profession stands to society is unmistakably a peculiar one. This fact has been confirmed by many a writer and speaker. The good results of our labours as a body, or as individuals, are valuable and useful only in proportion as we are successful in practice, and this again depends almost entirely upon the soundness of our knowledge of disease.

I come now to another subject. I fully agree with much that has been said upon the question of a preliminary examination of the students. I feel I cannot too highly applaud the sentiments of some of our teachers, who have expressed themselves in favour of a preliminary examination; not one to test the pupil's knowledge of Latin and Greek, but into the soundness and the extent of his English education. In this sense I believe the Council and the profession generally will agree, and be unanimously in favour of such a preliminary examination of the student. The conviction in my mind is, that to keep a youth at school until he is nearly twenty years of age, for the purpose of making him acquire a knowledge of all the higher branches of a *classical education*, and then sending him to a veterinary College, is in many cases a mistake. I believe that at least some part of such an education actually tends to unfit him to become a plodding and useful veterinary surgeon. Much of the time thus spent would be more profitably employed in his obtaining a practical knowledge of the profession he is to follow. It is a fact that many of our best and most successful practitioners, highly respected and even educated as they may now be, were previous to their having obtained their diploma men of limited education. Whatever difference there may be among us on this point, there is one at least on which we are all unanimous, and that is, that the time spent at college as the sole means of acquiring veterinary instruction is absurdly and ridiculously short. To remedy this I would strongly urge the necessity of a previous apprenticeship, and even to this I would add an extended period of college instruction.

In respect to veterinary empiricism, I would remark that whatever be the amount of practical knowledge an empiric may have acquired, it is oftentimes used erroneously. In every such case he is a dangerous man, and what is more he

will continue such so long as he is kept in ignorance and grovelling in the dark. Society is all the time sustaining an unknown amount of injury from a cause of this kind. Now if this evil be admitted, and I believe no one will deny it, then I say it is plainly our bounden duty to devise a remedy. These very sentiments I urged upon the attention of the profession in a paper in the *Veterinarian*, twenty-two years ago, and now being more confirmed in their soundness, I would say if the veterinary empiric is to be allowed to practice at all, if he really is irrepressible and must be tolerated—a conclusion I for one can by no means agree in—then in that case make him as useful a member of society as you can. Allow him free access to sound views and correct principles. It has not been yet proved to me that the empiric by obtaining a diploma becomes either a less useful or valuable member of society. Indeed the fixed impression on my mind is, that unless all men intending to commence practice should choose to embrace the opportunities thus placed within their reach, they should be by law prohibited from practising altogether.

I am, &c.

To the Editors of the 'Veterinarian.'

INTUS-SUSCEPTION OF THE CÆCUM IN A HORSE.

By CHARLES DAYUS, M.R.C.V.S., Longnor, Salop.

AT midnight on Monday, the 28th of March last, I was requested to visit an aged cart-horse, seven miles from this place, said to be suffering from "gripes." On my arrival I learned that the animal had been ill since the previous day, Sunday, and that some antispasmodic medicine had been given at intervals during Monday. The symptoms had not appeared of a very acute nature, which I suppose accounted for the owner's comparative little anxiety about him. On my arrival I found the horse standing; pulse a little increased in frequency; visible mucous membranes slightly reddened; breathing undisturbed, and the extremities rather cold. He turned an anxious look at times to his side, which, with a shuffling of his feet from place to place, indicated some abdominal pain. Believing at the time that the case was one of indigestion only, I gave a stimulant combined with a fair dose of aloes in solution, threw up an enema, and had the abdomen rubbed with mustard. After a

short time I left, giving directions for the enema to be repeated at intervals, and promising to attend again the next day.

29th, 4 o'clock, afternoon.—My patient since I last saw him had been lying down a good deal, apparently suffering more pain; otherwise the symptoms varied but little from those observed the previous night. As no action of the bowels had taken place, and as the pain seemed rather more acute, I gave—

Liq. Ammon., ℥iij;
Spt. Ether. Nit., ℥iiss;
Tinct. Opii, ℥j;
Ol. Croton., gtt. xv. Ft. haust.

I also gave instructions for the enemata to be continued, and the mustard cataplasm to be repeated. As I believed that my chance of success depended upon an evacuation of the bowels, I also left a draught similar to the last, with the exception of the croton oil, to be given if the pain increased before I saw him next day. I did not consider it necessary to exhibit any quantity of medicine from time to time, but to wait patiently for the effect of that which had been given.

30th, 3 in afternoon.—Bowels acting very freely, extremities cold, pulse 80, and scarcely to be felt, breathing accelerated, and the visible mucous membranes of a pallid hue. I should remark that since the attack the animal had only eaten a very little bran mash, but would drink rather freely. I thought that some of the symptoms observed to-day might depend upon the action of the medicine, which was rather violent. I ordered the extremities to be hand rubbed, the surface of the body kept as warm as possible, the enemata to be discontinued, and a little warm gruel given occasionally.

31st, 10 a.m.—Purging not so violent; abdominal pain less, and altogether the animal appeared better, but he takes no food. Continue giving gruel.

From this time to Monday, April 4th, the acute symptoms seemed to abate, the pain especially not being so great, but as there was no disposition to partake of any food, and the pulse had not assumed a natural tone, I gave a guarded opinion as to the result.

April 5th.—The animal is to-day in more pain, his bowels are acting, and he lies down a good deal, which he has not done since Friday. Gave in draught—

Tinct. Opii, ℥j;
Liq. Ammon., ℥iij;
Ol. Terebinth., ℥j.

A blister was also applied to the abdomen.

I now gave a decided opinion that there existed some organic lesion, the precise nature of which it was difficult to determine, and that there was but little hope of his ultimate recovery.

6th.—The symptoms are about the same. He lies quietly stretched out at full length, with extended limbs, but now and then raising his head and casting an anxious look at his side.

8th.—Little or no alteration. The bowels not having responded since the 6th, I gave Ol. Lini Oj.

10th.—I was informed that he continued in the same state throughout yesterday, lying down nearly all the time. He drinks a little gruel at times. His bowels are moved and he urinates freely.

11th.—On my visit I found a marked difference in my patient. The pulse numbers 72, and is tremulous, the visible mucous membranes are of a leaden hue, the extremities cold, and the breathing much quickened. On pressing the abdomen he experienced pain, as shown by the deep groans which he gave. It was evident that dissolution was near at hand, therefore on leaving I requested to be informed of his death. He died next day.

With much interest I proceeded to make a *post-mortem* examination, when I found that the cæcum was inverted and had passed as far as possible into the colon. Its coats were very much thickened, and quite black in colour. The peritoneal surface was coated with a thick layer of lymph, undergoing purulent degeneration, and the interior of the viscus, as inverted, contained a large quantity of whey-coloured fluid. The part of the colon into which the cæcum had passed was considerably thickened and inflamed; but the other portions of the intestines as well as the stomach presented no marked abnormal appearances. Both kidneys were somewhat enlarged, and the left contained a small quantity of a mucopurulent fluid. An old adhesion existed on the left side of the chest.

This case will probably be interesting to your readers. To me the fact of an animal living so long—eighteen days—with such an important lesion, is both novel and instructive. The circumstance of the bowels responding to medicine would show that the opening of the ileum into the cæcum could not have been much obstructed, and therefore that the cæcum itself only caused a partial filling of the colon at this part.

A question suggests itself to the effect of the possibility of a recovery in a case of inversion of the cæcum. If an animal

can bear up for so long a time as this one did, may not the cæcum under such circumstances slough and life be preserved?

I should be glad of any remarks from the members of our profession upon this case, which they may be disposed to make.

THE INDIAN ARMY AND ITS VETERINARY SURGEONS.

By "ARGUS."

THE veterinary surgeons of the Indian army have at last unexpectedly been called upon to elect for general or local service. Those who choose the former will become an integral part of the British army, and be gazetted to Her Majesty's new line regiments of cavalry and brigades of Royal Artillery; but the men who prefer remaining "locals," will not be employed with English troops. What then will be done with *them*? There are only five stud appointments, the governor general's body guard (natives), and the Lahore light horse (half-castes), to afford employment to local service men. I imagine about one third of the Indian veterinary surgeons will volunteer for general service, and two thirds remain as they are now. Why should not the latter be posted to corps of Bengal (native) cavalry? There are nineteen of these regiments in the Bengal presidency alone, also five regiments of Punjaub cavalry, and two of Central India horse. Each corps numbers 500 rank and file, and all are very well mounted. There is a "salvatri," or native veterinary surgeon to every regiment. These men are generally, in fact invariably, old native farrier majors and farriers of the now extinct Bengal light cavalry, who have been taught what they know by the veterinary surgeons of the old Company's army. If the government deem it necessary to post an assistant surgeon to each native corps, why should they not give a veterinary surgeon also? The subject has been broached more than once, but, like many other improvements necessary in our department in India, it has fallen to the ground, because there has been no person to push it. I have often heard people express their surprise that corps of Bengal cavalry had no veterinary surgeons posted to them. Should the principal veterinary surgeon at home assume the control of the department in India, I feel certain that before

long we shall see men of our profession posted to these irregular corps as assistant surgeons are now and have been for many years. These twenty-six new appointments on this side of India, and about twenty-four others in Madras and Bombay, would give employment to fifty additional veterinary surgeons in the Queen's service, and materially increase the importance of the army veterinary department. In the Royal Artillery in India a large number of field batteries are without the services of a veterinary surgeon. I could at this moment name twelve stations, at each of which there is a battery of Royal Artillery without a veterinary surgeon, either of their own or of any other service! Surely this is not as it should be; if professional assistance be necessary for one battery, it should be equally so for all. I hope the veterinary surgeon general will ere long assume the reins of our department out here and thoroughly reorganize it. I am certain he would soon rectify the above state of things if it were officially brought to his notice.

RETROSPECTS OF VETERINARY PRACTICE.

By "MENTOR."

(Continued from p. 299.)

PROTRUSION OF THE RECTUM IN YOUNG PIGS.

DURING the months of December, 1855, and January and February, 1856, protrusion of the rectum, particularly among young pigs, prevailed, in the district in which I reside, to an extent which would sanction the belief that the affection was epizootic in its character.

The accompanying symptoms were severe cough and feverish state of the system; represented by a quick pulse and respiration, partial, but in most cases total loss of appetite, and obstinate constipation. These symptoms were associated with severe tenesmus, from which the inversion seemed to arise.

In several instances the gut was gnawed by the companions of the sty, so that death speedily took place. One case defied all attempts to return the intestine, from excessive swelling. Two large pigs were similarly affected, the protrusion, however, only taking place during the paroxysm of cough.

The treatment consisted in returning the intestine as

speedily as possible, and passing a suture through the edges of the *sphincter ani*.

The food, which had consisted of a fair proportion of barley meal, was changed for a laxative and less nutritious diet. Plenty of warm litter and comfortable housing was enjoined. A dose of magnesia sulphas, with pulv. zingib. was administered to each, and enemas of tepid water thrown up, the rectum being cleared in the first instance. A free erythema appeared in the majority of the animals. When the bowels responded to the medicine, and the appetite had returned, nitre, sulphur, and antimony were given in the food, and all recovered.

In the most severe cases there appeared great soreness of the body, which was increased by the cough. Pressure over the abdominal region gave intense pain; and to mitigate the effects consequent upon the paroxysms of coughing, the suffering creatures would lie at full length, with the legs stretched out to allow of the abdomen being brought in contact with the ground.

INVERSION OF THE VAGINA IN A SOW.

A young sow had completed the process of parturition, when the owner found a "*large ball*," as he termed it, behind the animal, and judging it to be the "*pig bed*," my attendance was requested.

Before I could arrive at the place, distant about six miles, the sow had rubbed and pressed the hind parts against the brick walls of the loose box in which she had been placed, thereby injuring the organ very much. In addition to this, a stupid fellow had moved her from her pigs and placed her with another animal about her own size, which took occasion to chase the poor creature round the sty, and lay hold of the protruded organ, to the further increase of the injury.

On examination, the vagina was found to be swollen, fearfully lacerated, blackened, and cold. The intestines were constipated, and therefore purgative medicines with aromatic stimulants were given. The injured parts were well fomented with warm water for some time, and afterwards sponged with some spirits of camphor and tincture of opium. The hind legs were then raised, and by careful manipulation the vagina was returned in a few minutes.

A large bandage was next put on. Deriving its point of attachment from a collar round the neck, it extended over the back to the perinæum; thence between the hind legs, where, being divided into two portions, one was brought

up on each side, and firmly secured over the dorsal region. A hole was cut in the bandage to admit the tail, and also to allow of the evacuation of the bowels. The patient assumed under the confined position the greatest composure.

I saw the animal twice during the two following days, when all was going on well. The bowels were responding to the action of the medicine, and there being no signs of re-inversion of the vagina, or of much systemic disturbance, the bandage was removed. Tinct. Arnica Montana dilut. was left as an injection. The parts healed with rapidity.

In due course the young pigs were taken from her and weaned, but she never showed signs of œstrum, and consequently was fatted and slaughtered about eighteen months afterwards.

Pigs are generally considered very awkward animals to have anything to do with, especially when the administration of medicine is necessary. As fluids are always preferred for the purpose, I have found the exhibition of them most easily performed as follows:—

If the animal is a small one, let a person raise him by means of the ears, to the extent of six inches from the ground, holding the shoulders between his legs. If he is too heavy for this, then secure him by the snout with a strong cord having a slip knot, and draw him up to a strong post.

The medicine, being accessible, should be placed into the mouth with an iron spoon, such as is used for culinary purposes, raising the head slightly at the time with the cord in the left hand, the operator standing on the right side of the beast. He will thus swallow each spoonful almost as fast as it is given. I find the operation sufficiently expeditious without giving too much, that is, more than two spoonfuls at once. Holding the head too high, and giving medicines in large quantities and too quickly, especially when the animal is screaming and resisting all efforts, are fertile sources of choking.

Attention to these simple facts has been the means of saving the pig of many a poor cottager, whose thanks and gratitude for the recovery of his "live stock" have been testified in a hundred ways, far more tangible than actual payment.

LACERATION OF THE RECTUM AND VAGINA OF A MARE, AT THE TIME OF PARTURITION.

A valuable bay cart-mare, upwards of sixteen hands high, six years old, had given birth, during the night of the 11th,

or morning of the 12th April, 1859, to a fine colt, which was found by the attendant dead, from being strangulated by the cord and placenta becoming twisted round its neck. My attendance was requested, to report on the unnaturally swollen state of the external genital organs and rectum, accompanied by extreme difficulty in voiding either fæces or urine. The circulation was considerably increased, accompanied with other symptoms of a febrile character, loss of appetite, &c. Immediately the parts were touched the mare commenced to strain violently, during which she groaned severely. The vagina was inflamed and tender; and being nearly closed by the swelling, rendered an examination of a difficult nature. Upon the hand approaching the meatus urinarius, a small quantity of scalding, high-coloured urine escaped, but the bladder could not be thoroughly evacuated without having recourse to the catheter. The hæmorrhage had been considerable, as the bedding was greatly stained, and large clots of blood were found in the manger and elsewhere. Large clots also escaped, with renewed hæmorrhage, on exploration of the passage, which showed that the roof of the vagina was torn in a longitudinal direction to the extent of three or four inches. The rectum immediately above the rent contained a large quantity of hardened pellets of fæcal matter, which appeared only separated from the hand, as it were, by a thin stratum of tissue. With great care the pellets were removed in the usual manner, when the floor of the intestine also proved to be ruptured, but in an irregular manner, the long axis of the wound being across the gut. Not having witnessed such a case before, from the swelling, extreme febrile excitement, and uneasiness of the animal, with periodical straining and hæmorrhage, my apprehensions were of a very unfavorable character, and much more so on the account that I could see little benefit was likely to result from any particular mode of treatment, setting aside the probability of an opening being established between the two passages.

The treatment consisted in the administration of laxative and sedative medicine, allowing a cooling diet. Enemas of tepid water were regularly used to reduce the matter in the bowels to a pultaceous state, and facilitate its expulsion. Tinct. Arnica Mont. was applied to the parts.

Healthy suppuration commenced, and everything went on satisfactorily, without even an untoward symptom of any kind. The animal gradually recovered the power of evacuating the rectum. She was put to work in about a month.

It is necessary to state that the process of parturition had

commenced six weeks sooner than was expected. The foetus being unusually large, and the pelvis not sufficiently relaxed, will probably account for the rupture of the organs named. No signs of œstrum afterwards returned, and as the owner particularly wanted her for the purpose of breeding, on account of her good qualities, he disposed of her by sale about twelve months afterwards.

FATAL EFFECTS OF TWIN IMPREGNATION AND HYDROMETRA IN A MARE.

The subject was an aged mare, whose racing career had terminated, she having won golden honours. She was now snugly located at "The Paddocks" under special care, and great expectations existed respecting her produce, she having been served by "Orlando" at Hampton Court.

As the time drew near for her delivery, her noble owner requested my frequent attendance, in order that everything both by way of assistance and precaution should be supplied in case of need. Her extreme size was a subject of apprehension as well as joyful anticipation, for whilst the existence of two foals was supposed from an examination, still the presence of a large quantity of fluid within the womb was dreaded.

Her full time at length arrived without there being any signs of secretion of milk, or relaxation of the pelvis. From day to day a visible increase in her size had taken place, which on measurement was now ascertained to have reached to thirteen feet round the centre of the back and abdomen. Symptoms of uneasiness resembling slight colic at length came on, which were not relieved by medicine. The abdomen grew so tense and hard, and in places pitted, that I feared a giving way of the muscular parietes, and strong bandages were therefore placed around the body. These being drawn too tight, the animal fell as stiff and rigid as in death. She, however, recovered, and was assisted to rise. After a time her sufferings appeared to be greatly mitigated, as shown by calmness, absence of pains, and her resuming the taking of food and drink.

She was left for the night, but early next morning I was called to her, when an extensive rent was found to have taken place in the right iliac region, from which the small intestines escaped. The poor creature was fast sinking, and as a humane procedure the carotid artery was opened. Shortly after death a *post-mortem* examination was made. Upon opening the abdomen the uterus, excepting some

portion of the small intestines, was the only organ visible, being of extreme dimensions, and very pale and flaccid; it was opened, when about twelve gallons of serous fluid escaped, exposing *two colt foals* thoroughly developed, but dead, of course. Judging from their size, I should doubt, even if hydrometra had not been present, whether parturition would have been safely got over.

The tears of a good man flowed for his favorite; others have since flowed for him, and hearts have been rendered sad at his loss.

Facts and Observations.

FATALITY AMONG EWES AND LAMBS.—We are informed that the past lambing season has proved a very destructive one to both ewes and lambs in many parts of the Lincolnshire wolds. One correspondent writes that many farmers have lost from 80 to 100 ewes out of flocks of 500, and that several of them will not have more than 150 lambs from this number of ewes.

The *Lincoln and Stamford Mercury*, alluding to the subject, says that “the losses in parturition in a particular district on the wolds, including Swallow, Croxby, Stainton, Kirmond, &c., have been enormous. One farmer, we understand, from 400 ewes will not rear above 60 or 70 lambs, and a collector of carcasses at Swinhope, which is situated nearly in the centre of the fatal neighbourhood, has had brought in 40 to 50 dead ewes in a day. He has had several hundreds of carcasses pared for tallow.

PREVENTING SCAB.—AUSTRALIA.—We learn from the *Sydney Times* that “a bill to prevent the spread of scab has been passed through both Houses, and will, it is expected, in a few days become law. The colony is to be divided into scab districts. In each district the sheepowners are to appoint five of their number as directors; these will appoint inspectors, who will act in subordination to an inspector-general of scab. The compensation for sheep destroyed is not to exceed six shillings a head. To provide the means for this compensation there is to be an annual assessment of £1 per thousand sheep.

NUMBER OF CATTLE IN THE UNITED KINGDOM.—As far as can be ascertained, there are in the United Kingdom nearly 8,000,000 head of cattle, thus distributed:—In England there are something over 3,500,000; in Ireland, 2,250,000, and in Scotland there are about 1,000,000. The total number of sheep is about 40,000,000; and the total number of pigs, 4,300,000. The aggregate value of that property, reckoning the cattle worth £10 a-head, the sheep at £1 each, and the pigs also at £1, was no less than £121,800,000.

EXPORTATION OF HORSES.—The number of horses exported last year was 5,235, against 4,288 in 1862, and 2,954 in 1861. The export of horses to France seems steadily extending, 2,178 horses having been shipped thither in 1863, against 8,985 in 1862, and 1,429 in 1861. The value of the horse stock exported last year was £271,380, against £267,956 in 1862, and £237,813 in 1861.

STATISTICS OF DOMESTIC ANIMALS IN FRANCE.—It appears from official returns that there are, in round numbers, 3,000,000 horses in the 89 departments of France, 400,000 asses, 330,000 mules, 10,200,000 horned cattle, of which 300,000 are bulls, 2,000,000 oxen, 5,800,000 cows, 2,100,000 yearlings, 4,000,000 calves, 35,000,000 sheep and lambs, of which 26,000,000 are merinos or half-bred; goats and kids, 1,400,000; hogs above one year old, 1,400,000; sucking pigs, 3,900,000.

SUPPOSED ORIGIN OF THE PETROLEUM IN THE SPRINGS OF AMERICA.—Dr. A. Gesnér believes the hydro-carbon to be a product of the chemical action by which ligneous matter is transmuted into coal. In some instances, he suggests, animal matter may also have been the source. It is stated to be derived from Silurian, Devonian, and carboniferous rocks. The borings for it pass through each class, and as soon as the oil-stratum is reached, an escape of carburetted hydrogen takes place, oftentimes with considerable violence; after which the oil rises.

Dr. Dawson has found numerous remains of land animals in the coal measures of Nova Scotia, and also reptiles and insects in a fossilized tree.

THE CINCHONA PLANT IN JAMAICA.—The annual report of the island botanist, presented to the Jamaica House of Assembly, contains some interesting information relative to the experiment of cultivating the cinchona plant

in that island. In the autumn of 1860 a quantity of the seeds of this valuable plant was received, and by the month of October of the following year the island botanist had succeeded in rearing over 400 healthy plants, quite ready for planting out. This was in the low lands, where the climate proved too warm for the cinchona, and one half of the plants perished. Subsequently they were removed to the mountain region, at an elevation of about 4000 feet above the level of the sea, and placed under artificial treatment, with the happiest results. "In 12 months after, a plant of the red bark (*Cinchonæ succirubræ*) had attained to the height of 44 inches, with leaves measuring $13\frac{1}{2}$ inches long, by $8\frac{3}{4}$ inches broad. The same plant, now two years old, measures six feet in height, with ten branches, having a circumference of stem [at base of $4\frac{1}{2}$ inches. The *Cinchonæ micranthæ* (grey barks), being of more slender habit of growth, have not made so rapid progress; the highest has attained to five feet, with three branches. The leaves, however, are larger, and measure 14 inches by 10 inches." Thus far the experiment had proved eminently successful, and, if only properly followed up, will, no doubt, lead to important results for the island, where there is an abundance of land possessing all the conditions favorable to the growth of the cinchona. —*West India Letter.*

VETERINARY EXAMINATION AT AGRICULTURAL SHOWS.
—We have the gratification of stating that Professor Varnell has been appointed the examiner of horses at the forthcoming show of the Suffolk Agricultural Society. The meeting will take place at Saxmundham, on Friday, July 8th.

THE NERVOUS SYSTEM IN THE LOBSTER has been minutely considered by Dr. M. S. Clouston, who recently published an elaborate paper, with two engravings, in the *Edinburgh Philosophical Journal*. He says, in conclusion, that a careful consideration of the minute structure of the nervous system of any invertebrate animal, such as the lobster, shows us that histologically and physiologically the vertebrate and invertebrate animals are nearly allied. In every essential point the ganglia and interganglionic cord of the lobster correspond to the spinal cord of the vertebrate, while the cephalic ganglion is analogous both in structure and function to the brain. The tendency to segmentation seen in both kingdoms is most marked in the nervous system of the invertebrate, because in this division the nervous system does not form the centre round which all the other parts are

developed, as is the case with the spinal axis of the vertebrate. Such an examination makes us esteem lightly such generalisation of the mere external form of the nervous system as that made by Audouin and Milne-Edwards in the crustacea, as being only a prelude to a more natural and scientific classification.

THE PHENOMENA OF ATTRACTION AND ADHESION, as exhibited in solid bodies, films, liquid globules, &c., have been lately investigated by Mr. Richard Norris. Mr. Norris observes that solid bodies floating on liquids modify the figure of the surface of the liquid; pieces of tinfoil or greased bodies depress the liquid around them, whilst other bodies elevate it, giving rise to small mounds of liquid bounded by concave lines; likes attract likes, and repel unlikes, &c. He states that the following experiments are arranged to show that these effects of attraction are not peculiar to floating bodies, and that the only requirement is that the liquid should be associated with the bodies in which the movement occurs.

1. Let two balls of sealing-wax, or other material of greater specific gravity than water, be suspended by hairs in such a manner that they will both be partially immersed in water to an equal extent, the points of suspension being at a little distance apart, and the suspending hairs consequently parallel. When brought within the proper range they will attract each other in the same manner as the floating bodies. In doing so they necessarily describe a small arc of a circle, of which the suspending hair is the radius, and have, therefore, not simply moved towards each other in a horizontal line, but have been raised to a higher level.
3. Suspend movably, by means of a thread passing over a pulley and a counterbalancing weight, a horizontal cork disc, from the under surface of which a drop of water is hanging. On a support beneath, formed by three upright pins, place a small piece of paper or thin glass, on the surface of which there is also a drop of water. On depressing the disc until the two drops of water touch each other, the paper or plate will be instantly drawn up to it; or, if the plate at the bottom be heavier than the disc, the latter will be drawn down.
6. When a soap bubble is allowed to fall on an irregular surface, such as a piece of lint or flannel, it maintains its spherical shape; but if a smooth surface, such as a sheet of glass, be brought into slight contact with it, the wall of the bubble will be immediately attracted and flattened out upon it. In like manner, when two bubbles come in contact by their convex surfaces and cohere, the cohering surfaces become flattened, and the bubbles in a group cohere by plain surfaces.

THE VETERINARIAN, JUNE 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ANNUAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

IN consequence of the unusual length of the subjoined report of the Annual Meeting of the profession, and the heavy demands made on our space, we are obliged to content ourselves this month by merely laying the details of the meeting before our readers without note or comment. Hereafter we hope to return to this subject, and freely to express our opinions thereon.

It was gratifying to find that more members than usual were in attendance, and that everything passed off in the most satisfactory manner.

Among those present were the President, W. Ernes, Esq.; Professors Simonds, Gamagee. The principal veterinary surgeon to the army, J. Wilkinson, Esq.; Messrs. J. Allen, Hugh Anderson, H. T. Batt, E. Braby, T. P. Boughton, J. Broderick, G. T. Brown, W. Burley, Michael Byrne, B. Cartledge, E. Charles, W. Cooper, W. Dale, P. S. Dollar, C. Dickens, J. Darling, J. Ellis, P. Ellis, T. H. Ford, B. C. R. Gardiner, T. Greaves, E. Harrison, H. Hussey, D. Hinge, M. F. Healy, W. Helmore, R. L. Hunt, J. Lawson, G. A. Lepper, W. D. Lines, C. Lowe, D. M'Clean, T. W. Mayer, P. Moir, J. Moon, J. Moore, J. Moore, jun., R. Mackinder, W. Partridge, R. Pritchard, W. Pritchard, J. A. Rostron, A. Rushall, F. R. Silvester, F. Spratt, H. Stanley, C. Steel, S. Tremlett, G. Walters, Walker Watson, W. Wilson, S. H. Withers, H. Withers, J. Woodger, E. Woodger, J. Woodger, jun., and the Secretary.

REPORT OF THE MEETING OF THE ROYAL COLLEGE OF
VETERINARY SURGEONS.

THE Twenty-first General Meeting of the members of the Royal College of Veterinary Surgeons was held at the rooms of the College, 10 Red Lion Square, on Monday, the 2nd of May, William Ernes, Esq., President, in the chair.

The advertisement convening the meeting, and the minutes of the previous general meeting having been read, the Secretary read the Annual Report of the Council as follows :

The Council have to report that at its first meeting for the year the following gentlemen were elected as officers of the College, viz. :—W. Ernes, Esq., President ; Messrs. M. J. Harpley, C. Dickens, W. G. Goodwin, W. Aitken, Edwin Harrison, and B. C. R. Gardiner, Vice-Presidents ; and Mr. W. H. Coates, Secretary and Registrar.

At a subsequent meeting of the Council, the committee appointed last year to inquire into the *status* of the veterinary profession brought up its report, recommending that a Bill to be laid before Parliament, having for its object the improvement of the position of the veterinary surgeon, be prepared ; whereupon the Council appointed a special committee to carry out the recommendation. A draft of a Bill was accordingly prepared, entitled 'The Veterinary Medical Act,' which, having been laid before the Council and duly considered, was submitted to the opinion of Mr. Garrard, the legal adviser of the College, and was returned by him to the Council in the following form :

WHEREAS, her present Majesty, by Royal Charter bearing date the 8th day of March, in the seventh year of her Reign, did for herself, her heirs and successors, grant unto Thomas Turner, and to certain other persons therein named, together with such others as then held Certificates of Qualification to practise as Veterinary Surgeons, granted by the Royal Veterinary College of London or by the Veterinary College of Edinburgh respectively, and such other persons as respectively then were and might thereafter become Students of the Royal Veterinary College of London, or of the Veterinary College of Edinburgh, or of such other Veterinary College, corporate or incorporate, as then was or thereafter should be established for the purposes of education in Veterinary Surgery, whether in London or elsewhere in the United Kingdom, and which Her Majesty and her successors should under her or their sign

manual authorise in that behalf, and should pass such examination as might be required by the orders, rules, and bye-laws which should be framed and confirmed pursuant to that Charter, should, by virtue thereof, be members of and form one body politic and corporate by the name of "The Royal College of Veterinary Surgeons," by which name they should have perpetual succession, and a Common Seal, with full power and authority to alter, vary, break, and renew the same at their discretion, and by the same name to sue and be sued, implead and be impleaded, and answer and be answered unto in every Court of Her Majesty, her heirs and successors, and be for ever able and capable in the Law to purchase, receive, and possess to them and their successors any goods and chattels or other personal property whatsoever, and should have full power and authority to sell and dispose of any goods and chattels or other personal property so to be by them acquired, and to act and do in all things relating to the said body politic and corporate as fully and effectually to all intents, effects, constructions, and purposes whatsoever, as any other of Her Majesty's liege subjects, or any other body politic and corporate in Her Majesty's United Kingdom of Great Britain and Ireland, not being under any disability, might do in their respective concerns; and Her Majesty did further declare and grant that the Veterinary Art, as practised by the members of the said body politic and corporate, should be thenceforth deemed and taken to be and recognised as a profession, and that the members of the said body politic and corporate, solely and exclusively of all other persons whomsoever, should be deemed and taken and recognised to be members of the said profession or professors of the said art, and should be individually known and distinguished by the name or title of Veterinary Surgeons.

And in the said Charter were contained certain regulations for the conduct and management of the affairs of the said Corporation.

And whereas it is expedient that such of Her Majesty's subjects as may from time to time require Veterinary Medical aid should be enabled to distinguish the Members of the Royal College of Veterinary Surgeons from others who have not passed the examination requisite for entitling them to become members of the said College, and who are not members thereof:

BE IT ENACTED by the Queen's Most Excellent Majesty, by and with the advice of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

I.—This Act may, for all purposes, be cited as the Veterinary Medical Act.

II.—This Act shall take effect from the First day of October, One thousand eight hundred and sixty-four.

III.—Any person, not being a Member of the said Royal College of Veterinary Surgeons, who shall, after the time appointed for this Act coming into operation, take or use the name or title of Veterinary Surgeon, or who shall falsely represent himself to be a Member of the said College, or who shall use any other name or title with intent to lead, or whereby the public may be led to believe that he is a Member of the said Royal College of Veterinary Surgeons, shall, upon a summary conviction for any and every such offence, pay a sum not exceeding Ten Pounds, nor less than Five Pounds.

IV.—Provided, nevertheless, that this Act shall not affect any person who shall, prior to the First day of October, One thousand eight hundred and sixty-four, have assumed the name or title of Veterinary Surgeon, and at the period last mentioned shall be actually in practice as such.

V.—Any penalty to which, under this Act, any person is liable on summary conviction of any offence, may be recovered as follows (that is to say): in England, in the manner directed by the Act of the Session holden in the eleventh and twelfth years of Her Majesty, Chapter XLIII; and in Ireland, in manner directed by the Petty Sessions (Ireland) Act, 1851; or any other Act for the time being in force in England and Ireland respectively for the like purposes. And any such penalty may, in Scotland, be recovered by the Procurator-Fiscal of the county, or by any other person, before the Sheriff or two Justices, who may proceed in a summary way, and grant warrant for bringing the party complained against before him; or them, or issue an order requiring such party to appear on a day, and at a time, and place, to be named in such order; and every such order shall be served on the party by delivering to him in person, or by leaving at his usual place of abode, a copy of such order and of the complaint whereupon the same has proceeded; and upon the appearance or default to appear of the party, it shall be lawful for the Sheriff or Justices to proceed to the hearing of the complaint, and upon proof or confession of the offence, the Sheriff or Justices shall, without any written pleadings or records of evidence, commit the offender, and decree him to pay the penalty named, as well as such expenses as the Sheriff or Justices shall think fit; and failing payment, shall grant warrant for the recovery thereof by pounding and imprisonment, such imprisonment to be for such period as the discretion of the Sheriff or Justices may direct (not exceeding three calendar months), and to cease on payment of the penalty and expenses.

VI.—Any sum or sums of money arising from conviction, and recovery of penalties as aforesaid, shall be paid to the Secretary for the time being of the said Royal College of Veterinary Surgeons, for the use of the aforesaid College.

VII.—Any person, being a Member of the Royal College of

Veterinary Surgeons, actually practising, shall be exempt from serving on all Juries and Inquests whatsoever.

The time which was necessarily occupied in giving this subject mature consideration, and in obtaining legal opinions thereon, made it too late to bring the measure forward in Parliament as a Private Bill; and therefore, rather than postpone proceedings for another year, it was deemed desirable by the President to take steps to introduce it as a Public Bill; and, in accordance with that determination, notice was given in the House of Commons by the Hon. Member for Evesham. The grounds for introducing it as a Public Bill are as follows :

Firstly. The object of this Act is to protect the public from a deception practised on it by certain parties assuming the name and title of Veterinary Surgeon, to which they have not the slightest right or claim. This, by misleading persons in quest of Veterinary Medical aid, is calculated at times to cause great losses to the owners of live stock. To the Veterinary profession it is of great consequence, not only in a pecuniary point of view, but also as affecting the reputation of the profession generally.

Secondly. The name of Veterinary Surgeon is of comparative recent date, it having been introduced simultaneously with the establishment of the Veterinary College, and was first exclusively assumed by those who had graduated at that establishment; and the title certainly does not belong to persons who have neither devoted time nor money to the acquirement of Veterinary science. Moreover, there is no hardship in preventing persons who have *not* graduated from using the title, for the Act would not affect those in actual practice at the time it would come into operation. It is simply prospective, and its effect would be to cause all future candidates of the Veterinary art to study at one or other of the Veterinary Schools, of which there are now three, and the establishment of a fourth is in contemplation.

Thirdly. Though Veterinary Schools have now been founded above sixty years, the number of Veterinary Surgeons is under 1000, while that of Veterinary empirics is more than three times this amount, evidently showing that the present state of the Veterinary profession, if not stationary, is certainly not increasing with the population, and that unless something is done to check this abnormal state of things, Veterinary Schools will be very much at a discount. Veterinary Surgeons are now principally located in large towns, few commencing practice in rural districts, on account of the opposition they have to encounter from numerous empirics. These persons are generally the first to attend the maladies of domestic animals,

and if the Veterinary Surgeon be sent for, the case is but too often at that time beyond all chance of recovery, it having been so long tampered with by the empiric. If, under these circumstances, the Veterinary Surgeon prescribes, he is sure to get blame, for should the patient recover, the empiric will spread about that his treatment, and not that of the Veterinary Surgeon, effected the cure; or if, on the contrary, the patient dies, which probably in nine cases out of ten he will, the empiric will then say "the Veterinary Surgeon had killed him; and that had the animal remained under his care he would have recovered." In support of this assertion, the empiric has twenty cases to quote, which he has cured, and which, in his opinion, were worse than this one. But even graduated members located in large towns are not free from this annoyance, for almost every shoeing smith has—if not Veterinary Surgeon, at least Veterinary forge written on his sign-board—he thus professing to undertake to shoe and doctor horses, and dispense horse and cattle medicines. For the same reason, a boot and shoe maker might be considered competent to medically treat his customers—than which nothing can be more ridiculous.

Fourthly. It may be asked whether epizootic maladies would have prevailed to the extent they unfortunately have, had the Veterinary profession been on a better footing, and more numerous? It may be safely asserted that wherever Veterinary Surgeons have attended, they have always devised means of preventing the extension and the fatality of epizootics, by recommending *sequestration*, *quarantine*, &c., while the unscientific practitioner is far too slow in diagnosing the malady, and is ever ready with his means of curing it. Another important question is the cruelty from which unscientific practice can hardly ever be considered free. The Act for Prevention of Cruelty justly punishes for ill-using domestic animals, but the Veterinary empiric may bleed them to death, nauseate them with the most filthy nostrums, and perform the most barbarous and useless operations with impunity. The very names by which he recognises diseases are a proof of ignorance, as for instance, the braxy, the gid, black quarter, quarter evil, and stricken. Even murrain, which with him is a general designation for all maladies of an infectious type, is of ambiguous meaning, being simply derived from the Latin *mori*, to die.

Fifthly. Almost every country possesses laws which are more or less stringent against Veterinary empiricism. In France it is illegal for any one not having obtained a diploma to assume the name of Veterinary Surgeon; the penalties are heavy—damages and interest to the aggrieved parties. In Belgium, where Veterinary Schools are little more than a quarter of a century old, a law—passed in 1850—prohibits any one from practising the Veterinary art who has not a diploma. In

Holland a similar law is in force. In Saxony it is decreed that only those who possess diplomas as Veterinary Surgeons have the right to treat the maladies of domestic animals. In Bavaria also, no person can practise the Veterinary art unless provided with a diploma. In the Grand Duchy of Baden there is a decree against empirics, the penalties being heavy fines and imprisonment. All the small states of the German Confederation have enactments more or less severe against Veterinary empiricism.

A similar law would be a great advantage to this country, which it is to be remembered possesses the finest breed of horses, cattle, sheep, &c., in the world, while to the Veterinary Surgeon it would give that *status* to which he has a just right.

In the last Annual Report reference was made to the course which the Council had taken with a view of obtaining exemptions from serving on juries, &c., and of giving practical effect to the obvious meaning of that part of the Royal Charter which states that the members of the College have the exclusive right to the title of Veterinary Surgeon—a right which the large obligatory expenditure in money and time entailed by a College education gives to the graduate a fair and just claim. And a right which the public is clearly entitled to demand on its part, and should have secured to it, by such a well-defined line of demarcation as would distinguish the educated veterinary surgeon from the mere pretender.

The Council, actuated with a sincere desire to fulfil its obligations to the body corporate, has, during the past year, continued its earnest and anxious endeavours to arrive at a favorable accomplishment of the task it had before it; and, although it has not lost the hope of ultimate success, yet it has found the affair beset with great difficulty. Parliament, influenced by the vast advantages which Continental nations have derived from, firstly, educating and then protecting veterinary surgeons, will, it is hoped, afford encouragement to the profession whilst struggling for a national object.

The Council would therefore suggest that each member of the College should take an early opportunity of ascertaining the feelings of the members of Parliament who represent his county or borough, and, if possible, secure their support in the House of Commons when the Bill is presented; and they would further suggest that when he has had an interview with such members, he should communicate the result to the Secretary of the College.

The Council regrets to have to announce that two important members of the Court of Examiners have, during the past

year, tendered their resignation, viz., Mr. Quain and Mr. Field. The vacancies thus caused have been filled up by the election of Professor Ellis, of the University College Hospital, and of Professor Morton, late of the Royal Veterinary College.

On the 'Cattle Diseases Prevention Bill' being introduced into Parliament, the Council lost no time in appointing a committee to watch over the interests of the College, and in the event of inspectors being appointed, to take such steps as would ensure, if possible, their selection from amongst the members of the veterinary profession.

The Council has found it necessary to make alterations in some of the bye-laws, and which have been duly sealed and entered in the College records in accordance with the provisions of the Charter.

Copies of the new register have been sent gratuitously to masters of hounds in the United Kingdom, in order that gentlemen seeking professional aid might be able to ascertain those who are members of the body corporate.

The number of deaths that have occurred during the past year are, according to the Registrar's report, thirteen. The Council desires to notice that the veterinary profession has sustained a great loss by the death of Professor Renault, Inspector of the Imperial Veterinary Schools of France—a fact the Council deems it right to allude to, although M. Renault was in no way connected with our English institutions.

During the year ninety pupils have obtained the diploma of the Royal College of Veterinary Surgeons.

The museum has received some very valuable contributions in the anatomical preparations which have been presented by Messrs. Goodwin and Jex.

The financial statement is annexed. The balance in hand, after defraying the expenses of the year, being £420.

By order of the Council,

W. H. COATES,

Secretary.

Mr. Brown.—In proposing the adoption of the Report I hope I may be allowed to make a few observations to the meeting.

The President.—Will you move first of all the reception of the Report? It will then be open for discussion.

Mr. Brown.—Then I beg to move that the Report be received.

Mr. Wilson.—I beg to second the motion.

The President.—It will not be adopted at present. It will only be received as the Report of the Council. Until it has been received you have no right to discuss it.

The resolution that the Report be received was then put and carried.

Mr. Brown.—I was about to suggest to the meeting that the Council deserve to be congratulated upon the efforts which they have been making, not only to educate the veterinary surgeon, but also to protect him. It is gratifying to observe, although we have not succeeded as yet in obtaining those immunities which, as a profession, we have a perfect right to expect from the legislature, that those efforts will not cease to be made until we have obtained a Protection Bill, making it penal to practise the art and science of veterinary surgery without a proper license previously received. It is not necessary to say anything upon the evils which result from the absence of such an Act of Parliament. They are patent to every member of the profession; one can only wish that they were more patent to the public. If I may be allowed to comment upon the grounds that are stated for introducing a public Bill, I think some exception might be taken to this remark in the third clause of the report:—“For the same reason a boot and shoemaker might be considered competent to medically treat his customers, than which nothing can be more ridiculous.” Where arguments are advanced, one is naturally anxious that they should be perfectly sound and logical. Experience has shown that there are always a sufficient number of men ready to oppose a Bill, for what reason it is sometimes difficult to understand; therefore it is incumbent upon us not to advance arguments which they can easily upset. Now, unhappily for the reasoning in that clause, the majority of veterinary surgeons are in a sense boot and shoemakers. The question naturally stands in this shape.—If the veterinary surgeon shoes a horse, why should the man who shoes a horse not act as a veterinary surgeon? The illustration to which I have taken exception seems to me to cut with equal force both ways. That there is a necessity for the two being combined, for primary reasons, in the present state of our practice, I do not doubt; and I

think it would be very difficult to separate the trade of farrier from the profession of veterinary surgeon. I do not cease to regret the objectionable nature of the union, but under present circumstances it appears to me to be almost indispensable. If I might trespass a little further, I would say that while the Council is working for the benefit of the profession, there is yet a great deal to be done by the profession itself. It seems a sort of reproach that, considering the number of members we have in London, there should not be something in the shape of a central society of veterinary surgeons. In Leeds there is a society, and in several of the large towns of the kingdom; and I have seen a report from a society in Glasgow, apparently in a flourishing state. I remember a year or two ago this subject was discussed among the veterinarians in London, and the matter was taken up so warmly in Glasgow that they wrote to us for our rules, and founded a society before we even thought of founding one here. I hope before long we may be able to congratulate the veterinary profession upon the existence of a metropolitan veterinary society.

Professor Gamgee.—Mr. Chairman and Gentlemen, I quite feel with Mr. Brown that the objection he makes to the sentence in the report is well founded. It struck me on reading it that a word or two might have been introduced to modify that which may shock the eyes and ears of some persons. My object in rising is to draw attention to a matter of serious moment. Several years since, I believe I was the first to show that the number of veterinary surgeons in this country was quite inadequate. I was constantly addressed by members of my own profession in different parts of the country as to what would become of the many veterinarians qualified every year. "What are you going to do with them? Fifty every year from London, fifty from Edinburgh—the country will soon be overrun with veterinary surgeons." Instead of the country being overrun, we find that there are still wide tracks of it without veterinary surgeons. What I showed several years back has been demonstrated by the statistics collected through this College, namely, that empiricism has flourished to an extent that we could scarcely have expected, considering the progress of veterinary education during the last twenty or thirty years. It is my impression that one great cause of this scantiness of veterinary surgeons over the country is that in districts where they are really most wanted, they cannot, for a number of reasons that I need not at the present moment assign, obtain a proper livelihood. The way undoubtedly to strengthen the position of the pro-

fession throughout the United Kingdom is to secure, not only that we have admirable veterinarians, but also that we have for them a competent living. I need scarcely tell you that although many men speak of the necessity of curing the souls and of curing the diseases of men apart from any pecuniary considerations, it is found essential, in order to support the dignity and advance the usefulness of the medical profession, and the same with the clerical profession, to secure to them a good and substantial income. The standing of professional men rises in proportion to the emoluments which they receive. It is one of the grandest impulses we have to exertion in this country. It is necessary, especially when we find people flourishing in art and trade, that we should have the means of an independent existence in order that we should assert our rights and position throughout the country. I therefore think, if I take this Report as a guide, that the number of veterinary surgeons annually brought up seems rather to be decreasing than increasing. It is evident that we must aim at making each individual veterinary surgeon so far superior to any empiric, that he may force himself on the attention of the public; and, I have no doubt whatever, that if we can demonstrate that we are worth pounds, shillings, and pence, that the pounds, shillings, and pence will come. If cotton is worth the money, it soon reaches our ports. If butter is wanted, pay for it, and butter comes. If you will only pay for good veterinary surgeons you will get them, but if you do not pay for them you cannot have them; I really take this view of the matter—you will say, perhaps, not a very exalted view. Nevertheless, I feel that there is much truth in it. I observe, for example, this year that there are 68 new members of the Royal College of Veterinary Surgeons as against 90 last year. I unhesitatingly affirm that instead of 68 we ought to have 168 annually brought forward. I will tell you why. Not probably that the full number of 168 would in the long run be required. I believe they would, but possibly that number would not be required to fill the gaps, and to supply the wants of the community generally over the country. But, as I have always insisted, we cannot expect, should we get 168 gentlemen to enter the profession annually, that they will all remain with us; we cannot expect that they will all attain to the position of practising veterinary surgeons. The public will exercise its right of selection; the best will win, and the weak will fall back. But you must remember that the United Kingdom has yet to be supplied. Disorders are raging to a frightful extent, and we cannot really spare a

single man, much more provide for the hundreds and thousands who are actually needed in Canada, Australia, India, and in many other parts, with the progressive development of agriculture and industrial pursuits. On the subject of veterinary education, it is necessary that some few words should be said. I believe the Council of the Royal College of Veterinary Surgeons would do well—

Professor Simonds.—Pardon me, I think you are somewhat out of order. The Council has nothing to do with the education of the veterinary pupil.

Professor Gamgee.—We have a great deal to do with the examination of the veterinary pupil, and that is what I am coming to.

Professor Simonds.—Yes, with the examination, not with the education.

Professor Gamgee.—With the examination. That is what I am specially coming to. I am obliged to pass through one channel in order to reach the other. I wish simply to state that the veterinary colleges in this country, now three in number in active operation, and one in embryo, are to a certain extent actuated by motives which are familiar to each of the four individually, and I trust the whole four may be actuated by motives which relate to the general good of the profession. There are difficulties in the way of the veterinary colleges combining so as to secure that the educational standing shall be elevated *pari passu* with the social standing of the veterinarian. I believe the veterinary students of the present day are better than the veterinary students of twenty years ago. I believe that the veterinary surgeons that are made in the present day are decidedly in advance. We are not going back; but, as in every other profession, we are getting a better educated class of young men. Naturally, with a better material we can make a better compound; and undoubtedly the veterinary profession is rising. But in our own sphere of professional education, unfortunately, the advance is not such as it would be desirable to obtain. If I may suggest one way in which the Council of this College can probably aid in inducing a development in the system of veterinary education itself—I cannot say that these changes can be effected suddenly—but it would be by adopting a system which has lately attracted very much attention in the medical world, of having examinations for the elementary sciences at one period, and examinations of a practical kind at another period. I think it is fair to the veterinary student that by the time he has successfully crammed his anatomy, his chemistry, and his physiology, he should then have the

opportunity of being thoroughly tested in his knowledge of those sciences, and perhaps tested in a more complete manner than he is at the present day. He can then be left perfectly free during the after period to work at practical subjects, and then this College can efficiently test him upon these points. I think the time has arrived when the students in our schools can afford to pay the former fee of ten guineas for examination. It was reduced to seven. I believe our students would as willingly pay the ten as the seven. Then there could be no difficulty in having an examination at one period which should cost five guineas, and another examination at another period which should also cost five guineas. That arrangement, instead of interfering with the income of the College, would largely augment it. And it is essential, I think, in order to secure an increase in the number of our students, and in order to increase the prosperity of the College itself, that certain departments of study should be added, departments of study which are partially gone over, but which it is impossible, without some extension of the curriculum, to grasp. At the present moment, fortunately, the whole country is turning its attention to sanitary questions, in which the veterinary profession must play a most important part. The veterinary surgeon will be needed now where he was not needed before; the veterinary surgeon, indeed, will have to look at diseases in the lower animals from a totally different point of view—as a comparative pathologist. In this sense he will find occasions where he will be raised to the level of the members of the sister profession, where he can largely assist them and largely co-operate with them, and advise them in a very desirable manner. The section which must be added to the curriculum, and concerning which the Council must take some pains to consider whether it will not be desirable to add it to their Examining Board, is the section of Natural History. I hold that if we proceed for the next four or five years without very materially considering the desirability of testing the knowledge of the veterinary student on such subjects as zoology and botany, we shall fail in doing that which we owe to the country, and that which, indeed, we owe to the schools; because the schools will flourish in proportion as the students are accomplished veterinarians, and prove themselves useful throughout the kingdom. If you will allow me to go on, for we have only one opportunity in the course of the year of meeting and talking to each other, I will crave your indulgence for a few moments longer. I speak because I feel the great importance of these matters, and because I feel, as members of the same profession, that

we have not the opportunity we ought to have to open our minds to one another, and to talk over our ideas. On this point of natural history I hold it absolutely essential that the veterinary surgeon should have a basis of knowledge in zoology, botany, and geology; not to be treated by three different professors, but to be treated by a professor of natural history. I notice constantly that veterinary surgeons are incapable of grasping certain of the fundamental ideas with regard to the distribution of diseases, because they have not understood the laws which govern the geographical distribution of certain geological strata, and the geographical distribution of animals and plants. Now, I certainly know from experience, from travelling, and from investigation in different parts of the country, that if I go to certain districts in Ireland I can there find special diseases of animals, and if I go to certain districts in Scotland I can there find special diseases of animals, not found elsewhere. People might live for a century in London and never hear of certain maladies which attack the sheep and other animals in this country. I lived two or three years in Edinburgh, and never heard of the existence of such a disease as the cripple or fragility of bone, which I have been in the habit of describing in my lectures as constantly occurring in central Europe. I never knew that I should find it within forty miles of Edinburgh, or that I should find it in certain districts in Ireland. Again, you have the periodic ophthalmia of horses, which is confined to certain districts. Why should we not see it in Edinburgh, but find it always in Liverpool, in Dublin, and in London? It is the same with the distribution of animals themselves. We have the Natterjack Toad in County Kerry, and we do not get it in any other part of the country. Unless we have a good foundation of natural history we cannot understand this and other phenomena of the same kind. But the value of the study of natural history starts out in a remarkable manner when we consider the subject of helminthology, relating to the internal parasites concerning which so much has been learned of late years, and of which so little is yet known by both the medical and the veterinary profession combined. I do not wish to put you behind the medical profession in this respect. I was speaking to a member of the medical profession this morning, a most eminent man, and he told me he was recently at Wolverhampton, where individual medical practitioners confess to having from two to three hundred cases of tape-worm every year under treatment, without knowing it came from eating measly pork. We have between one and two per cent.

of flesh-worm or trichinous disease in man, and if it is so prevalent in man it must be equally prevalent in the lower animals. There are also many points in comparative pathology to be known, without which it is impossible to understand many of the diseases in the lower animals. I have drawn attention and Professor Simonds has drawn attention to it—that it is absolutely essential that botany, geology, and zoology should be studied in a course of natural history; until we do that we cannot expect veterinary surgeons can hold, with credit to themselves, the positions which I hope they will very soon hold, as inspectors of stock and inspectors of provisions throughout the kingdom—positions which I trust will give them large emoluments, and positions which I trust will, in course of time, tend to raise them in the opinion of their countrymen. I will not now enter at length into these points; I only wish to impress upon your minds that it is expedient, in the first place, that we should assert the importance of our profession by our education; and, in the next, that we should insist upon the importance of our profession by pulling together, and having numerous opportunities for discussion. I think what is done in the Medical Council should be done here; that at our monthly meetings, when important discussions take place, we should have reporters present. We should then, in course of time, attain to something like a general understanding as to what is desirable and what is not. As to the past, veterinary colleges have worked in one way, and veterinary surgeons have worked individually in another. There has not been that union which is strength. There has been no practical way of bringing it about; and the only way in which it can be brought about is by our combining together under the banner of the Royal College of Veterinary Surgeons. Since 1844 we have made but little progress, but I think we may now have a starting-point for something better, and something more durable.

Mr. Mayer.—It is gratifying to me, as one who has been prevented from attending many of these annual meetings of late years, to find that the ground originally mapped out, upon which the foundations of this College were to be founded, is no longer, as it were, to be kept fallow; and that the Council have taken a step in the proper direction, by seeking to secure to the veterinary surgeon those privileges which the founders of this College contemplated, and which have been too long allowed to remain dormant. I quite agree with many of the remarks which have fallen from the previous speakers. It appears to me essential, in order to get well-educated men into the profession, that they should have those rights and immunities which are

claimed in the sister profession. I am sure, as soon as you secure these, that a better class of men will enter our schools, and that a larger number will be found to enter. I may venture to make one or two remarks upon the Report which the Council have laid before us to-day. The first remark that occurs to me is, how far it will be judicious to legalise so large a number of practitioners as now style themselves veterinary surgeons? The Report says that there are something like 3000 of them. I think it is quite right that any Act of Parliament we may obtain should be retrospective, up to the date of our deed of Charter of Incorporation; but it is only fair to the members of the profession generally that the Council should well consider and discuss how far it will be fair to legalise men who have assumed our title since the Charter was obtained; I do not mean the title of "veterinary surgeon," but the title of "Member of the Royal College of Veterinary Surgeons." There are many men practising in the country calling themselves members of the Royal College of Veterinary Surgeons who are not members. A man may call himself a veterinary surgeon, and a man may call himself a surgeon, and there is no Act to prevent his doing so.

The President.—By a recent Act a man cannot call himself a surgeon now.

Mr. Mayer.—Another remark I wish to make is, that I think it would be judicious in future reports to state what alterations have been made in the bye-laws. It is not possible for every member to have an opportunity at all times to see the alterations that occur, and I think it is very desirable that this information should be communicated to the profession in the annual reports of the Council. With these few remarks I beg to express my gratification at the steps which are now proposed to be taken for the attainment of the original intentions of the founders of the institution.

Mr. Helmore.—After so much that has been said, I shall not detain you long with any remarks of my own. Mr. Brown has called attention to the third reason given by the Council why they seek this Act of Parliament. I was in hopes he was going to say more upon the subject, because, for my part, I think the reasons are not such as should emanate from a body of men possessing a Charter of Incorporation. I will illustrate what I mean by quoting an extract from the report itself. It says—"These persons are generally the first to attend the maladies of domestic animals." I must say that I do not find it so; my experience goes to show the contrary; and that is one reason why I object to the remark. Then it says—"If the veterinary surgeon be sent for, the

case is but too often at that time beyond all chance of recovery, it having been so long tampered with by the empiric. If, under these circumstances, the veterinary surgeon prescribes, he is sure to get blame." I do not find that to be the case either. This statement does appear to me to be ridiculous, as well as contrary to fact. I speak with all respect for the committee who were appointed by the Council to investigate the matter, and to report upon it; still, it is so contrary to fact, and I believe my remarks will be endorsed by every gentleman present who has had any experience, that I object altogether to the insertion of these reasons in the Report. Again, it says—"If, on the contrary, the patient dies, which probably in nine cases out of ten he will." Whether this is the fact I do not know, but there are a number of men who have not graduated at the Royal College of Veterinary Surgeons who are able to do a little better than that, and who are more successful in their treatment than is represented here. Then it goes on to say—"The empiric will then say the veterinary surgeon had killed him, and that had the animal remained under his care he would have recovered." All this kind of reasoning appears to me to be too trivial and of too abstract a nature to be put into the statement of a legalised professional body, as a ground for seeking the privilege of an Act of Parliament.

The President.—That is one of the reasons brought forward why the country should be provided with better veterinary surgeons. When you say it is not the case that empirics act in this manner, it may be that it is not the case in your neighbourhood. I know it is the case in the country generally. I was the author of that statement, and I did not insert it without a practical knowledge of the fact. I have been informed that in the far distant parts of the country, where animals are attacked, the empiric is always the first to attend; that he keeps the animal in his hands two or three days; and after that, if the animal does not recover, the veterinary surgeon is sent for, and then the veterinary quack runs from public-house to public-house, and from farm-yard to farm-yard, and says, "They're sure to kill him, he is in the hands of the *vet.*" I believe it is the case that if the animal dies the blame is imputed to the veterinary surgeon; and if the animal recovers, the man says that it was through his previous treatment.

Mr. Helmore.—If men are in that position they deserve our warmest sympathy. Yet for all that, I do not think it is a suitable reason, or that it is suitable language, with which to approach the Government for an Act. It is one reason, it

appears to me, why, as Professor Gamgee desires, the education of the veterinary surgeon should be extended. By extending the education of the veterinary surgeon, we shall introduce into the profession a better class of men, who will be able to contend with the empiric in the country. But so long as the empiric, as he may be called, is thought by gentlemen in the country who wish to employ the services of a veterinary to be superior to any class whatever, so long will empiricism flourish. The public will always have the opportunity of selecting their own veterinary surgeons; and by raising the standard of education I think the end in view will be accomplished. Before sitting down I should like to ask one question—it is, whether gentlemen who come to the Veterinary College, and do not pass their examinations, are to be excluded from using the name of veterinary surgeon?

The President.—I can only give you this answer. In France, without having any special law, a pupil may come up to any of their schools for seven years; should he be rejected on examination from year to year, and if at the end of the seven years he fails to obtain a diploma, and should then take the title of veterinary surgeon, the law is put in force directly. He is not only punished for having assumed a title to which he has no right, but he has also to pay damages to the nearest veterinary surgeon who may think himself aggrieved.

Mr. Helmore.—I might add that another reason why the standard of education should be raised is because I believe the proportion of successful candidates has been very great, much greater than it was before, showing that the education is making an advance upon the examination. I heard this morning that thirty-seven out of thirty-nine candidates had passed. That is certainly a proportion which did not obtain in my days.

Mr. Mayer.—I believe there is no wish expressed that persons should not call themselves veterinary surgeons, but that they should not call themselves members of the Royal College of Veterinary Surgeons.

The President.—That is the object of the Act. The style and title of member of the Royal College of Veterinary Surgeons is the one by which we go. It has been stated just now that there are cases where people have assumed the title of member of the College without having obtained a diploma.

Mr. Brown.—May I mention an instance? I have seen a printed bill-head with a name which I am not going to

gentlemen have called attention. At all events, I hope we shall soon be in a position as free and as secure as that of the surgeon. I have much pleasure in moving the adoption of the Report.

Mr. Moore.—If you read the Act exempting persons from serving on juries, you will see it specifies the members of all “chartered bodies.” When I was summoned some time ago I pointed that out to the man, and I have never been troubled about it since. Much has been said about the education of the pupils. I think it is all beginning at the wrong end. What would be the use of sending a lecturer to savages? You find the farmer and other proprietors of stock are not capable of distinguishing between the abilities of the veterinary surgeon and the empiric. I say, first educate the farmer so that he can understand the diseases of stock, and then he will be able to distinguish between the veterinary surgeon and the empiric. With this observation I beg to second the motion.

Mr. Helmore.—Does Mr. Lines move that the Bill be proceeded with?

The President.—Allow me to say a word upon that subject. The Committee gave themselves a vast deal of trouble, and they laid their report before the Council. The Council at first eagerly adopted it, and agreed to every clause in the Bill, only making slight alterations. Then, for some reason, I cannot tell what, the Council altered their opinion, and seemed rather afraid of proceeding with the Bill. They said they would have a legal opinion upon it, and that legal opinion was obtained. But instead of proceeding with the Bill, it was thought desirable to have another legal opinion, which postponed the time for giving the Parliamentary notices. I then took it upon myself to have it introduced as a public Bill. There are reasons stated in the Report why it should take the form of a public Bill; but I do not expect it will pass in that form. The notices should have been given, and it should have gone in as a private Bill; and if that had been done we should have drawn up petitions, and have pressed on the Bill as fast as we could, and then we should have had a chance of success. But as a public Bill I do not think the Government will take it up; the reasons assigned are not strong enough to induce them to adopt it as a public Bill. As you are about to elect members of the Council in the room of those who go out by rotation, I advise you to elect gentlemen who will protect your interests. Unless there is a little pressure from without upon the Council, I do not think you will succeed in getting the Bill. Twenty

years have elapsed, and nothing has been done; and if you do not take the thing in hand and put your shoulders to the wheel, nothing will be done for the next twenty years. With respect to educating the veterinary surgeon, I would remark that you will never have an educated class of veterinary surgeons until you secure them a respectable living. You cannot expect a man with an education will attend your Colleges and become a veterinary surgeon, to find, when he goes into the country and has to contend with empirics, that he cannot make more, perhaps, than £150 or £200 a year. Now, this Bill is very moderate in its provisions; it interferes with no one who is actually in practice; but it says this—that after the passing of this Bill, &c., thus a man having practised without a diploma, the son cannot succeed him unless he shall have obtained one. The restriction thus applied prospectively would injure no one, and that is the Bill we ought to have introduced, for I do not think the Legislature would have the slightest objection to it.

The motion that the Report be adopted, was then put and carried.

The President.—The next business is to elect the Council.

Mr. Wilkinson.—I have a word to say before you do that. The way in which this part of the business is usually conducted is not satisfactory. I would suggest that you should wait until all the names have been proposed, and then make your selection.

Mr. Dale and *Mr. Tremlett* were appointed scrutineers.

The following was the result of the ballot:

Professor Varnell	35	Mr. J. Lawson	45
Mr. R. Hunt	37	„ Geo. Brown	28
„ C. Dickens	28	„ J. Moon	27
„ T. Greaves	25	„ J. Broad	24
„ W. Pritchard	23	„ W. Field	18
„ E. Harrison	11	„ R. C. Gardiner	9
„ W. Partridge	5		

The President declared the election to have fallen on Messrs. J. Lawson, R. Hunt, Geo. Varnell, Geo. Brown, Charles Dickens, Jas. Moon, and Thos. Greaves.

It was next decided by lot that Mr. Lawson take the place of Mr. Jex, retired.

A vote of thanks to the President was carried by acclamation, for his kind and courteous conduct in the chair, after which the meeting broke up.

THE ANNUAL DINNER took place in the evening, at the London Coffee House, Bishopsgate Street, the President in the chair. The party was not so large as on some former occasions, but it lacked no spirit of conviviality nor good feeling. The festivities were kept up to a late hour, when all dispersed much gratified with the occasion which had brought them together.

Extracts from British and Foreign Journals.

THE CROONIAN LECTURE ON THE COAGULATION OF THE BLOOD, DELIVERED BEFORE THE ROYAL SOCIETY, JUNE 11, 1863.

By JOSEPH LISTER, Esq., F.R.S., F.R.C.S.

(Continued from p. 318.)

It is a very curious question—What is the cause of the blood remaining so much longer fluid in some vessels than in others? I believe that we must accept it simply as an ultimate fact, that just as the brain loses its vital properties earlier than the ganglia of the heart, so the heart and principal vascular trunks lose theirs sooner than the small vessels of the viscera, or than more superficial vessels, be they large or small. We can see a final cause for this, so to speak. So long as the heart is acting, circulation will be sure to go on in the heart and principal trunks; whereas, on the contrary, the more superficial parts are liable to temporary stagnation, and occasionally to what amounts to practical severance from vascular and nervous connection with the rest of the body; and it is, so to speak, of great importance that the blood should not coagulate so speedily in the vessels of a limb thus circumstanced as it does in the heart after it has ceased to beat. Were it not for this provision, the surgeon would be unable to apply a tourniquet without fear of coagulation occurring in the vessels of the limb. As an illustration of the importance of a knowledge of these facts, I may mention a case that once occurred in my own practice. I was asked by a surgeon in a country district to amputate an arm of which he despaired. The brachial artery had been wounded, as well as veins and nerves, and at last, being foiled with the hæmorrhage, he wound a long bandage round the limb at the

seat of the wound as tightly as he possibly could. It had been in this condition with the bandage thus applied for forty-eight hours when I reached the patient, and the limb had all the appearance of being dead. It was perfectly cold, and any colour which it had was of a livid tint. But having been lately engaged in some of the experiments which I have been describing, and having thus become much impressed with the persistent vitality of the tissues and the concomitant fluidity of the blood, I determined to give the limb a chance by tying the brachial artery. Before I left the patient's house he had already a pulse at the wrist, and I afterwards had the satisfaction of hearing that the arm had proved a useful one.

One of the two arguments in favour of activity on the part of the vessels as a cause of fluidity of the blood having been completely disposed of, let us now consider the other—viz., the rapid coagulation of blood shed into a basin, appearing at first sight to imply a spontaneous tendency of the blood to coagulate, such as would have to be counteracted by the vessels. This, also, has proved fallacious.

In the first place, it appears that the coagulation, after all, does not go on in a basin so suddenly as one would at first sight suppose, but always commences in contact with the foreign solid. When blood has been shed into a glass jar, if, on the first appearance of a film at the surface, you introduce a mounted needle, curved at the end, between the blood and the side of the glass, and make a slight rotatory movement of the handle, you see through the glass the point of the needle detaching a layer of clot, whatever part you may examine. The process of coagulation having thus commenced in contact with the surface of the vessel into which the blood is shed, may, under favorable circumstances, be ascertained to travel inwards like advancing crystallization towards the centre of the mass. It appears, however, that this extension of the coagulating process would not take place had not the blood been prepared for the change by contact, during the process of shedding, with the injured orifice of the blood-vessel and with the surface of the receptacle. I have only very recently become acquainted with the remarkable subtlety of the influence exerted upon blood by ordinary solids. I was long since struck with the fact, that if I introduced the point of an ordinary sewing-needle through the wall of a vein in a sheep's foot, and left it for twelve hours undisturbed, the clot was still confined to a crust round the point of the needle, implying that coagulum has only a very limited power of extension. I thought, therefore, that by

mention, with "Member of the Royal Veterinary College" written underneath.

The President.—There may be an instance or two.

Mr. Brown.—It is the only one I have seen. It was so exceedingly ingenious and so well done that I did not notice it at first, although I had been in the habit of seeing the print for some time. It did not state "Member of the Royal College of Veterinary Surgeons," but "Member of the Royal Veterinary College."

The President.—I believe every student claims the right to call himself a Member of the Veterinary College.

Mr. Brown.—That is what I want to ask Professor Simonds—whether, on payment of an extra fee or anything of that kind, persons are entitled to assume the title of Member of the Veterinary College?

Professor Simonds.—A person entering as a pupil is not entitled to call himself a member of the College. The term "Member of the Veterinary College" was first adopted on the occasion of a man passing the examination which then existed for the pupils of the school. Those persons who were incorporated in the year 1844, as a whole, were either members of the Veterinary College or members of the Scotch school.

Mr. Lines.—If we obtain an Act, may we not also claim exemption from serving on parochial offices, which, I think, is essential to the profession?

The President.—In the first Bill which was prepared that exemption was inserted.

Professor Gamgee.—The seventh clause is—"Any person being a Member of the Royal College of Veterinary Surgeons, actually practising, shall be exempt from serving on all juries and inquests whatsoever."

Mr. Lines.—That does not include parochial offices, such as the office of overseer. It would be very inconvenient for veterinary surgeons to have to attend to the duties of an overseer.

The Secretary.—The clause in the original Bill was to this effect:—

"VII.—Any person who shall be a qualified veterinary surgeon in accordance with the Charter, actually practising, shall be exempt, if he shall so desire, from serving on all juries and inquests whatsoever, and from serving all corporate, parochial, ward, hundred, and township offices, and from serving in the militia; and the name of such person shall not be returned in any list of persons liable to serve in the militia, or in any such office as aforesaid."

The President.—That was the original clause, but it was altered by the Council.

Mr. Helmore.—Unless some cause is assigned by the solicitor, I think that clause had better be drawn in strict accordance with the clause which regulates the College of Surgeons and other bodies.

The President.—The solicitor did not strike it out. The Bill is still before the body corporate, and the clauses are still an open question. The Bill is not yet in the House, and if it were in the House it might not pass. Therefore it will come before the Council again next year, and any suggestions the body corporate may make will be considered. There was also a clause put in exempting members of the profession from the duty on horses, providing they had only one horse in use. That clause, which is also in the Medical Bill, was struck out by the Council. So far as the solicitor is concerned, he has only extended the preamble, and altered the wording of the clauses, as they appeared in the original Bill.

Mr. Helmore.—If the matter is still open to the consideration of the Council, I am quite willing to leave it in their hands. There is only one more remark I would make—that when this Bill comes on in the ensuing session of Parliament, the Council should prepare a form of petition, which might be sent to every veterinary surgeon for signature, and then presented to the House in support of the Bill.

The President.—That would have been done in the present session if the Bill had been proceeded with. The notice is in the House, but I do not think the Bill will go on. It will now be competent to any gentleman to move that the Report be adopted.

Mr. Dickens.—In addition to copies of our new register being sent to masters of hounds, I think they ought also to be sent to the President of every known agricultural association in the kingdom. They are likely as anybody to be our employers.

The President.—It was my opinion that the list should be distributed gratis. It was printed for that purpose, but unfortunately the intention was overruled by the Council. I think the suggestion might come before the Council at a future meeting.

Mr. Lines.—I rise to move the adoption of the Report, but I cannot do so without saying that I have been anxiously listening to hear some reasons given why this Bill should not be proceeded with at once. I do trust the Council, if they have the means at hand, will introduce it into the House, and follow it up this year. We shall then be the sooner relieved from those objectionable practices to which

The election of six Vice-Presidents was then proceeded with.

The following gentlemen were proposed:

- Mr. Helmore, by Mr. Lawson.
- „ Robertson, by Professor Gamgee.
- „ Pritchard, by Mr. Robinson.
- „ Harrison, by Mr. Wilkinson.
- „ Broderick, by Mr. Ernes.
- „ Gardiner, by Mr. Ellis.
- „ Burrell, by Mr. Withers.
- „ Goodwin, by Mr. Moon.
- „ J. R. Cox, by Mr. Silvester.
- „ Thacker, by Mr. Wilkinson.
- „ Harpley, by Mr. Burley.
- „ Sparrow, by Professor Simonds.

The result of the ballot was for—

Mr. Goodwin, 16; Mr. Harpley, 12; Mr. Pritchard, 9; Mr. Harrison, 9; Mr. Thacker, 8; Mr. Helmore, 8; Mr. Cox, 7; Mr. Robertson, 7; Mr. Broderick, 6; Mr. Gardiner, 5; Mr. Sparrow, 5; and Mr. Burrell, 1. Whereupon Messrs. Goodwin, Harpley, Pritchard, Harrison, Thacker, and Helmore, were declared duly elected.

It was moved by *Professor Gamgee*, and seconded by *Mr. Ellis*—

“That Mr. Coates be elected Secretary and Registrar for the ensuing year.”

On the ballot being taken, Mr. Coates was declared unanimously elected.

By order of the Council,

W. H. COATES, *Secretary*.

NEW MEMBERS OF THE PROFESSION.

STUDENTS OF THE EDINBURGH VETERINARY COLLEGE.

- Mr. Peter Moir Edinburgh.
- G. Webster Anderson Rayne, Aberdeenshire.
- Wm. C. Lawson Bolton, Lancashire.
- John Smith Ulverston, Lancashire.
- John Henry Rhodes Manchester.
- Thomas Stokoe Hay, Breconshire.
- Robert Hall Sedgefield, Durham.
- William Gould Pendleton, Manchester.
- James Martin Brookville, co. Meath, Ireland.
- James Taylor Co. Down, Ireland.

Mr. Hugh Jones	Llanllyfri, Caernarvon, Wales.
— Frederick Danby . . .	Holtby, Yorkshire.
— David Rowlands	Llanrhaiadr-yr-Mochant, Wales.
— Thomas Barker	Stokesley, Cleveland, Yorksh.
— David Maclachlan . . .	Paisley, Renfrewshire.

STUDENTS OF THE NEW VETERINARY COLLEGE.

Mr. William Douthwaite . .	Beverley, Yorkshire.
— James Horsburgh	Dalkeith.
— Ralph Baillie	Edgehead, Dalkeith.
— Chas. J. Whitworth . . .	Boston, Lincolnshire.
— G. H. Pemberton	Sedgley, Staffordshire.
— Daniel Gibbon	London.
— Jonathan Kingrose . . .	Weaverthorpe, Yorkshire.
— Wm. Henry Brooks	Grantham, Lincolnshire.
— James Keane	Charleville, co. Cork.
— Robert Armstrong	Annan, Dumfriesshire.
— Geo. Francis Lamb	London.
— William Edwin Litt . . .	Shrewsbury.
— William Fordie	Glasgow.
— D. Cuthbert Smail	Blairgowrie, Perthshire.
— James Dunlop	Dreghorn, Ayrshire.
— Robert Brydon	Burncastle, Berwickshire.

Veterinary Jurisprudence.

AUSTRALIAN LEGISLATIVE ENACTMENTS WITH REFERENCE TO PLEURO-PNEUMONIA.

SUPREME COURT.—SITTINGS IN BANCO IN EASTER TERM.

MONDAY, MARCH 21ST, 1864.

Before their Honours Chief Justice STAWELL, Mr. Justice BARRY, and
Mr. Justice WILLIAMS.)

STICK *v.* HUDSON.

AN appeal stated under the Act No. 159, by magistrates in petty sessions, at Cranbourne, John Stick was informed against under the Pleuro-pneumonia Acts, for that, on the 16th December, 1863, he did "take nine head of cattle into the district of Yallock, which had been proclaimed a clean district, the said cattle not being at that time certified to be free from disease by a commissioner appointed for that purpose, contrary to the Act" No. 136. It appeared that there was not any commissioner who could grant the certificate required by the Act No. 136.

Mr. Fellows for the appellant; Mr. Harris for the respondent.

Mr. Fellows stated that the whole question was whether a conviction

proper management it might be possible to keep blood fluid in a vessel of ordinary solid matter lined with clot. But various attempts made with this object failed entirely, till I lately adopted the following expedient:—Having opened the distal end of an ox's jugular vein containing blood and held in the vertical position, taking care to avoid contact of any of the blood with the wounded edge of the vessel, I slipped steadily down into it a cylindrical tube of thin glass, somewhat smaller in diameter than the veins, open at both ends, and with the lower edge ground smooth in order that it might pass readily over the lining membrane, and so disturb the blood as little as possible by its introduction, and influence only the circumferential parts of its contents. The tube was then kept pressed down vertically upon the bottom of the vein by a weight, in a room as free as possible from vibration, and I found, on examining it at the end of twelve hours, that the clot was a tubular one, consisting of a crust about one eighth of an inch thick next the glass and the part exposed to the air, but containing in its interior fluid and rapidly coagulable blood. In another such experiment, continued for twenty-four hours, though the crust of clot was thicker, the central part still furnished coagulable blood.

But it may perhaps be argued by those who say that the blood-vessels are active in maintaining fluidity that the small portion of the vein covering the end of the tube was acting upon the blood, which certainly was fluid where in contact with it, the clot being in the form of a tube open at the lower end. To guard against such an objection I made the following experiment:—I extended a tube like that above described by means of thin sheet gutta percha, contriving that the internal surface of the gutta percha should be perfectly continuous with that of the glass tube. The lower part of the gutta-percha tissue was strengthened by a ring of soft flexible wire, such as is used by veterinary surgeons for sutures, and the wire was also extended upwards to the top of the glass so as to maintain the rigidity of the gutta-percha portion during its introduction into a vein, but at the same time, from its softness, permit the gutta-percha part to be bent at a right angle after it had been introduced, and so close the orifice of the glass tube with ordinary solid matter. At the same time I performed a comparative experiment, to which I would invite particular attention, although I am sorry at this late hour to occupy the attention of the society so long. I tied a thin piece of gutta-percha tissue over the lower end of a similar glass tube, and simply poured blood into it from the

jugular vein of an ox. I wished to compare the condition of blood which had been simply poured into a tube with blood which had been introduced without any disturbance of its central parts. But in order to make the experiment a fair one, as it might be said that the blood poured from the vein had been more exposed to the air than that into which the tube was slipped, I proceeded in the following way:—I obtained a long vein containing plenty of blood, and having first filled the second tube with the gutta-percha bottom by simply pouring blood into it from the vein, I cut off a portion of the vein which had been thus emptied, and having tied one end and everted the lining membrane of the other end, and having also everted the lining membrane of the orifice of the remainder of the vessel which was full, I poured the blood from the full portion through the air into the empty part. In doing this I had difficulty in getting blood enough, and it passed through the air in slow drops, and that only when the vein was squeezed by my warm hand. At last, having introduced sufficient for the purpose, I slit down the compound tube and bent its gutta-percha portion, and left both tubes for awhile undisturbed. At the end of three hours and a half I found that the blood which had been simply poured in was a mass of clot, and fluid squeezed from it yielded no threads of fibrin, coagulation being complete. How long it had been so I do not know. I did not examine the other blood until seven hours and three quarters had expired, and then found that, just as in the cases where a simple glass tube was introduced, the clot was tubular, and the chief part of the blood was still fluid in its interior, the only difference being that in this case the clot formed a complete capsule, being continued over the gutta percha instead of being deficient below, as it was when the vein closed the end of the tube. Now, if we consider the two parts of this comparative experiment, we see that the receptacles in which the blood was ultimately contained were precisely similar in the two cases—viz., glass tubes closed below with gutta percha; and that the blood which was simply poured into the tube was much less exposed to the air than the other, and also was not subjected, like it, to elevation of temperature, a circumstance which promotes coagulation; but yet this blood became completely coagulated in a comparatively short time, whereas the other after a much longer time was coagulated only in a layer in contact with the foreign solid. But in the latter case the blood had been so introduced as to avoid direct action of ordinary matter on any but the circumferential parts of it; whereas in the former, though poured quickly,

it had run down the side of the glass, and, as a consequence of this almost momentary contact with the foreign solid, the central parts, like the circumferential, underwent the process of coagulation.

Mysterious as this subtle agency of ordinary solids must appear, its occurrence is thus matter of experimental demonstration, and by it the coagulation of blood shed in a basin is accounted for; while it is also exclusively shown from this experiment that the blood, as it exists within the vessels, has no spontaneous tendency to coagulate, and therefore that the notion of any action on the part of the blood-vessels to prevent coagulation is entirely out of the question. The peculiarity of the living vessels consists not in any such action upon the blood, but in the circumstance (remarkable, indeed, as it is) that their lining membrane, when in a state of health, is entirely negative in its relation to coagulation, and fails to cause that molecular disturbance, or, if we may so speak, catalytic action, which is produced upon the blood by all ordinary matter.

I afterwards found that the simplest method of maintaining blood fluid in a vessel composed entirely of ordinary matter was to employ a glass tube similar to those above described, except that its upper end was closed by a cork perforated by a narrow tube terminating in a piece of vulcanized india-rubber tubing that could be closed by a clamp. This tube was slipped down into a vein till the blood, having filled it completely, showed itself at the orifice of the india-rubber tubing, to which the clamp was then applied. The whole apparatus was now quickly inverted, and the vein was drawn off from over the mouth of the tube, which was then covered with gutta-percha tissue to prevent evaporation. After the inverted tube had been kept undisturbed in the vertical position for nineteen hours and three quarters, coagulable blood was obtained from the interior of the clot.

We have seen that a clot has but very slight tendency to induce coagulation in its vicinity unless the blood has been acted on by an ordinary solid; and it is probable that with perfectly healthy blood it would be unable to produce such an effect at all. This appears to me to be very interesting physiologically, but especially so with reference to pathology. I must not now go fully into the circumstances that led me to it, but I may express the opinion I have formed—that clot must be regarded as living tissue in its relation to the blood. It is, no doubt, a very peculiar form of tissue in this respect, that it is soft, easily lacerable, and easily impaired in its vital properties. If disturbed, as in an aneurism, it will readily be

brought into that condition which leads to the deposition of more clot; but if undisturbed, it not only fails to induce further coagulation, but seems to undergo spontaneous organization. I have seen a clot in the right side of the heart, and extending into the pulmonary artery and its branches, unconnected with the lining membrane of auricle or ventricle or with the pulmonary artery, except at one small spot, where it had a slight adhesion, developed into perfect fibrous tissue, by virtue, it would appear, of its own inherent properties. Another observation which I once made, and which then completely puzzled me, now seems capable of explanation. In laying open the blood-vessels of a dead body, I observed in many of the veins a delicate white lace-like tissue, which evidently must have been formed from a clot. This I now believe to have had the same relation to the coagulum as the flimsy cellular tissue of old adhesions has to lymph.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, HELD MAY 24, 1864.

PRESENT: Professors Simonds and Gamgee, Messrs. Braby, Brown, Burley, Ellis, Ernes, Greaves, Hunt, Lawson, Moon, Robinson, Silvester, Wilkinson, Withers, and the Secretary.

WILLIAM ERNES, Esq., in the Chair.

The minutes of the preceding meeting were read and confirmed.

The election of a President for the ensuing year was then proceeded with.

It was moved by *Professor Gamgee*, and seconded by *Mr. Lawson*—

“That *Mr. Hunt* be elected President for the ensuing year.”

On the ballot being taken, *Mr. Hunt* was declared duly elected.

Mr. Hunt having taken the chair, returned thanks for the honour of his election.

It was moved by *Mr. Silvester*, and seconded by *Mr. Secker*—

“That a vote of thanks be given to the late President for the energetic and able manner in which he had discharged the duties of his office during the past year.”—Carried.

Mr. Ernes returned thanks, and at the same time handed to the President the official key of the Royal Charter and Seal.

under the second of the two Pleuro-pneumonia Acts (No. 136 and No. 123), could take place after the expiration of the first Act, which was only temporary; whether, in fact, the second Act was not a mere adjunct to the first Act, and an adjunct which expired with the Act to which it was adjoined. The first Act (No. 126) was passed 30th April, 1861, and was to continue in force for one year, and thence until the end of the then next session of Parliament. The second Act (No. 136, consisting of but one section) was passed 14th May, 1862, when the first Act had still sixteen months of further time to continue in force. The second Act therefore operated for sixteen months, and then, with the first, expired. *M'William appellant v. Adams respondent*, 1 Macqueen, 120—General statutes on the same subject matter are to be read as one statute.

Mr. Harris.—This second statute can well stand by itself. It goes beyond the first. For a certain purpose, it continues the first. *Ex parte Higinbotham*, 1 D. P. Cases, 200; *The Queen v. Stock*, 8 Ad. & Ell. 405.

Mr. Justice Williams.—In that case the second Act (39 Geo. III, cap. 79) was passed just as the other (36 Geo. III) was expiring; and the second Act was workable without the first. Here the first had still sixteen months to run, and the second is entirely unworkable without the first.

The Chief Justice.—It is a *casus omissus*. The second Act seems to have been drawn hastily, and it seems to have been assumed that it would have continued the first; but it did not do so.

Appeal allowed, with costs.

In commenting on this case, the *Argus* says, "The Supreme Court has decided that no Pleuro-pneumonia Act is now in existence in this colony. The question has been for some time a subject of considerable discussion and some doubt. It was held, on the one hand, that the Act passed in April, 1861, at the instance of Mr. Mollison, expired by effluxion of time with the close of the session of Parliament in 1863; and on the other, that the amending Act, which became law in May, 1862, was also a continuing Act, and therefore maintained the virtue of the original Act after the date at which that Act of itself became inoperative. The doubt has interfered considerably with the freedom of action of owners of cattle, and has given an uncertainty to the proceedings of the inspectors appointed under the bill, which has not operated for good in any direction. It is well, therefore, that the question is settled. The object of the first Pleuro-pneumonia Bill was, if possible, to stay the spread of a disease which had made its appearance in the colony for the first time, but the dangerous and fatal character of which was well known. It was confessed by the authors of the measure, however, that the delays which marked its progress through Parliament rendered it almost hopeless that the operation of the bill would have the beneficial effect at first anticipated from it. If the Act could have been made law with the haste the urgency of the case required, pleuro-pneumonia might have been confined to the district in which it first appeared, by the passage of cattle from that to other portions of the colony being strictly prohibited; for it is admitted that the disease is contagious, and has been widely spread by the wanderings of infected animals. But Parliament was dilatory. The opportunity was lost. Before the inspectors were armed with sufficient powers to attempt the arrest of the disease, the evil had spread far and wide, with all the disastrous consequences that have since ensued to trade, and losses to breeders and rearers of cattle. Since 1861 we have seen pleuro-pneumonia assert its presence in almost every district of this and the neighbouring colonies, and extend its ravages to both the north and south islands of New Zealand. Happily it seems to have become

less deadly than when it first broke out. If we may confess to ourselves now, that some months ago the meat of diseased cows and bullocks was much too frequently exposed for sale in Melbourne, we have equally good authority for the statement that at present the disease is either less frequent or less fatal, and that infected animals seldom find their way now to the abattoirs. As matters stand, it is perhaps fortunate that the action of the pleuro-pneumonia inspectors was circumscribed by the votes of the Assembly. If the discovery made by Dr. Thomson is the true exposition of the nature of the disease, we must look for some more scientific treatment of infected herds than was originally contemplated. The quick destruction of the animals, and the burning of the carcass were the rude preventive measures originally contemplated, but these seem altogether barbarous and ineffectual in the light of the latest results of inquiry. It may be prudent, therefore, to wait further investigation before the Act now pronounced non-existent is revived by legislative action. Mr. Howard has a bill on the subject before Parliament, but it is far from being a comprehensive measure. Its scope scarcely goes beyond the protection of the public from unconscious use of the flesh of animals that were diseased. That object, no doubt, is highly laudable; but it is unnecessary to stir the legislature into action for a purpose which can be accomplished by ordinary police vigilance and care. We are still, too, without the report of the commissioners specially appointed to inquire into the nature and peculiarities of this disease in cattle. Until we have full evidence before us from this source, seeing that no legislative action can now stop the progress of the disease from district to district, it will be wise to rest content with the decision given by the Supreme Court yesterday, that no Pleuro-pneumonia Act now cumpers the statute-book in this colony. In the mean time, though the prospects as regards pleuro-pneumonia are thus reassuring, and the need for legislative protection is less urgent, we cannot dismiss the subject without animadverting most strongly on that *crassa ignorantia* or that *crassa negligentia* on the part of the legislature, which has thus left the community absolutely defenceless. As it is, the consideration suggests itself, how far the public purse might have been rendered liable for damages inflicted on herds under the authority of an Act that is now pronounced not to have been in force.

OBITUARY.

WE regret to have to record the death of Mr. Mavor, lately the head of the firm of Mavor and Sons, of Park Street.

The impaired state of Mr. Mavor's health induced him a few years since to retire from the active duties of his profession; and to recruit his strength, he sought recreation principally in his favorite pursuit of yachting. It was hoped that under such circumstances he would long be spared to his family and friends, but the summons had gone forth, and about three weeks since he was called from off this earthly scene to that "bourn whence no traveller returns." Few men stood higher either among his professional brethren or the public than our departed friend, during the time he was pursuing the active duties of his profession. His diploma bears date July 28th, 1829.

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Communications and Cases.

CASE OF MALIGNANT SORE THROAT IN A
HORSE.

By J. C. BROAD, M.R.C.V.S., Paddington.

LETTER TO MR. VARNELL.

DEAR SIR,—I beg to forward you a short history of the case of the horse from which I took the tongue and other parts sent for your inspection on the 4th ult., and shall feel obliged if you will secure it a place in the *Veterinarian* for the ensuing month. I shall look forward with much pleasure for your remarks upon this case.

The animal was a very valuable black gelding, five years old, belonging to Mr. Miller, horse-dealer, Upper George Street, Portman Square.

My attention was called to him on the 20th of May, when I found the following symptoms to be existing:—Pulse 60; breathing short, quick, and painful; mouth hot, and the mucous membranes slightly injected.

The horse was immediately removed to our infirmary, and placed in a loose box; medicine was given, and a mustard poultice applied to his sides and chest. On the following day it was considered necessary to repeat the mustard to sides, &c.

22nd.—A slight improvement has taken place; he will now take a little green meat and damped hay, but refuses bran or malt mashes. He has not yet lain down.

23rd.—No particular change.

24th.—Pulse 66 ; breathing quickened ; refuses all kinds of food ; drinks a little water or thin gruel.

28th.—Pulse has gradually quickened and grown weaker in character, and the respiration is painfully performed, as if from an attack of acute laryngitis. He still refuses both food and drink. A strong blister was applied to the throat.

29th.—Blister has taken effect, but there is no abatement in the severity of the symptoms. He could not take any food, and when he attempted to drink the fluid was immediately returned by the nostrils.

30th.—Great prostration of strength. Respiration with difficulty performed.

Tracheotomy was had recourse to, and was followed by the desired effect, in so far as giving relief to the respiration, but in no other way. From this period he could neither eat nor drink, nor could medicine be administered.

31st.—No improvement. It was now clear (as I at once stated to the owner) that the case would terminate fatally. The symptoms continued to increase in severity, and the animal to become gradually weaker, until the 3rd of June, when death took place.

Post-mortem examination.—*Abdomen.*—Stomach empty, but free from disease. The intestines contained no solid matter, but, like the stomach, were healthy. Liver pale, but healthy. *Thorax.*—The lungs partially hepatized, the near lobe especially so. When cut into, a great number of tubercles were observed in the lungs, many of which contained pus. The heart was very soft and flabby.

The tongue, pharynx, and larynx, were extensively diseased. These parts I send for your inspection.

REMARKS BY PROFESSOR VARNELL.

The disease in the horse's throat alluded to in the preceding communication was of a highly malignant character, and as far as medical skill was concerned, it had very little, if any, power over the rapidity of the progress it was making. Vitality seemed to have so far ebbed that, although air was admitted to the lungs by the aid of the operation of tracheotomy — disease having closed the glottis — yet no benefit was derived thereby, as the horse rapidly sank and died. That the case was one of acute inflammation of the fauces, involving in its ravages the adjacent organs and connecting tissues, there cannot be a doubt. These parts, with the tongue, a portion of the trachea and larynx, were sent for

my inspection ; and I do not remember ever to have met with an instance in which diseased action had so completely broken up the structure of the parts involved as was the case in this instance. What seemed remarkable, and to me more especially worthy of note, was the well-defined boundary of the disease. In its extent it reached as far forward as the *papillæ circumvallatæ*, on the dorsum of the tongue, and as far back as the posterior part of the pharynx, and in a line with the posterior border of the cricoid cartilage of the larynx. Between these points the mucous membrane was black, or nearly so, and there was considerable loss of its structure, more especially near the margin of the epiglottis and arytenoid cartilages. The basement membrane was much thickened from interstitial infiltration, and the free surface of the mucous membrane was covered with a sanguineous, slimy fluid. The *velum palati*, tonsils, submaxillary and lower parts of the parotid glands, were much enlarged, and dark in colour, and, in addition to these changes, the latter were found to have small abscesses in their structure. The swollen state of the mucous membrane at the entrance into the larynx was so great as to render the passage for the air through this part of the tube impervious, making it evident that, had not the operation of tracheotomy been performed, the horse must have died two or three days before he did. Such is a brief outline of the ravages disease had made in the tissues and organs forming the boundary of the fauces ; and although the case may not be an isolated one, even as far as its intensity is concerned, nevertheless it is valuable in more than one point of view. It suggests to one's mind that, if any good is to be effected in such cases by treatment, it must be energetically employed in the very early stages of the disease ; and at the same time it as fully shows that, in diseases of this type, science is often unable to combat the rapid strides morbid action is making. Such was so in this instance, and therefore the case is of great value to the pupil and junior practitioner. It also suggests the importance of inquiring into the cause and nature of such affections, whether they are enzootic or epizootic, or contagious, and if so, to what extent. There is another point, in considering this case, which I think is important ; it is this :—The lungs are described as being “hepatized, and on a section being made through them numerous tubercles containing pus are said to have been observed.” The former may have been of recent date, but the latter, in all probability, were of long standing. If this be so, it may be asked whether the existence of these deposits (the “tubercles”), or the previous condition of the

system, which led to their production, had anything to do in establishing the disease in the throat, or in lessening the probability of a cure being effected? I incline to the opinion that it had. In fact, I think there cannot be a doubt on this point. Let the primary cause have been what it may, the power in the system to resist the invasion of disease, or to throw it off when fully established, would be materially diminished, as compared with a constitution unimpaired by disease. And again, the capability of medicine, and other therapeutic agents, in assisting nature under such circumstances as the one in question, would also be very much lessened. These are important points for the practitioner to reflect upon when forming his prognosis, and the case which Mr. Broad has given us affords materials for this purpose.

DEATH OF PIGS.—ENTERIC DISEASE.

By J. D. PEECH, M.R.C.V.S., Wentworth.

Reported by Professor VARNELL.

YESTERDAY (May 13th, 1864) I forwarded the bodies of two pigs, addressed to you at the College, which I should feel obliged by your examining and reporting to me upon.

The history of the malady is briefly this:—About seven weeks ago, a boar pig, the property of R. J. Bentley, Esq., Old Brewery, Rotherham, began to be unwell, and after a short illness died. In the course of a few days, others began to be affected and died also; and from that time up to the present, strong stores, young suckling pigs, and sows, have been dying almost daily. I believe that some sixty or seventy are dead altogether.

On Wednesday, the 11th ult., I was requested to see the remaining pigs, and make a *post-mortem* examination of two that had died that day, but, having several engagements, I was not able to attend until the next day, when the two to be examined had been dead twenty-four hours. I found a large amount of disease in the stomach and bowels, but I will leave in your hands the description of the lesions. The two forwarded presented all the appearances of the others, therefore the description of these will suffice for the whole.

The first symptom observable is that the bowels become slightly relaxed, which in the course of a few hours merges

into acute diarrhœa. During this stage the pigs are seen to crouch and shiver, and portions of the integument to change in colour—the tip of the ears being always the first to alter in colour. These appearances are quickly succeeded by a similar change in the extremities, abdomen, and along the course of the spine. The discoloration appears at first in irregular blotches, which enlarge as the malady advances, and ripens into a deep purple; it being at first of a pinkish hue. Towards the close of the illness the eyes become amaurotic, and the eyelids close involuntarily. The limbs are partially paralysed, and the poor creatures stagger about until death closes the scene. The diarrhœa continues the whole of the time, the evacuations being of a light colour.

The mischief found in the stomach and bowels of the two opened by me clearly manifested that some irritant had produced considerable visceral disturbance, and which I strongly suspect was in the food. This consisted of grains; old wheat, ground; sharps, and a liquid called grout. This grout is the settlings from the cooler where the liquor has been placed, and consists chiefly of the finer portions of the malt which pass through the strainer. The wheat meal was always either boiled or scalded before being used, and I doubt not it has sometimes been given whilst in a fermentative condition. This, I believe, has been their diet for a very long time, consequently it is surprising that such serious effects should now happen if the food be the real cause.

I saw several small pigs, all suckers, suffering on Thursday, and from the state they were in I felt assured that their death was certain, and very quickly too. I therefore did not apply any medical treatment in such hopeless cases. I directed, however, every portion of the food in the troughs to be removed, and for them to be well washed. I also ordered a complete change of diet, consisting of bean meal, fine sharps, and clear water, and trusted to this change of food to alter the state of affairs. I may observe that a gilt which came to be stunted, being then perfectly healthy, remained there a few days; and after its return home she also died. While at the brewery she lived on the same food as the other pigs.

On receipt of this note I wrote to Mr. Peech for further particulars, and in due time received the following reply:

The food of the pigs affected at the Brewery consisted of grains, sharps, grout, and wheat roughly ground. The wheat was English, and was a little sprouted, but not to an

extent to materially interfere with its nutritive properties. The pig-yard has a north-west aspect, and lies below the turnpike road on the south-east side. It is bounded by the river on the north-west, which is also much below the yard. From this you will see that it lies on a slope from the south-east to north-west. On the upper or south-east end a deep drain is dug, much below the level of the "pigsties," the surface of the latter being pitched with bricks, and well drained, rendering them perfectly dry and comfortable. There is in the yard a "small tank" for the drainage, or rather it is intended as a trap for the solid matter, the surplus of which flows into two larger tanks forty or fifty yards away from the trap. These two large tanks are regularly built with bricks, arched, and furnished with large *grates*, so that the gases given off escape through these grates are to north-west, and quite away from the yards, and several feet below them. Had it not been for these outlets from the tanks, it might have been supposed that the gases had escaped up the drain-pipes, and made their way into the pig-yards; but this arrangement entirely does away with that idea. The grates are capable of carrying away many thousand cubic feet of gas.

James Hodgson, Esq., whose yards have the same aspect, and are situated on the other side of turnpike road, has suffered in proportion. The disease manifested itself here when it had abated and almost disappeared from his neighbour. During the last fortnight Mr. Hodgson has lost and had destroyed about twenty pigs.

I have examined four of his pigs, and in every animal, save one, found extensive disease of the lungs. In three of them the right lung was hepatized, and more or less of effusion had taken place into the cavities. Fibrinous adhesions also existed between the pleura pulmonalis and costalis. In fact, acute pleuro-pneumonia was present. In another case extensive disease of the alimentary track was excited, commencing in the stomach and terminating in the colon. This case was complicated with mischief in the lungs, but to a less extent than in some others.

The yard in which the pigs are kept is on higher elevation than the brewery-yard, and quite as well drained and as clean as these places are in ordinary. Mr. Hodgson is the proprietor of Rotherham Mills, and has his pigs kept different from the others, those of the brewery, as they live chiefly on barley meal, coarse sharps, and mill sweepings; their food at all times being good and sound. Sometimes it is given to them raw, at others it is scalded. In this respect the pig-feeders have not been

regular, and although not so, still I have not known these pigs to suffer anything of this kind before.

I believe I stated in my first communication that Mr. Bentley's pigs had at all times the meal first scalded, and then allowed to stand and swell, or, in other words, slight fermentation generally was present when it was given to the pigs.

A very strong sow died on Monday at Mr. Hodgson's, and several of her little ones, which she was suckling. She had been ill, I should think, a fortnight. Besides those of her litter which have died, I saw others on Friday last, which were rapidly sinking.

OBSERVATIONS.

Swine hold an important position in the list of domestic animals, as they form no inconsiderable item in the nation's wealth in supplying a large amount of food for the people. Hence their well-being is a matter of national importance. They do not, however, like the horse, dog, ox, and some other animals, contribute during their life very much to the comfort of man, but, rather on the contrary, very often to his discomfort. It is, nevertheless, desirable, for the reasons above stated, that the veterinary surgeon should know something of their habits and idiosyncrasies, so as to be the better able to understand the nature of the diseases they are subject to. The hog, although wallowing in the filthiest mire, and sometimes feeding upon the most disgusting kinds of food, both animal and vegetable, and often when in a decomposed state, does not always do so with impunity. I feel persuaded that many animals of this class are annually lost from the effects of improper food, or from living in an atmosphere surcharged with poisonous effluvia, the product of animal or vegetable decomposition; and I think that the owners of pigs often make great mistakes in not paying more attention to the quality of their food and the condition of their lodgings. Decomposing substances, both animal and vegetable, corn that has undergone a change from long keeping or exposed to damp, and which is loaded, perhaps, with the sporules of poisonous fungi, the sweepings of warehouses, consisting sometimes of agents of an injurious character, brine from the meat tub, and salted brewer's grains, these and other similar substances are often given to pigs as food, and in several instances have been known to cause very great losses. A

few years ago I recollect some valuable hogs being destroyed by feeding upon the sweepings of warehouses in which a quantity of saltpetre existed. These cases were, I believe, published in this Journal. As a rule, I believe that old strong hogs are not so easily affected by improper food as young ones, and I have sometimes known sows to appear in perfect health when suckling their pigs, but yet to have their milk so altered in quality from the effects of bad food as to destroy the pigs.

In cases like those alluded to in the above letter something special must have been in operation to have destroyed so many pigs. What, I would ask, is so likely to produce death in the manner described by Mr. Peech as the food—solid and liquid—which the animals partook of, or the air they breathed? Either of these would, when vitiated to a great extent, produce a poisoned state of the blood. The symptoms observed when the pigs were first taken ill, together with the rapid course of the disease would lead to the conclusion that blood poisoning was the immediate cause of death. This opinion is also borne out by the *post-mortem* appearances.

I carefully examined the carcasses of the pigs, and the lesions observed were quite consistent with this theory. In two of the pigs the large intestines were extensively diseased, the mucous membrane was much thickened, and its basement structure was of a purplish-scarlet colour. In some parts the intense red colour was arranged in transverse streaks. On the free surface a layer of lymph, varying in thickness, was deposited, resembling very much that which is found on the mucous membrane of the throat in cases of diphtheria, which affection it was suggested by a friend to be analogous to, if not identical with, in character. A disease of this kind, affecting the posterior part of the alimentary canal, instead of the anterior, although very unusual, is nevertheless within the range of possibility. For my own part, by reflecting on the symptoms, death, and *post-mortem* appearances, I have thought the disease might be designated *enteric fever*, induced by a poisoned state of the blood.

In another pig the lungs were the chief organs affected, the bowels being but slightly involved; but the lesions in the latter organs appeared to be the same in character as those affecting the intestines of the other two pigs. Both lungs were partially hepatized, and some of the bronchi were filled with a lymph-like deposit. I see no reason, physiologically or pathologically, why the disease in these organs should not have been produced by the same cause as that which af-

fecting the intestines upon which the diphtheric deposit existed.

These cases are very interesting to the comparative pathologist, and I feel individually indebted to Mr. Peech for the trouble he has taken in sending them for my inspection. I am confident that if the diseases of pigs, and some other of our domestic animals—but now little regarded—were more fully considered by practising veterinary surgeons, our profession would be more appreciated by the public. I feel also that it is as much our duty to suggest preventive measures as it is to cure diseases when they occur. Much that I have seen of late convinces me of the necessity of more attention being paid to the quality of the food of animals than hitherto has been done, and also to the nature of their lodging, as well as the air they breathe.

[The disease of the intestines of pigs referred to in these communications has been very rife in Berkshire and the adjoining counties for upwards of a year. Numerous specimens of it have been sent to the Veterinary College.]—EDS.

OBSERVATIONS ON "SOUNDNESS."

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from p. 283.)

THE foot of the horse has been the theme of many an author for a century or more. All who have attempted to make known to the world their views have done so more or less to their own and to other people's satisfaction; errors (not a few) have thus found their way into books. The plantar region of the horse is fraught with interest, more particularly that belonging to the anterior extremity. If a person were desirous of ascertaining which is the most important structure in connection with the outward form of the horse, he would be told that the foot deserved that place, and doubtless it would not be far from the mark. Many popular sayings have been handed down to us, one of which is, "No foot, no horse," which, I believe, was launched by Jeremiah Bridges, who wrote, in 1752, on the 'Anatomy of the Foot of the Horse.' This and other similar phrases are very expressive. I have more than once asserted that many errors have been handed down from time to time with reference to the phy-

siology of the foot. The more I see and read, and the more I reflect upon the subject, the stronger is the fact impressed upon me. I hope, however, that a new light has already begun to shine upon this part of the structure of the horse. It is needless to remind the merest tyro of the importance to be attached to a careful inspection of the foot, nor is it necessary I should more than hint that no two horses have the same shaped feet, any more than two heads are precisely alike: hence the difficulty in arriving at anything like a definite description of the outward form of the foot of a *stabled* horse. One author writes one thing, while another describes the shape and form of the foot according to *his* notions. The former may be as correct as the latter, and the *foot* described by the latter as healthy as that of the former. It is not requisite that we should be able to state, upon mathematical precision, what the exact shape of the foot ought to be; I think we may be satisfied to know that the foot we are looking at in an examination has *nothing to offend the eye*. This is going as far as there appears to me to be a necessity for doing.

The pathology of the foot will be more advantageously considered subsequent to a *few* remarks as to its anatomy and physiology.

The foot, as it appears before us in its natural state resting upon the ground, is nothing more than a portion of horn formed into a cone. A man in total ignorance of the anatomical structure of the horse would scarcely believe that the horny part of the foot denominated "hoof" contains such a variety of structures within its walls. Taking it as a whole, it seems to be well adapted for all uses, and one could hardly imagine how the parts are so liable to derangement; but when we have ascertained, by a little reflection, how nature's laws are interfered with in our daily use of the horse, we shall no longer feel surprise at the various diseases met with in the foot, but give place to *wonder* that it is capable of resisting all the wear and tear and hardship to which it is exposed.

The *form* of the hoof in a foal is different to that of the grown-up horse. In its after growth it not only alters in size, but in shape also. The foal's foot is said to be conoid; and the adult almost circular. This will apply more immediately to those feet which have not had the assistance of the farrier to change their shape. Soil, and the various kinds of work which the young animal is called upon to perform, exercise considerable influence in the growth of the foot. I believe it is a received opinion that no particular form has been *of late* assigned to the foot, and it is also a pretty well ascertained fact that a foot is not contracted unless it can be

proved that it was once larger. The form of the hoof depends upon the growth of structure within, and those internal parts depend upon the functions they are called upon to perform.

From the above remarks it will be seen how *varied* is the form of horses' feet, and how cautious we ought to be in condemning those feet which do not assume that shape we have been in the habit of considering perfection as regards *form* and *size*. If we examine the hoofs of a score of horses after death, we shall find a material difference in shape, and so we shall find the same difference of shape in the pedal bones. This is readily accounted for, if we accept as a fact that the external part of the foot, namely, the hoof, is depending entirely upon the growth of structure, within as to the form it assumes during the life of an animal.

Sainbel considered the foot as the "segment of an oval, opened at the back, and nearly round in front."

B. Clark denies this assertion, and believes it (the foot) to be "cylindrical, very obliquely truncated upon its ground surface." A note taken at Professor Spooner's lecture is as follows:—"The form of the hoof is conoid in the foal; it may attain to *any* form with work, depending upon the function the foot has to perform." Mr. Gamgee, sen., has expressed himself in the following words:—"It is quite true the anatomist recognises some essential characters and forms with wonderful constancy, which, however, is not inconsistent with considerable secondary differences. Witness men's heads and hands, as well as horses' hoofs. You never find two precisely alike." These observations of the Professor I can readily subscribe to; we may, therefore, dismiss this part of our subject as being of less moment than it has hitherto been considered, and proceed with an inquiry into the structure of the foot. The foot of the horse is made up of a variety of textures, so arranged as to constitute at one and the same time the most elaborate and beautiful specimen of mechanism the mind of man can contemplate. We find entering into its composition *bones, synovial membranes, cartilages, fibro-cartilage, elastic tissue, ligaments, terminal portions of tendon, arteries, veins, nerves, absorbents, and horny fibre*. Each and every one of these structures has its own special function to perform.

The Bones.

The *os pedis* is described as semilunar in its outline, anteriorly and superiorly convex, posteriorly and inferiorly concave. It is connected with the navicular and coronal bones,

and is characterised for its lightness, being extremely porous, and forming an arch, which is so well adapted for the support of weight. From its situation and connection with the horny covering, it may be assumed that it remains *almost* in a passive state under all circumstances, if not, its movements must of necessity be extremely limited. It would appear that it more particularly serves the purposes of support, maintaining the form of the foot, and affording attachment to other as well as to more movable structures, situated within the hoof. The heels of this bone demand especial attention, as it is these parts of the bone which have so much influence in the production of *corn*. My conviction is that, *as a general rule*, some alteration must have taken place in the growth of the heels of the bone *before corn* is manifest, or undue pressure, which is so *frequently* observed, would cause the disease oftener than it is met with in our patients. I am fully aware, however, that the *first* set of shoes placed upon a young animal is productive of extravasation of blood in the heel; this is more particularly the case when the subject is shod by a country shoer, or other *inexperienced* workman. The *navicular* bone is described as being something like a weaver's shuttle; it is an irregular bone, divided into borders and extremities. It enters into the composition of the coffin-joint, as well as into that forming the important joint which gains its name from the bone. It is viewed as a sesamoid bone. It is the *inferior* surface of the bone, which more especially demands our attention in the examination of a horse as to soundness. I do not see that the *coffin-joint* is so entirely free from disease as some persons are desirous of making us believe: by some it is asserted that no such thing exists as lameness in the coffin-joint. I have dissected some well-marked cases of coffin-joint lameness, when I have found that the whole synovial surface has been extensively diseased. When we view the situation and position of the pedal and coronal bones, together with the solidity of the latter, and the *constant* pressure exerted upon the joint, we shall feel somewhat surprised (looking at it mechanically) that it so often escapes injury. We must feel convinced that its power of resistance resides in its vital properties chiefly.

The navicular joint is a name in the mouth of every possessor of anything in the shape of a horse. It owes its notoriety to the late Mr. James Turner, who, I believe, directed the profession to navicularthrititis. The modern Babylon and other similarly paved cities are doubtless well supplied with cases of this sort. If concussion is the cause of navicular disease, we should look for it

upon the hard pavement, rather than upon smooth and well-cared for macadamized roads, although we do *now and then* meet with high steppers and good goers who constantly hammer their feet as they travel along the road. At the same time it must be admitted that we do not hear so much of navicular disease now as we formerly did; whether it is because we are more conversant with other affections of the feet, or whether it is in consequence of the feet being more carefully and properly shod, I am not prepared to state, but I am inclined to the opinion that as our knowledge of the foot increases so will the existence of navicular disease be considered less frequent in our diagnosis. Nature has made ample provision in the foot to prevent the inroads of disease from wear and tear consequent upon exertion. It is a question, however, whether that provision is sufficient for the present requirements of the animal. We must bear in mind that we are to consider the foot as intended by the Allwise to be sufficiently perfect in all its parts to serve the purposes in an *artificial* state as well as during a state of nature.

The inferior and lateral cartilages are doing good service in their several departments; the movements of the *former* are trivial when compared to the *latter*. The lateral cartilages are called upon to do a vast amount of work, indeed every motion of the foot is in some way or other exciting an influence upon these cartilages, and this will in some measure explain the reason why a transformation of their structure is so frequently met with in our examinations. When we reflect upon the functions which the lateral cartilages have to perform, together with their peculiar conformation, we no longer wonder that they are so liable to disease. The bond of union existing between the horny covering and the sensitive parts of the foot demand our especial attention, inasmuch as we have of late been led to understand that the lamellated structures are not so susceptible of injury as we were wont to believe they were. Take, for example, *the five hundred dovetailed connections*. If a mechanic were shown these structures and adaptations, he would, I am sure, exclaim that there must of necessity be great force exerted upon these different parts in sustaining, not only the weight superimposed upon them, but the weight produced by rapidity of motion, and that upon all kinds of roads, not only hard ones, but uneven also. These several things, I have no hesitation in asserting, must cause derangements of the parts during a long course of work. Too much cannot be said of this part of the foot in my humble opinion. The connection between the os pedis and the sole has of late brought out some remarks from the pen of Mr.

Gamgee, Sen., which are well worth the attention of every student and practitioner of veterinary medicine.

The frog is a structure which has always come in for a share of discussion when speaking of the foot. I remember having heard that the frog caused expansion of the heels, &c., and this, I dare say, even at the present time, is an opinion accepted by numberless individuals. If expansion of the heels was a *fact*, it may be received as the principal cause in performing that function, but we have sufficient reason to doubt that the feet have the expansive power attributed to them by some members of the profession, therefore we shall have to assign some other function to the frog. On looking at the frog, and taking into account its component parts, as well as its situation and connection with other tissues with which it is in immediate contact, it will strike us that in the first place it is intended to make up *quantity*. Secondly, it is to prevent or ward off concussion; to this I think we may give *all* our attention. It is not too much to state that this is the most it has to do, namely, give *protection to the structures above it*. The same may be said of the elastic tissue. It is placed there to make up *quantity*, in a similar manner as India rubber would be employed where concussion is met with in *in-organized materials*. Something has been said about the movements of the foot during progression. I do not intend at present to open up that question, but merely to state that the movements of the foot are not universally understood, with reference to the front foot more particularly. If we look at the various structures, we shall find the elastic portions are susceptible of *compression*; we know that there is sufficient room within the hoof for a *certain amount* of displacement to take place, if required, and *it is* required, I have no doubt, under some circumstances. It has been denied there is any *downward* movement at all of the bones of the foot. If we will take a little trouble, we shall however clear up this question in a short time. Smear some black oil upon the hoofs and allow the horse to walk upon a dusty road, and it will soon be found that the hair has wiped away a considerable portion of the dust from the upper part of the hoof, much below the situation of the hair when the foot is at rest. This, I think, fully demonstrates the fact that there must be *downward* movement; and with reference to the long-talked-of expansion, it will be found that the greatest expansion is observable in connection with the lateral cartilages, and not in the horny structures.

Nature seems to have provided the foot with those structures which do not assume the state other soft parts of the

frame are known to do. If muscular fibre and other soft structures found their way into the interior of the foot, an attack of inflammation would so interfere with its capacities that our patients could not endure the hardship required of them. If Celsus was correct in the following sentence, "*Rubor et tumor cum calore et dolore,*" we can appreciate the wisdom of the great Architect of the universe in providing such materials as are found within the hoof. *Heat, redness, and pain,* we know are present in some complaints of the feet, but there cannot be much tumefaction in any case; although there is swelling to a *certain* extent cannot be denied. The fact of such numberless blood-vessels entering into the structures is a sufficient reason for believing such to be the case. The peculiar formation of the os pedis gives to the arteries and veins every facility to carry on their functions uninterruptedly; if it were otherwise the animal would be more susceptible than he is at present of sustaining injury during work. How wise all these things are ordered!

Horn is found to differ in its texture in many animals, and also in the same animal it will be found to differ.

The horn of the wall and that of the frog is very unlike, and these again are different to the sole. The wall is produced by the coronary substance; any injury therefore to this part of the foot will tend to interfere with its healthy function.

Would it be too much to suggest that we do not fix our attention sufficiently to this part of the foot in our examinations? If the wall is produced at this part, and it is observed the secretion of the gland is an unhealthy one, we may fairly look to the producer of unhealthy horn and endeavour, if possible, to ascertain its disease and find a remedy.

The bars are other structures which have been dilated upon by most horse-keepers, but some persons attach little or no importance to these inflections. If they were not destined to perform some special office they would not have been found so prominently in their place. The cutting away of these stays and opening the heels, as it is termed, are sources of great evil to the well-doing of the foot. It is a well-ascertained fact that the darker the horn, the better it is.

(*To be continued.*)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from p. 148.)

IN my last communication in connection with this subject, I brought briefly under notice the chief botanical characters of the *Aconitum napellus* (monkshood). I may here state, in passing, that my attention has since been called to a very interesting case in connection with the natural order *Ranunculaceæ*, by the death of three heifers, caused by the *Ranunculus ficaria*, occurring in the practice of Mr. Flower, of Derby, and to which I shall refer more particularly in another paper. Before resuming the consideration of the medicinal and poisonous properties of aconite, I will just allude to another plant, which is commonly called winter aconite. Several varieties of ranunculus, such as the *R. bulbosus*, the *R. ficaria*, have, in different districts of the county, been commonly termed winter aconite; but the true plant to which this name has been given is the *Exanthis hyemalis* (winter aconite). This plant was introduced into this country from Italy, and is cultivated as an ornament to our flower gardens. Its pale-yellow flower, appearing from January to March, makes it a companion for the snowdrop, and the few other flowers which can withstand the severities of our climate at this season of the year. The consideration of an agent, the effects of which are so powerful upon animal life, as the different preparations of aconite, is well worthy of our most careful attention, and should naturally lead us to some definite conclusions as to its value as a medicine; but perhaps there is no agent employed by the veterinary surgeon at the present day whose real properties are so little understood. Having employed it but little, I am unable to give an opinion as to its effect, but, judging from the interesting cases recorded by others in which it has been used with success, it is found that it exerts a powerful influence in a great variety of diseases. Thus Mr. Parker, in the *Veterinarian* for April, 1861, speaks of it as a specific in cases of spasm in the horse. He commences with doses of $\text{m}x$ of the Pharmacopœia tincture of aconite in a pint of cold water. He says, "The sedative effect on the system is almost instantaneous; and in cases where the dose is given within an hour of the first symptoms of uneasiness, the pain is relieved at

once. The first signs of the powerful effect of this drug are grinding of the teeth, twisting of the jaws, and attempts to vomit; *the force of the pulse is depressed, but sometimes the beats are more rapid.* The horse generally lies down at full length, and in a few minutes becomes in a comatose state." He also writes — "In enteritis, in its most acute form, aconite is very beneficial in allaying the agony attending this disease. In all cases, in fact, where a sedative is called for, I think this agent would be found very useful." Mr. Lewis, in the same journal, for August, 1854, records its successful administration to a pony suffering from bronchitis, giving, as a first dose, $\text{m}\nu$ of Flemming's tincture of aconite in ziij of water. The following is the description of its effects:— "Within five minutes after giving the medicine, the pony began to tremble violently, and its hind legs seemed to lose all power of supporting the weight of the body. It lay down, or rather dropped, was convulsed all over, frothed greatly at the mouth, and seemed to be swallowing something very quickly. These alarming symptoms continued for fifteen or twenty minutes, and then began to abate." He afterwards remarks—"The pulse gradually *lowered in frequency, while it rose in force.*"

Professor Morton, in his 'Materia Medica,' thus writes:— "Mr. Brown informs me that, as a sedative, the tincture of aconite is most effective in cases of constitutional excitement from injury, in fever following severe wounds, or that supervening on protracted or difficult parturition. Professor Morton goes on to say—"Besides a general sedative, it has been found of service in diseases of the heart, paralysis, epilepsy, and gastric irritation." By others it has been used with success in the treatment of rheumatism and pleuro-pneumonia in cattle; while other eminent practitioners consider it only as a dangerous poison, and unfit to be used as a medicine at all. From the above it will be gathered that aconite has been employed in the treatment of a variety of diseases, the nature of which very materially differ. Much in connection with the action of this powerful agent yet remains to be investigated, and those who have employed it would be doing the profession a great service by recording their experience of its effects in the treatment of disease in our domestic animals. As a poison, it acts most energetically on man and all kinds of animals. The experiments of Drs. Harvey and Sharpey "went to prove that aconite first acts upon the nerves, and then on the muscles, killing by its action on the heart." Sir Benjamin Brodie found "it acted as a narcotic, and arrested respiration firstly." Dr. Flemming

“considers that this poison may cause death—1st, by producing a powerfully sedative impression on the nervous system; 2nd, by paralysing the muscles of respiration, and causing asphyxia; and 3rd, by producing syncope; Dr. Taylor adding that the last is the most common form of death in man, when the case is protracted for some hours. Many cases of death in the human subject by this agent are recorded, several of which have been caused by the root of aconite having been partaken of in mistake for horseradish, an instance of which occurred at Dingwall, in Scotland, some few years ago. Three persons partook of what was supposed to be horseradish sauce with roast beef for dinner, but which unfortunately proved to have been made with the root of *Aconitum napellus*, and which resulted in the death of all three persons within four hours. Such mistakes can only occur through ignorance or carelessness, as the roots of the two plants differ materially. As it may prove of some interest, I have copied the following comparisons by Professor Bentley, from ‘Pereira’s Materia Medica:’

ROOT OF ACONITE.

Form. — Conical in form, and tapering perceptibly (and rapidly) to a point.

Colour. — Externally, coffee - coloured, or more or less of an earthy-brown colour.

Odour. — Merely earthy.

Taste. — At first bitter, but afterwards producing a disagreeable tingling and numbness.

ROOT OF HORSERADISH.

Form. — Slightly conical, at the crown; then cylindrical, or nearly so, and almost of the same thickness for many inches.

Colour. — Externally, white, or with a yellow tinge.

Odour. — Especially developed [on scraping, when it is very pungent and irritating.

Taste. — Bitter or sweet, according to circumstances, and very pungent.

On man, according to Dr. Taylor, the following symptoms generally follow a poisonous dose :—“ In from a few minutes to an hour after the poison has been taken the patient complains of numbness and tingling in the mouth and throat, which are parched; there is giddiness, with numbness and tingling in the limbs, a loss of power in the legs, frothing at the mouth, severe pain in the abdomen, followed by vomiting and purging. In some cases the patient is completely paralysed, but retains his consciousness; in others the giddiness is followed by dimness of sight, delirium, and other cerebral symptoms, but not amounting to the complete coma produced by the cerebral or narcotic poisons. The pupils are dilated, the pulse sinks, the skin is cold and livid, and the breathing is difficult. Convulsions are not commonly

observed in man, nor are they indicated by general tremors or twitchings of the voluntary muscles. The poison produces convulsions in animals.

Few cases are recorded of its fatal effects upon animals, except such as have been produced by experiment, several of which, on horses and other animals, at the Edinburgh Veterinary College, are recorded in Mr. Finlay Dun's work on veterinary medicines:—"A cat of average size got m̄vij of Flemming's tincture of aconite. In two minutes severe retching came on, and in five minutes painful vomiting and involuntary muscular contractions of a most active kind, with perverted action of the voluntary muscles, causing the animal to leap up the wall, and turn summersaults backwards. The vomiting and muscular action continued to within two or three minutes of death, which took place twenty minutes after the administration of the poison." Other experiments on horses and dogs are also given at some length by the same author. Its effects upon two greyhounds came under my own observation a few years ago, and will be found recorded by me in the *Veterinarian* for January, 1859. The poisonous properties of the *Aconitum napellus* depend chiefly on an alkaloid named aconitina (aconitine) ($C_{60}H_{47}NO_{14}$), which is the most virulent poison known. According to Dr. Headland, "1-300th of a grain will poison a mouse with characteristic symptoms; 1-100th, a small bird; 1-1000th of a grain causes tingling and numbness of the tip of the tongue; 1-100th dissolved in spirit, and rubbed into the skin, causes loss of feeling for some time. This alkaloid is difficult to obtain pure, and its price, 3s. 6d. per grain, would prevent its use in veterinary practice.

(To be continued.)

THOUGHTS ON PLEURO-PNEUMONIA IN CATTLE.

Suggested by a Discussion at the Lancashire Veterinary Medical Association.

By T. GREAVES, M.R.C.V.S., President.

I HAVE listened attentively to the reading of a very excellent paper we have been favored with upon pleuro-pneumonia in cattle, by Mr. W. Haycock, and also to two evenings' most interesting and enlightened discussions which have followed. We have had a variety of practical opinions as to the

causes, nature, and treatment of the disease, some attributing it to one cause, and others again to another; some advocating one mode of treatment, and others another. From all this I have formed the following opinion, and come to the conclusion that no known mode of management or plan of ventilation is a full protection against it, and that inoculation, as a preventive, is utterly useless. This is abundantly proved in Professor Simonds' two elaborate and thoroughly scientific reports upon the subject, made twelve years ago, and which he now confirms as it being of no more use than a seton, and as not having one scientific leg to stand upon as a preventive of pleuro'. The experience of inoculation in our Australian dependencies are exactly the same. I am led also to the conclusion that homœopathy and hydropathy are of no avail; that bloodletting, counter-irritation, purgatives, sedatives, or narcotic medicine, as a means of cure, have proved to have little or no influence in combating this disease. We find some few cases recover under the most opposite methods of treatment, but I think the candid and enlightened mind will not arrogate wholly to himself the cure, but would rather say as our respected ex-president, Mr. Lawson, very modestly and, as I thought, very wisely, said at our last meeting, "To my utter astonishment, they every one of them got better, but whether it was due to my treatment or not I am not prepared to say." I am come to the conclusion also that all our notions about ventilation are at fault; they are entirely inapplicable and, utterly inefficient as a preventive of pleuro-pneumonia in cattle. In respect to it being contagious, is a question not yet clearly established. We see situated upon yonder high land a dairy which no expense has been spared to render everything that is likely to contribute to and ensure health, and where we consequently expect we must have an immunity from disease. We see that the sweet fresh breath of Heaven plays about it and sweeps freely through the place; the ventilating shaft with the ingress upon the ground surface, and the temperature, always scrupulously attended to. In this place there are no drains, no "grids," nor manure-heaps, permitted to accumulate, but in every department cleanliness, regularity, and care, are diligently and rigorously persisted in, and yet what are the results? The morbid influence, the fell destroyer, has taken up its abode there, with only limited periods of absence, and would appear to be perfectly irrepressible by any and every known human agency. We see (it may be) at the very next farm, where no pretensions whatever to care or cleanliness are observed, where the hovel is so low that you cannot stand upright in it, and the walls and top of the building

strangers to a brush of any kind perhaps for thirty years, where there is no ingress nor egress for a breath of air, and where the manure heap is within one yard of the door, and only removed at rare intervals of time; where the green, fetid, putrid, decomposing animal and vegetable matter is reeking and disgusting to the senses; yet, strange as it may appear, the disease has never visited this loathsome place. From these facts I conclude that the germs of the disease are not equally disseminated in the air, but subjected to drifts or to some law not yet known to us. We have, I doubt not, each of us met with instances of this kind. How can this phenomenon be accounted for? In the present state of our knowledge it is a mystery, but I think the influence is fairly deducible that this disease is not referable to any so-called nuisance, or any mephitic emanations. It runs its complete course unattended by the precise characteristics essential to true inflammation. But whilst this perplexing problem has been taxing my brain there is one idea that has been fixing itself in my mind, and I find the conviction is growing stronger and stronger (and these discussions have only tended to incite my mind to more deep thought and study); it is this, that the disease is the direct action or effect of inhaling a special virus, an acrid pestilential malaria, which exists in the atmosphere; but whether it is a subtle geological elimination, an aërial poison chemically developed by certain favorable conditions of the atmosphere, or whether it be referable to the existence of some germinal spore or infusoria of infinitesimal minuteness in the air, are questions that science is not yet able to make known to us; we are only able to take cognizance of it by its effects. This acrid irritant comes into actual contact with, and becomes impacted upon the fine, delicate, sensitive membrane lining the air-cells. Of this I am persuaded, that a certain tangible, actual effect is produced upon it during the act of endosmosis and exosmosis. That thus this delicate membrane becomes impervious; the effect being analogous to the action of some powerful caustic upon it, and therefore this membrane is the primary and special seat of the disease; the interlobular structures becoming implicated shortly afterwards. Occasionally we find the disease limited to clusters of lobules, or even to isolated lobules. If the atmosphere happens to be largely impregnated with this gas, or whatever else it may be, then the effect is sudden, causing instant serous effusion or exudation, and the whole substance of one or both lobes of the lungs swelling at the same moment; the symptoms become violent, and in a few hours the most inveterate, malignant tumefaction and induration is established, assuming very soon the gray or

marbled stage, a condition which I consider positively irrevocable. But if the air is only feebly impregnated with this gas, or whatever else it may be, at the time, then the effects are feeble also, and probably in some cases only transient in their duration; *these cases are curable*. All other affections of the chest would appear to have merged themselves into this type of disease; but I maintain that in no one case can pleuro-pneumonia be in existence many days without its effect becoming apparent. This conviction has grown upon me still more during this very interesting discussion, and through the various conversations I have had with other experienced and enlightened men. One of the most respectable and intelligent butchers in Manchester told me the other day that for a great number of years he has been in the habit of buying for slaughtering twenty cows a week, and that he had found the lungs affected with "pleuro" in only one instance where it was not apparent when the animal was alive.

Method of Prevention and Cure.

I trust my readers have not arrived at the conclusion that no mode of prevention or cure can ever be effected. If it be suggested that human science can give no solution to this question, that men of extraordinary powers of mind cannot lessen the difficulty, we occupy a most humiliating position indeed. Such is, however, I believe, the generally received opinion, but I also believe that no delusion can be more common or more baseless. It can be shown by antecedent progress that human beings, all but superhuman in their natural powers, have conceived, exercised, and determined great eventualities and discoveries. This, then, is a very proper inquiry for science to press on, for to the man of energy possibilities become probabilities, and probabilities certainties. It would appear that powerful diffusible stimulants, in the first stage, as medicaments, are most effectual. The suggestions I am about to make have been upon my mind for some time. Thirty-three years ago all the scientific societies in England were engaged in discussing the advantages of railway trains having sharp ends like unto ships, but it was proved that a train carried upon it and around it a certain load of atmospheric air, and that the pressure was nearly the same under all circumstances. I also remember that when the question of consuming the dense, thick, black smoke of our chimneys was under discussion at our town council, one of our ablest chemists told them it was not that dense, black smoke, but the thin invisible sulphurous smoke, that was so prejudicial to health. Again, in the Valley of Death in Java, it is well

known the subtle poison only floats in the lower stratum ; in fact, in all confined places we find the foulest air and the pestilence most malignant in the lowest strata, and that consequently those men or animals inhaling the lowest succumb the soonest. You will, perhaps, be ready to reply to this, " Yes, we know this is the case ; it is the carbonic acid gas which is of the greatest density ;" but I think I need not tell you there are other subtle invisible poisons in the air besides the gas you name, and which our finest and most delicate instruments have yet to disclose. The microscope has opened up to us another world ; but wonderful as its powers are, I believe the time is fast approaching when that instrument and the sepo-meter will attain a far higher and greater state of perfection ; when science, with the aid of such instruments, shall be able to trace everything to the very bourn of nothingness. I do not mean to say that man will ever be able to read the whole arcana and secrets of nature, or solve all her problems, but even now we have removed some of the mists and unveiled many things that were unknown, nay, a mystery to us before. We can even now contemplate the unmeasured amplitudes of creation, and the mighty systems of things, as well as watch the swarms of animated life that people a drop of water. But as science advances we shall be enabled to see our now invisible and dreaded enemy face to face plainly ; then the constituent parts of the atmosphere will be seen and comprehended, and every change in it be at once observed ; then that will be no longer a mystery to us which is so now ; then every pestilence will be called by its right name and ascribable to its exact and legitimate source ; we shall see then whether it be infinitesimal infusoria, or geological eliminations drifting about over immense tracts of the earth's surface, or whatever else it may be ; we shall also be able to see clearly in what manner it impinges itself upon and becomes impacted into the living tissues of man, animals, and vegetables. But in the interim what is to be done ? Do you say, send all the diseased cattle one after another to the slaughterhouse ?—a course not to be reprobated, since it would appear the flesh is not diseased nor unwholesome. Well, that would seem to be the system nearly all men are now adopting, and our debates these two nights have not brightened our prospects much. Well, but I have spoken already about subtle poisons ; I find that in times past the Will-o'-the-Wisp, or *ignis fatuus*, was frequently seen in low marshy lands, and in every well-authenticated instance that I can meet with, it was always observed nearly upon the surface of the ground. Now, it is a fact that when the disease first broke out its

ravages were most fearful in the Rhenish Provinces, in Belgium, and Holland. The whole of these countries are flat, marshy, and swampy. I find in Mungo Parke's travels in the interior of Africa, and also in the works of that enlightened and scientific explorer, Dr. Livingstone; and Mr. Haycock informs me that that eminent and distinguished explorer of the Nile, Captain Speke, confirms their statements, viz., vast tracks of country are infected with pestilential fevers, desolating whole districts; and that the course adopted there was to sleep in hammocks elevated fourteen feet above the surface of the earth, where they found they enjoyed a perfect immunity from disease. It would appear there is a certain law regulating this subtle gas, or whatever else it may be, that it cannot ascend beyond a given height, but is confined to certain lower strata of air, resting upon the surface of the earth; and thus, if occupying the stratum above, you are beyond its reach and influence. You are perhaps ready to ask me, "Is it your suggestion, then, to have my cow 'teagled up' into an upper room, into the stratum above that in which the poison floats?" If I answer you *it is*, you may possibly laugh at the bare idea; but is it, I would ask, irrational to surmise its value to our patient when we have proof upon proof of its certain and intrinsic value in man, and especially so when everything else has proved an utter failure. If there is a truth in it, the method of doing it can be readily accomplished, nearly as readily as removing her into another shed; and if it should prove a success, then I feel persuaded the philanthropist will not laugh at it, and science will then espouse it as one of her greatest and noblest triumphs.

DOES THE PRESENT METHOD OF TURNIP CULTURE AFFECT THE PLANT, AND IF SO, ARE THE INJURIOUS CONSEQUENCES IMPARTED TO SHEEP?

By D. GRESSWELL, M.R.C.V.S., Louth.

GENERAL experience admits the fact that the turnip crop is not so certain as heretofore, which by some people is thought to arise from the stock, or seed-growing, turnips not being sown early enough for the root to reach a full and perfect development before their growth is stopped by cold weather; and that the seed, in consequence of being raised

from a miniature root, partakes of the incomplete or stunted growth of the plant. This, however, is not the case; the bulb is larger than ever, but more prone to disease, which is attributable to the poisonous, acid, rotten, decomposing seed-bed adopted.

I am not going to argue against supplying the soil with all the elements required for bringing the root crops to full and perfect development, as undoubtedly a want of one or more of the elements in sufficient quantity for the sustenance of the plants frequently exists, and to such an extent as to render them weak, diseased, and unprofitable; but to the mode in which these fertilisers are used. The first point contended, is that an unhealthy seed-bed is formed from the manures being in too concentrated and acidly soluble a form, and that the young plant is injured by these concentrated manures being in juxtaposition with the germinating seed, which frequently receives more of these mineral salts than it can appropriate, producing that efflorescence on the leaves the forerunner of mildew; and secondly, supposing these manures to contain either lead or arsenic, that the evil consequences are still further augmented, as it is established by chemical investigation that vegetables are capable of absorbing poisonous salts from the soil and becoming themselves poisonous in consequence. (Dr. Taylor 'On Poisons,' article, "Lead.") Hence it is of paramount importance that the chemical manure manufacturer should supply these valuable and indispensable fertilisers free from all poisonous contamination, and guarantee their purity to his customers by the strictest chemical investigation, or the consequences may become of the deadliest character, not only to farm stock, but even to man himself. Thirdly, the seed being sown upon decomposing organic matter, or matter in a state of transition, that the putrefactive fermentation possesses a power of producing or transmitting its own action to any organic substance, and thus imparts an aptitude in the root or bulb of the turnip to undergo an unnatural and spontaneous decay, even before it becomes fully matured, which so far weakens the plant as to render it incapable of standing sudden changes of temperature, and would, were it not for its biennial nature, have made it as uncertain a crop as it has long since done the potatoe. The wurzel has likewise been under the same pernicious influences as the turnip; the longer it has been grown the more uncertain has the crop become. In fact, these crops, managed according to the present system, have within themselves the elements of decay to such an extent that an extraordinarily severe winter would rot them all.

Fourthly, there is another potent reason why organic matters should be avoided as a seed-bed, namely, in the wonderful tendency they have at this season to become a mass of life, the vitalising influence of the sun acting upon the hidden germs of insects, which in favorable seasons rapidly produce myriads of those forms that live and prey upon the roots and leaves of the young and tender plant, frequently causing the farmer to resow his land. These organic manures contain the eggs or germs of insects, and act as hot-beds for the production of the fly, the smallest fly, &c., spreading all sorts of filth to adjacent crops of beans, peas, tares, &c. Every garden, every manure heap, every putrefactive mass, shows and substantiates this fact.

To avoid these four causes of disease, and their host of consequences, let the manurial seed-bed cease to be adopted. Have the whole of the organic manures put on the land in winter or early in the spring, and thus deprive the germs of insects of life by cold, and afford decay a chance of completion before the elements are required for vegetation. Purchase also only those mineral manures that are warranted free from arsenical or lead contamination. These should be sown broadcast in double the quantity a short time before the turnips. Let them be well incorporated with the soil, and you need not fear getting a good heavy crop of sound winter food. But this manurial seed-bed, although it must in time be given up or wonderfully modified, has many strong and energetic advocates; consequently it will be well to show how it may be used least injuriously. Foremost stands the liquid drill, where pure mineral substances are used. These chemical salts, by the time they get into the soil, being diluted to over one hundred times their bulk, the practical results are good crops of sounder food. The water drill, however, is not applicable to all situations, and the dry drill is not practicable to dilute them to the required extent, but might be so constructed if some mechanical appliances were adapted to mix these substances thoroughly in the seed-bed with the soil as they are deposited from the drill, three hundredweight of these mineral salts to the acre requiring to be mixed with about fifteen tons of soil to bring them to the like condition of dilution afforded by the liquid drill. If these mineral salts are not entirely divested of poisonous acid and organic substances, and diluted to over one hundred times their bulk, they had better be sown broadcast if we wish diseased turnips to be the exception, not the rule, which is no slight consideration in the present day, when we consider their effects upon sheep. The diseases of sheep have been increasing in a cor-

responding degree with these so-called improvements in turnip culture. Thousands upon thousands of lambs fall victims to parasitic and other diseases in the autumn. These worm diseases are caused by the sheep taking into their system the eggs or germs of worms from the turnips, the necessary products of an organic seed-bed before the weather has been severe enough to deprive these germs of life. These germs quickly propagate at a time when the vital action of the system of the lambs is at its lowest ebb, from the unkindly way in which they take to their new food. They shrink rapidly, although generally unperceived, from the wool-covering. They should either have a little artificial food or some kale when first put on, so that they may be brought to eat this new food without losing much condition, and thereby be rendered proof against parasitic or worm diseases. In fact, lambs should be well cared for from the time they are weaned until they get well hold of the turnips.

In the northern part of Lincolnshire, soon after the commencement of the present year and up to the full term of pregnancy, thousands of ewes have aborted or slipped their lambs in a state of decay, and hundreds of them have died. Here a combination of causes have produced the results; the extreme cold in the first week of January, the altitude of the Wold Hills, and the rotten condition of the turnips, acted destructively upon the breeding, especially of twins. In fact, the action of the extreme cold in high bleak situations has been too much for the heavily taxed breeding ewe to stand while feeding upon badly organized food. The greatest losses have been experienced where the turnips were nearly all in a state of decay, and where artificial food was not early resorted to. Some people think, because sheep will eat this fermenting food, that it cannot be injurious; but I would ask, how can it be otherwise, when all the organic principles, such as the sugar, starch, &c., are being resolved into the gaseous or unorganized form? We may as well expect the living frame to elaborate its own structures from earthy or gaseous elements. Pathological investigation shows that slow and gradual changes have been secretly and slowly working out their fatal ends—the heart, lungs, liver, and kidneys of these ewes having lost their natural firmness of structure, and one or all assumed more or less a soft, pulpy, broken-down character; besides which, a general decay or decomposition had to all appearance set in even before death, so as to make you at times doubt the statements of the shepherds, that such and such animals had only been dead some two or three hours. There has been another disease amongst breeding ewes,

affecting those chiefly on grass land, which is evidently the result of extreme cold alone, and is not inaptly termed "storm-struck." Here abortion was not the leading feature, but a general and total paralysis seized all the voluntary muscles, the brain becoming affected, and the poor animals dying in from twelve to twenty-four hours, in a state of coma, or in the milder cases slowly recovering, emaciated in form, and perhaps ultimately aborting their young. This disease, however, has not existed to any great extent.

The highest altitudes of the Wold Hills have suffered most by the ewes aborting. They are more freely supplied by a manurial seed-bed, the turnips are more generally unhealthy and rot early, and the sheep likewise suffer more from nearly all sorts of disease than in the lower-lying grounds.

The turnips that were affected with the smother fly last summer, and stocked early in the autumn, produced a low gastro-enteric fever in the hoggets, which killed them by wholesale; the deaths were, however, quickly stopped as soon as a change to more healthy food took place. Not only is decaying matter capable of transmitting its action to young growing vegetables, but decaying vegetables will equally transmit that action to the blood of animals, and thus render it incapable of maintaining the wants of the system. There are other weakening influences in action. The indiscriminate application of mercurial ointment on sheep cannot be too strongly condemned. It is a delusion to think that it either adds to the weight of the wool or improves the condition of the animal, but, on the contrary, it diminishes the fleece, by weakening the constitution, and thus rendering the animal for some time more prone to take on disease from slight causes. It should never be used unless the sheep are really scabbed, the washes in general use being cheap, and far more effectual, when properly applied, in the destruction of filth. Neither should common salt be given *ad libitum*; it causes the animals to take more fluid than is consistent with a due concentration of the gastric fluid to properly digest the food, hence results emaciation and a decreased power of resisting the causes of disease. Rock salt may be allowed in the lump, but not in a state of powder. The present forcing system of bringing the animal in half the time to the stall of the butcher has its influence in weakening the constitution by loading the carcass with fat; but happily this system is not generally adopted in breeding animals, or its positive tendency would in the end be to annihilate the flock. To blindly look on, and, with the multitude, ascribe disease to causes over which we have no control, is at one fell swoop to paralyse effort. All

effects are the result of causes: hidden they may be and as they undoubtedly are in many cases, under heaps of blind customs. These, however, only require to be looked into without prejudice for truth to stand forth in all its beauty and simplicity. In drawing these few remarks to a close, my object will be answered if I succeed in directing public attention to a subject of so much importance; that a more extended scientific investigation of it may be elicited, whereby error and danger shall be averted.

DEATH OF THREE HEIFERS CAUSED BY THE
RANUNCULUS FICARIAE (LESSER CELANDINE.
PILEWORT).

By HENRY FLOWER, M.R.C.V.S., Derby.

THE following particulars respecting the death of three heifers, from their partaking of a species of *Ranunculus* (*Ranunculus ficaria*), I have forwarded to you, with a view of their being brought under the notice of the profession through the pages of the *Veterinarian*. I feel sure that, on closer examination, in many of our pastures various plants will be found which at certain seasons of the year are calculated to produce injurious and not unfrequently fatal effects upon animals. Hardly a spring has passed without a case or two like the following having come under my notice; and although I have always had suspicion that death was in some measure attributable to plants growing in the pasture, I have hitherto been unable to trace it to its true source. Nor is this to be wondered at, considering the opportunities afforded us of obtaining a knowledge of that science, by the aid of which alone investigations of this nature can be fully carried out, viz. the science of botany. To all, more or less, but to country practitioners especially, an acquaintance with this science will be found of great practical utility, and prove a means of tracing to their true source many of those diseases amongst animals which are at present but little understood. Every day its value forces itself more fully upon our consideration, and I trust the time is not far distant when its claims will so far be felt and acknowledged by its forming an integral part of the professional education of the veterinary surgeon.

On the 15th of April I was requested to attend a heifer, the

property of W. Mundy, Esq., M.P., of Markeaton Hall, near Derby, which was thought to be giving evidence of an attack of the "foot and mouth disease." Upon my arrival I found that the animal in question, with four others, had been kept in a good pasture during the winter; and as they had been liberally supplied with hay and turnips, they were all in good condition. This heifer had, however, been noticed to purge considerably the night before my visit, and was now evidently very much out of health. That something more than the ordinary "foot and mouth disease" was the cause of her illness was at once apparent from the violent rigors and spasmodic twitching of the muscles which existed. Besides these, the following symptoms were present, viz., arched back, staring coat, and a copious flow of saliva from the mouth. She was also in a semi-comatose state, and when aroused from it she would become very violent and rush against anything, or dash her head violently against the wall, occasionally bellowing as if in great pain. From having previously met with cases of the kind, I was convinced that the animal was labouring under a narcotico-irritant poison. This induced me at once to go into the pasture to look at the remainder of the animals, when I found two of them to be slightly affected in the same manner. I commenced my treatment, although with but little hope of success, by bleeding and administering large doses of oil, combined with other purgatives. All however proved of no avail, as the first heifer rapidly sank and died the next morning. With the second heifer similar treatment was attempted, which, however, could be only partially carried out, as she became so violent that the united strength of five or six men could not hold her. During the night she broke down the doors of the shed in which she was placed, and rushed to the bottom of the field, where she fell and died. The third case was similar in its progress, with the exception that the symptoms were less violent, and that the animal lived for three days. Such being the state of things, I of course took care that the two remaining heifers were at once removed from the field, and I also gave to each some purgative medicine.

By the consent of Mr. Mundy, I requested Mr. Watson, M.R.C.V.S., of Rugby—to whom the profession are so much indebted for his valuable contributions on botany in the *Veterinarian*—to come over and assist me in a *post-mortem* examination of the last-named heifer, and examine the herbage, &c., in the pasture. With his usual kindness, Mr. Watson promptly attended, and for the great assistance he gave me in the investigation it is only right that I should offer him

my best thanks. After a careful examination he drew up the annexed report, from which it will be seen that the deaths of the animals resulted from their having partaken of considerable quantities of the *Ranunculus ficaria* (lesser celandine, or pilewort) with their food.

The *post-mortem* examination revealed extensive disease of the stomachs and bowels, particularly the rumen, the epithelium of which peeled off with the slightest touch, exposing the mucous membrane in a highly congested condition, amounting in many places to a state of ecchymosis. The omasum was in a similar condition. The small intestines were also much inflamed, and the brain congested.

The following is Mr. Watson's report:—"On Thursday, April 21st, 1864, by the request of Mr. H. Flower, M.R.C.V.S., I proceeded to Derby, and, accompanied by him, made an examination of the different plants growing in a field near the residence of W. Mundy, Esq., M.P., about two miles from Derby, my investigation having reference to the death of three valuable heifers. The field in question was about ten acres in extent, and in it five heifers had been kept for some months previous to April 12th, all up to that time being in apparent health. Between that date and April 20th three of the heifers had died. The symptoms in each case, together with the *post-mortem* appearances, indicated the presence of an irritant poison. From inquiries, I ascertained that the day previous to the animals being attacked some of them had escaped from the field into a plantation, which formed the boundary of a considerable portion of it. Here, however, they only remained for a very short time before they were discovered and brought back. This circumstance naturally gave rise to a suspicion that the animals had partaken of something growing in this plantation; and, although several plants, such as the *Hyacinthus nonscriptus* (wild hyacinth, or hare-bell), the *Arum maculatum* (cuckoo-pint), and the *Taxus baccata* (yew), all more or less of a poisonous nature, were here found, and the former in considerable quantities, yet a most careful examination failed to detect any indications of these plants having been bitten, or otherwise interfered with by the animals. On the banks of a small stream which bounded another side of the field I found small quantities of the *Cicuta virosa* (cowbane, or water hemlock), but this also had not been interfered with. In the field itself, besides the ordinary plants growing in good pasture, I found considerable quantities of the *Orobis tuberosus* (bitter vetch), small quantities of the *Ranunculus acris* and *bulbosus* (crowfoot), and an unusual large quantity of the *Ranunculus ficaria* (lesser

celandine, or pilewort). No other plants likely to prove injurious to animals could be found.

“Taking into consideration, therefore, the symptoms presented by the animals, together with the *post-mortem* appearances, and the unusual large quantities of the *Ranunculus ficaria* found in the pasture, I have every reason to believe that this plant was the cause of death in the animals in question. It may be asked why a similar circumstance has not occurred before, when animals have been kept in this particular field? I think their escape may in a great degree be accounted for, as the person who had attended to the stock for many years informed me that these heifers had been kept for a fortnight or three weeks longer in the pasture than any others had been in former years, previously to its being ‘shut up’ for mowing, and therefore they were there at the time during which this plant attains its greatest luxuriance.

“To avoid accidents of this sort in future I would recommend the animals to be removed from the pasture earlier in the spring. I may also state that this plant, like many other of the *Ranunculus* tribe lose their irritant properties when made into hay.”

[Sowerby, in his ‘English Botany,’ says that the specific name—*ficaria*—has reference to the shape of the roots of this *Ranunculus*, which are somewhat like little figs. Its acrid property has led to its use as a stimulant plaster for some forms of external humours; hence one of its popular names. As the celandine, its praises have been sung by modern poets. Wordsworth has referred to it as “the little humble celandine.” The tiny tubers of the roots are often exposed to view by the washing of contiguous streams, or by rain, and then they look somewhat like grains of wheat; this appearance has given rise to the assertion that it has “rained wheat.” The young leaves of this plant are boiled by the common people in some parts of Sweden, and eaten with safety. It appears that the deleterious properties of the whole group may be dissipated by the application of heat. It is injurious to moist grass land, but it is said to be effectually destroyed by a dressing of coal or wood-ashes. The flower loves the sunshine and light. We generally find it closed from about five in the evening until nine in the morning, and also during wet or very gloomy weather. Its Celtic name, *grian* (the sun), refers to this point in its history.]

‘OUR DOMESTIC ANIMALS IN HEALTH AND DISEASE.’

Comments by “QUÆSITOR.”

GENTLEMEN,—I was pleased to find, on reading this month’s number of the *Veterinarian*, that your talented correspondent, Mr. Fleming, had called the attention of the profession to a statement which he found in a work now publishing, entitled ‘Our Domestic Animals in Health and Disease,’ in which the author asserts that of the lame horses cast as being no longer fit for military service two thirds are preventable cases, and many of them even curable by the simple application of a better system of shoeing than now prevails in the service.

If our army veterinary surgeons will but give us a few statistics, which they can easily do by looking through their case-books, the correctness or otherwise of this statement will soon be arrived at.

For myself individually, the question has a great interest, as for some years I—in conjunction with some resident landed proprietors—have been trying to introduce the mode of shoeing generally adopted in this country into Germany, more especially Saxony, as being superior to that now in use, both for military and general purposes, and, as we conceive, with highly satisfactory results.

This attempt at an innovation naturally caused a discussion; and amongst others who have written upon the subject is Veterinary Surgeon Erdt, of Cöslin, who, in a paper sent to an agricultural journal, published monthly at Berlin, says, “If we compare the two systems, the result is very unfavorable to the English. In the Prussian army scarcely $2\frac{1}{2}$ per cent. of the horses are cast on account of foot lameness, whereas Miles himself, in his work, page 38, says, “and still there are more horses cast as unserviceable every year from disabilities commencing in the foot than from all other causes combined. For that reason, according to the testimony of well-informed Englishmen (Goodwin), the shoeing is so faulty, that in no country are so many ruined feet to be met with as in this, for its breed of horses so famed a land.”

What inference are we to draw from these statements? Mr. Erdt says that horses wearing shoes, specimens of which lay on the table whilst I am writing, which

would be considered too inferior in make to put on the feet of a London cab-horse (which is saying much), produce but $2\frac{1}{2}$ per cent. of the lamenesses for which horses in the Prussian army are cast; whereas the author of the work on 'Domestic Animals,' &c., tells us that the shoe considered by the authorities in this country to be the best of its kind now in use produces upwards of 60 per cent.

I must say that my experience would lead me to expect that Mr. Fleming, with the assistance of the army members of our profession, will be able to prove that somebody has made a mistake in their figures.

I am, &c.

To the Editors of 'The Veterinarian.'

CASE OF "BREAK-DOWN."

By "ARGUS."

A FEW mornings ago (about the middle of April) an officer rode up to my house to ask me to go and see a horse of his that had met with a severe accident on the race-course, while taking an ordinary training gallop. The impression on the owner's mind was that the horse had fractured both his fore legs, but from his replies to questions I put to him I inferred that it was a case of complete break-down, and told him so. I also recommended him to shoot the animal at once, as I was busy, and could not well spare the time to ride out some three miles to see so evidently hopeless a case. He, however, begged of me to go, as the horse, an old Arab, was a favorite of his wife's, and I might possibly see some chance of his recovering sufficiently to become even an old pensioner. I accordingly accompanied the owner, and found the case a much more hopeless one than I had anticipated. The horse was lying down when we got to the spot; he was in great pain, and very restless, and covered with perspiration. On his rising, the fetlocks of both fore legs came to the ground, the pastern and foot of each being turned *outwards*, resting horizontally along the ground. The lower end of the large metacarpal bone of the near fore leg was protruding through the skin and in contact with the ground. I advised the instant destruction of the poor brute, and shot him myself at the request of the owner, who said he could not do it.

Dissection of the fore legs revealed a rupture of the internal lateral ligaments of the fetlock-joints, also of the

internal inferior branches of the suspensory ligament, and of the crucial ligament. There had been some thickening about the fetlock-joints previous to the occurrence of the accident, but not more than one frequently sees in old horses that have done work. At the time of the mishap the horse was going at a steady gallop, being held well in hand. He was ridden by a native jockey, weighing about six stone seven pounds; the ground was good, soft, free from holes, and quite level. When the rupture of the ligaments took place the animal went "a complete cropper" falling on his rider, but luckily not doing him any very serious injury. Accidents of this kind are said to occur among race-horses at home occasionally. Are they ever known to take place during the *ordinary* gallops during training? I send you an account of this case, as I think it a peculiar one, and perhaps you may deem it worthy of being placed upon record.

[In our last we recorded an analogous case to this, which occurred in the practice of Mr. Blakeway; and it is not a little singular, taken in connection with these cases, that in the race for the Oaks "Saragossa," the property of the Earl of Zetland, while going, as it is said, "well within herself," was seen to fall, and on examination it was found that one of her legs was broken.]

Facts and Observations.

VIVISECTIONS.—The Royal Society for the Prevention of Cruelty to Animals have announced that they are about to offer a premium of £50 for an essay against vivisection, in English, and 1000 francs for a similar one in the French language, which they hope will continue the agitation against that practice which they have instituted.—*Medical Times*.

DISEASED MEAT FOR THE NAVY.—An action was brought in the Court of Queen's Bench on the 7th ult., which proves that our sailors are at least as much exposed to the dangers arising from eating diseased meat—whatever they may be—as the rest of Her Majesty's lieges. The action was brought against two persons, named England and Curtis, who are meat contractors for Deptford Dockyard. The plaintiff Davies was foreman to Curtis, and was employed by him in cutting up the carcasses of cattle alleged to be diseased. One ground of the action was that the plaintiff had been infected by the disease of the cattle. The Court gave judgment

for the plaintiff, on the supposition that the defendants were aware of the diseased condition of the animals.

TINCTURE OF ALOES AS AN APPLICATION TO WOUNDS.—M. Delioux observes that, notwithstanding the great repute of aloes as an external application in former times, it is now seldom used, and that he was induced to give it a trial in consequence of its great utility in veterinary practice. After trying it in combination with other balsamic substances, he has come to use it alone, finding a saturated tincture made with one part of aloes and two of alcohol to be the best preparation. Suppurating wounds, when at all of an atonic character, are to be dressed by means of charpie dipped in the tincture, the application causing little or no pain. Old and obstinate ulcers, and ulcers from decubitus in cachectic subjects, are much benefited by it. It is useful also to bear in mind its great cicatrizing power in wounds and ulcers occurring in our domestic animals, especially the horse. Erosures and gallings by its aid are prevented degenerating into ulcers.—*Bull. de Thérap.*, vol. lxvi, p. 28.

HORSE-RACING IN CHINA.—Races have been got up at Peking, and proved a decided success. They were held in the dried-up bed of a lake, near one of the imperial palaces outside the walls. A better spot could not have been chosen, as the slightly elevated ground forming what were the edges of the lake afforded good standing-ground to the thousands of spectators who crowded to witness the sport. It is estimated that at least 50,000 Chinese attended, besides the members of the several foreign legations, and several of the Chinese foreign ministers. Between the third and fourth races the drilled Manchu force, which was organized by Captain Coney, marched on the ground, and performed a series of manœuvres, after which all the high officials, native and foreign, entered a large tent and took luncheon. The whole affair was most successful, and seems to have been highly appreciated, both by the Chinese and European spectators.

WHOLESALE DESTRUCTION OF DOGS.—A crusade for the prevention of rabies has been entered against the Liverpool dogs. It has been estimated that upwards of 1000 dogs have been destroyed during the past month—700 by the police, and 300 by private individuals, while endless informations have been disposed of by the magistrates. On Thursday one person was excused the fine, because the dog

was "quite twelve years old, with scarcely a tooth in its head; of a harmless disposition, and had suckled at one and the same time a pup, a kitten, and a rabbit."

VETERINARY REPORTS AND CATTLE DISEASES.—Sir J. C. Jervoise, in his place in the House of Commons, has called attention to the charge for expenses connected with the inspection of cattle and sheep to prevent the spread of disease, and maintained that the statements in the blue-book were calculated to create a panic among agriculturalists. Every fifth animal, and by consequence every fifth mutton chop, was stated to be diseased, while there was not only death in the pot, but in the pail. The total loss by preventible diseases in cattle was estimated at £6,000,000 yearly. He wished to know who was to be held responsible for such statements, inasmuch as the medical officer who had despatched eminent veterinary surgeons on commissions of inquiry, not only through this country, but abroad, disconnected himself in a note at the end of his report from the opinions put forward by them. The epidemic diseases were attributed in the blue-book to contagion originally of foreign origin, whereas the medical officer attached to the customs department reported that not a single case of smallpox in sheep had entered this country.

Mr. Bruce said the Secretary to the Treasury had already explained from what source the cost of these inquiries was defrayed. The hon. member seemed not to deny the great ability and clearness of the reports, but apparently objected to the manner in which they were compiled. The subject of diseases in cattle was one upon which a great variety of opinions existed, and it was now receiving the attention of a select committee.

A BRITISH DOCTOR OF 1612 ON EGGS.—"Egges be of that kinde of meate which in a little quantitie nourish much, as Avicen writeth. Wherefore they are reckoned in Scho. Sal., together with other nourishing things, as followeth:

'Ova recentia, vina rubentia, pinguia jura,
Cum simulâ purâ, naturæ sunt valitura.

That is to saie, new laied egges, chiefly the yolkes, red wine, and potage or broth of good flesh, as of mutton, veale, capon, or chicken, especially being made with fine flower or grated bread; these are very comfortable and restorative for man's bodie, and these three would I wish to be much used of students, for they most neede nourishing matter."

THE VETERINARIAN, JULY 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ON MEDICAL EDUCATION.

WE had hoped to have been able to attempt the fulfilment of a promise made by us in our last number, namely, “freely to express our opinions” on the late annual meeting of the profession. But the highly gratifying support we continue to receive from our correspondents precludes our entering upon the many points both of interest and importance which present themselves. To one, and only one, can we now allude. It may, however, be said to be the foundation on which all the others rest, whilst it is also the crowning stone of the edifice, and involves a question very difficult of solution. It is, if the system of instruction generally adopted at our medical schools is the best that can be devised? May it not be that the attendance upon lectures is too rapid, time not being given to the mind of the student to digest what he has heard on one subject before he is called upon to listen to another? Further, but little inquiry is afterwards instituted as to the impression made, or the amount of information acquired. We have been very much struck with some observations lately made by the Archbishop of York on this subject, and think them weighty and well deserving of consideration. After having stated that the system of teaching in the University of Oxford was essentially a mixed system, he went on to say that—

“The professors in their several lines were second to those of no university; but the staple education of the place did not proceed from those professors. There were besides a class of persons called tutors, upon whom, in reality, devolved the real work of education. The professor took

under his charge a particular subject, carried his studies in it as far as he could carry them, and lectured in it to all who approached him. Being the standard of his particular subject, tutors themselves were quite willing to come and sit at the feet of the professor, and so keep up their own knowledge of the subject. He had an impression—it might be quite erroneous—that the system of teaching medicine was too much professorial and too little tutorial. They would understand what he meant when he explained what the tutor did. The professor took in hand a particular subject, while the tutor looked after the education of the pupil. He assembled round him a small number of men in a room, opened a text book, and explanations out of that book were given; but from the very first questions to the pupils went hand in hand with explanations from the tutor. In that particular thing lay the point and essence of the whole system—in the particular fact that the attention was what he would call active attention, as distinguished from passive attention, from the very first. *No sooner had a man had half an hour's instruction, than he was asked for some return in the shape of answers to questions.* It might be that he was prejudiced in favour of this method, that this kind of active attention was very easily given on the part of the pupil, whereas the passive attention, which received and gave nothing back, was very difficult to maintain. He maintained the tutorial system as against the professorial, not that he did not see great advantages also in the latter, but because he thought, on the whole, that for a place where subjects were to be taught to the average run of men, and where they considered the men more than the subject, the tutorial system, in some of its modifications, was the system most profitable to be employed. He had heard that the lectures the students of the hospitals are expected to attend varied from fourteen to twenty-one in the week. He thought that an extraordinary number. At Oxford, where the lectures were easier, they thought twelve in the week a very good average, and even with that number, towards the end of their time, when preparing for examination, students often come to their tutors to be excused from attending lectures, and the request was granted as a matter of course. There was clearly a great difference between the hospital system and that of Oxford with respect to the number of lectures. While confessing his ignorance of the matter as regarded them, still, having formed an impression of human nature, he was disposed to say a word in favour of mercy with regard to the number of lectures. *It seemed to him almost impossible that a man could*

sit three or four hours, constantly receiving and giving nothing back, without wasting a considerable portion of that time. It was possible, therefore, that a hint from the Oxford system might profitably be taken by their excellent institution, and that when it was known that the pupils were profitably employing their time, they might with advantage be left more to themselves in the pursuit of their studies. There were even stronger reasons for doing so in the hospital than at Oxford. At the university a man, when summoned to lectures, could put a mark in the book he was studying, come back, take it up, and nothing was changed; but in the hospital, if a man was engaged in chemistry, he could not leave his test-tubes and retorts simmering and fizzing, go off to lectures, and return without a certain interruption, loss of time and material, and a certain fret and worry of his thoughts. The same, he presumed, would be the case with regard to dissection, and anything requiring time and the use of hands and instruments. If students could be trusted to work, better leave them to it than to tease and worry them to come away for instruction."

There is much in the above with which we heartily concur. Two sentences we have italicised, the one as being, as we consider, worthy of adoption in our schools, and the other being a great truth, although but little thought of. The mind, like the body, is capable of receiving only a certain amount of matter. Like it, too, it demands time to assimilate what it has received; and a system of instruction, therefore, should be adopted which is best calculated to ensure the end in view, or all the labour, both on the part of the teacher and the taught, will be in vain.

The state of our pages, however, prevent for the present any further prosecution of this inquiry. Hereafter we may return to it, taking up some other points that have been adverted to.

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

THE members of the above association held their seventh meeting at the Brunswick Hotel, Manchester, on the 1st of June. The following members and visitors were present:—The President, T. Greaves, Esq.; Messrs. Gould, Irlamsoth Height; Nuttall, Rawtenstall; Brooks, Pilkington; Greaves, Altrincham; Darwell, Knutsford, Litt, Shrewsbury; Cartwright, Whitchurch; Dunn, Tarporley; P. Taylor, Haycock, and Dixon, Manchester; Fleming, F.R.G.S., F.A.S.L., V.S. King's Own Hussars; A. Challinor and W. Challinor, Pendlebury; J. Taylor, Oldham; Morgan, Liverpool; R. Hampson, Manchester; and T. Taylor, Hon. Secretary, Manchester.

At the conclusion of the ordinary business of the association, which included the election of new members and the nomination of others, the further discussion of Mr. Haycock's paper on *pleuro-pneumonia* was resumed. The discussion which followed was very lengthy and interesting. Inoculation was severely attacked by some of the members, and was ably defended by Mr. Cartwright, of Whitchurch, and Mr. Dunn, of Tarporley. These gentlemen, having used it repeatedly, spoke in good terms of its beneficial results.

A great deal was said respecting the contagious nature of the disease, and several different opinions given. Upon this part of the discussion, Mr. Litt, of Shrewsbury, gave some capital ideas. Mr. Fleming and Mr. P. Taylor also expressed their opinions upon the point in an instructive manner. Upon the whole, however, nothing positive resulted from this portion of the discussion; one party contending that the disease was contagious, and another that it was not.

The treatment of the disease proved another stumbling-block in the discussion, every practitioner having his own particular fancy, and thinking that the treatment he adopted was the best. All kinds of remedies were adduced as being beneficial, but no decided success could be said to belong to any.

The essayist, in replying to the different speakers, remarked that he had treated the disease in all manner of ways, and with all classes of medicine, but still always with the same uncertain result. His opinion was that the great secret lay in giving good food and nourishment, and if this did not succeed, he would have the animal destroyed.

The discussion continued until past ten o'clock, when a vote of thanks having been given to the essayist for his valuable paper, the President announced that at the next meeting Mr. Lawson, of Manchester, would read a paper on "Tetanus"

THOS. TAYLOR, *Hon. Secretary.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

HONORARY SECRETARY'S OFFICIAL REPORT.

THE quarterly meeting of the above society was held on the 15th ult., at the Crown and Thistle Hotel, Great Market, Newcastle-on-Tyne, when there were present Mr. C. Hunting, President; Messrs. McGregor, Seaton Delavel; L. Scott, Hetton; T. Thompson, Sunderland; T. Foreman, Shotley Bridge; H. Hunter, Newcastle; C. Stephenson, Newcastle; D. Dudgeon, Sunderland; J. Peele, Durham; A. Mann, Senr., and A. Mann, Junr., Lambton; and the Secretary.

Mr. J. Peele and Mr. J. C. Hubbick (Hubbick and Peele), Durham, and Mr. A. Mann, Junr., Veterinary Student, were admitted members of the society.

The usual preliminary business of the society being disposed of, Mr. L. Thompson, Sunderland, read the following paper on "Tetanus:"

Mr. President,—Before proceeding immediately to the subject of the paper which I have engaged to prepare, and submit to your mature judgment and scientific knowledge this evening, I would remark that I have nothing novel or extraordinary to advance, either in a physiological, pathological, or therapeutical point of view; but simply to provoke free discussion, independent thought, and investigation.

Science is of little value to the general community unless it can be brought to bear practically on the business of life, therefore the responsibility of its proper application devolves chiefly on the professional man.

The well-trained and educated veterinarian is a man of enlightenment and observation, having a thorough knowledge of the animal economy in a state of health and disease, which are essential requisites to the efficient fulfilment of his arduous duties and avocations.

The word "tetanus" is derived from two Greek words, signifying *to stretch*; and is generally used to denote spasm

with rigidity. It is one of the most painful and melancholy diseases which flesh is heir to ; common to the horse, occurring occasionally in the ox and sheep, but seldom in the dog. The various forms are distinguished as acute, chronic, traumatic, symptomatic, and idiopathic, which, however, are various, according to the different class of muscles more or less involved. When the maxillary and pharyngeal muscles are rigidly affected, it is denominated "trismus;" and when *all* the voluntary muscles of the neck, spine, tail, and extremities, are spasmodically affected, it is then designated "*tetanus.*"

The idiopathic form of this disease in the horse is considered by many "veterinarians" to be the most frequent ; but, speaking from my own experience, I have had more cases of the traumatic character.

This dreadful and often fatal disorder proceeds from various causes ; a very fertile source is wet and exposure to cold, or a sudden chill after severe exercise. It arises, also, from local injuries such as punctures, incisions, lacerations, and bruises ; or sometimes even spontaneously, as in hot climates. I have known it to follow on firing, docking, castration, punctures of the feet, wounds in the joints of the extremities, injuries to the spinous processes, scapular, nasal, and orbital bones.

When the disease has arisen in consequence of a puncture, or any other external injury, the symptoms show themselves generally from the sixth to the tenth day ; but when it proceeds from exposure to cold, they appear frequently much earlier ; in some instances, however, it comes on suddenly, and with great violence ; but it more usually makes its attack in a gradual manner, in which case a slight stiffness is at first perceived in the neck ; the muscles of the eye, especially the retractor oculi, shows the earliest spasms.

The diagnosis of "tetanus" in the horse is, generally speaking, very easy. On the first appearance of the disease the patient appears to ail but little ; he neighs when any one enters the stable, and seems eager for food, which together with saliva drops from his mouth ; his jaws are found to be stiff, and the eye to squint. As the disease continues to advance the affected muscles feel hard to the touch, and he moves as if he were a single piece ; the motion is painful, and agitation produces the greatest distress. During the whole course of the disorder the abdominal muscles are violently affected with spasm, so that the belly is strongly contracted and feels very hard, whilst the most obstinate costiveness prevails ; and as the disease extends over the voluntary muscles of the trunk and extremities, the appearances are distressing in the extreme, whilst profuse perspiration bedews the whole frame.

The circulation is, in most instances, at first not much disturbed; but as the disease increases, the pulse quickens and becomes tremulous and irregular; the respiration also gradually becomes hurried and intermittent. In this state the suffering animal may live a few days when, worn out by irritation and inanition, he expires in convulsions.

Morbid anatomy has hitherto thrown very little light on the pathology of tetanus. In some cases there have been appearances of inflammation within the cerebral cavity and spinal canal, also in the lungs, stomach, and intestines, as well as other morbid phenomena, which seem to have been merely effects or incidental accompaniments of the disease. In many cases the injured nerve of a wound has been found thickened and inflamed, whilst in others nothing of the kind could be detected.

I have found the lungs, liver, and stomach, highly inflamed in patches, and evidences of the same action having seized the intestines. Worms have been found in different portions of the alimentary canal, but they have also been found in many other morbid cases besides that which we are now considering.

Tetanus appears to be purely a nervous affection, involving principally the motor, cerebral, and spinal, and subordinately the ganglionic system. Upon taking a survey of the entire nosology of hippopathology, I know of no disease where so much discrepancy of opinion exists among veterinary practitioners; nevertheless, in order to combat this most formidable disorder, the treatment should be prompt, bold, energetic, and continued.

Accumulated successful facts warrant the free use of the lancet, strong cathartics, powerful sedatives, severe blistering of the nervous centres, warm clothing, pure air, liberal support, and *quiet seclusion*.

But, gentlemen, without enumerating in detail the various agents which have been more or less successfully, or otherwise, adopted by veterinarians, I will confine myself to a brief outline of the history of a few cases from amongst many others, which I have had specially under my care and treatment.

1st. Of a *traumatic character*, in a gelding, three years old. About the sixth day after being docked he was observed by his owner to be somewhat stiff, and on the following, when attempting to move him backwards in his stall, having lost his balance, he fell. On the eighth day I was called, and on entering the stable at once perceived that the well-marked symptoms of tetanic rigors were in full play on the poor suffering animal, the jaws being nearly closed.

The treatment pursued was first to amputate the tail afresh,

excising about three inches and a half, *two and a half of which were already in a state of gangrene.*

A strong purgative, combined with sedatives, was administered, the whole course of the spine blistered, a fluid nutritious diet allowed, and the body plentifully clothed with warm woollen rugs. The treatment was continued a little more than a fortnight; at the expiration of three weeks he was much better, *and in a month perfectly recovered.*

2nd. Was one of an *idiopathic nature.* It occurred in a powerful brown cart-mare, nine years of age; apparently it was a hopeless case, so much so that an aged practitioner pronounced her to be in a dying state, and considered she would not live fifteen minutes.

Symptoms—violent spasms, rapid and loud breathing, profuse perspiration, the head protruded, tail erect and quivering, legs wide apart, straddling, and fixed, jaws almost closed, muscles rigid and hard, and intensely pained.

In this instance the patient was bled to the amount of *eight quarts.* I gave strong doses of purgative and sedative mixtures, with diffusible stimulants, and blistered over the jaws, the nape of the neck, and on each side of the cervical vertebræ, and course of the spine to the tail. Fresh sheep-skins were applied to the back; afterwards warm clothing; a liberal and nutritious fluid dietary, in the form of drinks and injections. After three weeks of this treatment, a visible change for the better was manifest, and a gradual recovery took place up to the eighth week, when the animal was put to work, and continued strong and healthy for several years.

3rd. *A very severe case of traumatic tetanus,* in a strong and valuable cart-mare, five years old, belonging to a farmer in the neighbourhood of Sunderland, arising from a puncture in the off hind foot, caused by a nail picked up on the road. The lameness was at first slight, and *the mare was kept at work for near three weeks,* which is too often done in similar cases. Although the owner noticed some peculiarity in the movements of his animal, he attributed it to be "*grease flying about her.*" At length, being sent for, I found I had a bad case of locked-jaw to contend with; the poor creature was suffering dreadfully, and completely fixed to the place where she stood. Having ascertained the cause, *which should never be overlooked by the "veterinarian" at any time,* the farrier was at once sent for, the shoe removed, and foot well pared, which was done with extreme difficulty, as the suffering animal threatened every minute to fall on the operator. The foot was then enveloped in a large poultice, and blood freely extracted from the jugular; strong cathartics, with opiates, were administered, and repeated at regular in-

tervals; the spine, neck, throat, and jaws, were severely blistered, and fresh sheep-skins applied to the back every third day for three weeks. Diet in a suitable form was not neglected. In the fourth week a change for the better took place in my patient, when warm rugs were substituted for the sheep skins; the treatment was continued for seven or eight weeks, when, after a slow and gradual recovery occupying the space of three months, she became quite strong and vigorous, and has continued as such to the present time.

As I expect there will be other interesting subjects, remarks, and observations, brought before the meeting by our respected secretary, and probably by other members, I will only describe another case of traumatic tetanus, which took place in a valuable half-bred mare, six years old, by "*Lancewood.*" It arose from a kick on the inside of the hock-joint of the off hind leg, when at grass, during the past summer; the injury was comparatively trifling, lameness being scarcely perceptible. She was taken up, placed in a loose box, and supplied with cut grass, and the wound healed slowly, but gradually. About the fourth week, in walking, she was observed to have a peculiar jerk with the affected limb when turning round. At length the eyes showed the unmistakable tetanic expression, with a shooting out of the nose, and partial closing of the jaws; in short, all the tetanic convulsions were well marked over the frame of the suffering patient. The treatment in this was similar to that pursued in the previous cases (with this addition—a severe blister being applied over the affected portions of the hock-joint). The treatment was continued for one month, and a gradual recovery took place.

The discussion which followed was of an unusually interesting character, and fully sustained by all members present, the substance of which went to prove the indispensable use of purgatives gradually, but persistently, applied. Upon the subject of bleeding in tetanus, there appeared a difference of opinion as to its real efficacy, several members being inclined to believe that it should not be resorted to, unless in the event of disease in important organs having commenced, or suspected to supervene. Others relied on the abstraction of blood, with the view of a temporary relaxation of muscular spasm, which would enable the practitioner to administer proper medicines.

It was deemed advisable not to bleed animals in low condition; but admitted that, as a rule, in robust patients, much good is obtained by the practice in a majority of instances.

Various opinions were expressed as to the unfavorable

results which invariably occurred when a tetanic patient had lain or fallen down in the stable, especially when the symptoms previously characterised a return towards health; and it was recommended that, as a preventive means, slings not intended to take his weight from the ground, should be adjusted, into which the animal might fall.

Mr. Hunting and Mr. Peele related instances in which the animals, progressing favorably, had lain down during the night, or in the absence of the attendant, by which injuries had resulted causing death.

Mr. Scott described a case where the animal dropped several times during the attack, and by his having a set of pulleys in readiness, the patient, a mare, was raised, and ultimately recovered.

Mr. Hunting, Mr. Peele, Mr. Scott, and the Secretary, agreed upon the extreme rarity of the disease among pit animals, notwithstanding the innumerable cases of punctures from nails, &c., which constantly occurred. It was suggested that atmospheric influence was excited to a less degree below ground; or, in other words, animals predisposed to tetanus, having received an injury calculated, under other circumstances, to produce it, as a rule, were exempt in the pits, arising probably from the generally uniform state of the atmosphere, which is thus deprived of its effects to a great extent.

At the close of the discussion the following paper, illustrated by drawings, was read by the Honorary Secretary, Mr. Armatage.

TUMOUR WITHIN THE SUBSTANCE OF THE BRAIN.

The case which forms the subject of the present paper, occurred in the practice of Mr. Thos. Thompson, Sunderland, a brief history of it is as follows:—The animal, a black horse, nearly sixteen hands high, of compact form, and good appearance, came into the possession of the owner about five years ago, and, excepting the space of three months past, had always appeared in perfect health, never having been under treatment for the slightest ailment. He, however, was of an **EXCITABLE NATURE, AND A GREAT EATER.**

About the time above mentioned, viz., in November last, the symptoms of excitability increased from day to day, exhibiting marked degrees of intensity, and varying in accordance with the circumstances under which the animal was placed.

Being employed for carting purposes, it would appear that his work added to the diseased condition of the brain, the symptoms being more or less developed in proportion to the

demands made on his powers. The symptoms of excitability, noticed in the first instance, will admit of being described, as forming the premonitory indications of disease going on within an important organ, and as essentially differing from those which characterise animals of innate nervous temperament.

The animal, as previously stated, was of the cart breed; thick-set, short-coupled, neatly-moulded, and of strong muscular proportion. His head was large; eyes rather small; labial apparatus large and pendent; hirsute appendages plentifully distributed, especially the mane and forelock; in fact, from an animal of his description, one would imagine the work expected from him must, under circumstances apart from disease, be exacted only by dint of merciless applications of the whip, at least, if required to be done expeditiously. On the contrary, however, the animal betrays an unusual amount of sensibility to surrounding noises, &c., far beyond his apparent nature; passing objects are also observed with more than ordinary attention. There is a tendency to carry the head a little towards one side, the ear of the same side being either drawn in an attitude of listening, or otherwise hanging for a time useless.

This attitude gives way to the habit of shaking the head a little at first; but as the disease advances more in proportion, until the act is so violently performed that the animal goes through a paroxysm of convulsive throes, during which the equilibrium is with difficulty maintained, rendering him absolutely dangerous to those within his reach.

At other times the head is thrown upwards and backwards, the muscles of the neck, back, and loins, with those of the legs, being rendered instantly hard and tense by forcible contraction, the principal weight of the body being supported upon the hind legs, which are brought thoroughly underneath. The hair protrudes over the eye, the tail is outstretched, and altogether the sufferer presents a pitiable appearance.

The drawing of a load up hill, when, perhaps, a tight collar interrupts the passage of blood from the brain; or sudden fright or blows—particularly over the affected side—bring about the aforementioned symptoms in all their hideous severity, during which the animal is brought to a stand. Here there is not usually a resemblance in the conduct of the subject to that which occurs under an attack of megrims, for no sooner is the paroxysm over than he looks round, as it were, for the cause, and moves on as if nothing had occurred.

These symptoms are also equally produced by the infliction of brutal treatment in the stable; a peculiar sensibility to harshness being always manifest.

By degrees the marked suspicion with which all passing objects are at first regarded grows less as the affection proceeds; the ears are brought more into requisition, and especially is this to be observed in those instances where pressure causes blindness of one eye only.

In the case before us blindness took place gradually, and became complete in both organs shortly before professional assistance was sought. For some time prior to the loss of vision the peculiarity of the disease was manifested also by a practice, which increased with it, of the animal violently rubbing the RIGHT nostril against the nearest object, and when doing so, being entirely oblivious to all that was passing.

It was at the commencement of the present year that the case was first introduced to the notice of Mr. Thompson, when the symptoms were developed in their intensity. *The appetite was ravenous*, other functions performed with regularity; the condition, as indicated by appearances, all that could be desired.

As will be already supposed, the progress of such a case would be the reverse of favorable, yet the owner pressed for something to be done, and accordingly our friend placed a smart blister to the poll, and administered cathartic medicine. Shortly afterwards consent was given for the destruction of the creature, which was all but useless, from the violence of the symptoms. The head being reserved for examination, on Thursday, the 18th of February, Mr. Thompson kindly forwarded me an invitation to be present; and from the state of the diseased parts as they were exhibited to view I have been enabled to put together these few remarks, under the belief that at least the subject is of an interesting nature, and calculated to form an integral part of our Society's transactions.

EXAMINATION OF THE BRAIN.

The frontal and parietal bones were carefully removed, when sufficient evidences existed of a turgid state of the circulatory system within and around the organ; but as it was finally removed from its well-adapted case, the larger and important network of vessels at the base were fully filled, and when necessarily divided by the scalpel, clots of blood rolled out.

An incision was carried through the *right* hemisphere, commencing over the corpus callosum, in the anterior longitudinal fissure, dividing the lobe over the lateral ventricle,

the objects in which—except in certain particulars hereafter to be noticed—were observed to be in a normal condition.

The lateral ventricle of the *left* hemisphere was exposed in a similar manner, when a mass of disease presented itself. The cavity was filled with a thick matter not unlike curds in consistence, semi-transparent, and of a blue-gray colour in places, varying to an opaque, with shades of dark pigment increasing to blackness, especially when viewed in the mass.

The medullary matter forming the roof of the natural cavity was implicated, being softened and broken down, and, in the centre, absolutely wanting.

The cortical portion was inky in appearance, and stained the fingers. The space, being the part in area affected, nearly corresponded to the size of the ventricle above, and was at the central point not a quarter of an inch in thickness.

The only recognisable object contained in the left ventricle was the choroid plexus, which was considerably enlarged, congested, and lying, as it were, in a fissure or depression, between two eminences of the opaque matter referred to. At its origin within the ventricle, at the posterior or superior cornu, it was covered, and, where it passes through the foramen communis inferior in the healthy subject in the present instance, possessed an unusually strong attachment to some object occupying a position in the mesian line. Here it was surrounded by a cloudy mass of the same kind of matter, which was connected to, or continuous with that which occupied the space of the left ventricle, extending from the pillars of the fornix posteriorly or superiorly, anteriorly, or inferiorly to the genu of the corpus callosum, and laterally within the *right hemisphere and ventricle* to the inferior cornu and base of the corpus striatum; *all of which, with the fifth ventricle and septum lucidum, were obliterated.*

The greater portion of matter being removed from the surface of attachment of the choroid plexus, an irregular ovoid mass presented itself, about the size of a pigeon's egg, imbedded in the elastic mass with which it was surrounded, as if in the process of accumulation. It was raised from its position by the forceps, drawing with it a considerable amount of matter and, being deprived of this it had all the physical characters of a cartilaginous tumour. In length it was about an inch, and in breadth about five eighths; the long axis being across the mesian line, and *greater portion within the left ventricle.*

I have endeavoured to illustrate this interesting subject by means of drawings made from a horizontal and vertical section of the lobes.

Here I would inquire, As blindness gradually succeeded

in accordance with the progress of the disease, would it be produced by direct pressure from the diseased portion within, over the decussating optic nerves, or is it more probable that the thalamus opticus, and other parts within the left ventricle, being implicated in actual disease, such would develop the symptoms?

MELANOSIS, AND SOFTENING OF THE MEDULLA OBLONGATA.

This also was a case which was brought before the notice of Mr. Thompson. The history is as follows:—The animal, a gray cart-mare, about sixteen years old, the property of Joseph Scott, Esq., Southwick, near Sunderland, had been in his possession since she was four years old. During this time, and up to a period of twelve months ago, she had always appeared in perfect health. About the time mentioned *the spine, particularly the dorsal portion, assumed a greater curvature than natural, as indicated by the hollow back, falling of the withers, &c.*

Symptoms of vertigo gradually presented themselves, and upon several occasions, after staggering a few paces, she fell, with extreme helplessness, to the ground; but almost as soon rose, and resumed her walk as before. By degrees the respiration was affected, and ultimately became difficult, and during the attack stertorous.

Being an old favorite, the animal was allowed to go on light work, the nature of the affection for some time, apparently, not needing medical assistance; but the fits of vertigo becoming more frequent, and their influences more powerful, the animal was sent for examination, and, if a possibility of good arising, for treatment. The age of the patient, coupled with the following symptoms, induced Mr. Thompson to advise her being destroyed, which was done on the 16th of March last.

The head was held low, and carried in that position when at work; in the stable she would support it by resting the under jaw upon the manger. The pulse was exceedingly slow, weak, and compressible, numbering not more than 18 beats per minute; appetite good, and other functions apparently normal, except the respiration, which, as previously stated, was heavy, and stertorous. There is a peculiar disregard to all that is passing around, the ears are motionless, and harsh treatment produces no extraordinary excitement; *all activity and energy is absent; the sensitiveness of the muscles over the dorsal thoracis and pectoral regions completely gone; and throughout the body there is a soft and flabby sensation under the fingers.*

There is a peculiar stepping short with the extremities, particularly the fore—the limbs being put down with a heavy thump as if a want of nervous power existed to direct the placing of the feet. If the animal is brought suddenly to a stand tremors commence, slight at first, but by degrees increasing in intensity; she staggers and falls as if shot, the whole of the limbs being doubled underneath the body; these symptoms had increased during the few previous weeks to such an extent that the poor creature would fall two or three times a day.

A knotted and irregular fulness existed in both parotid glands, particularly in the left: the nodules, varying in size, were attached to the skin but unconnected with the glandular structure as indicated by their mobility. The salivary secretion was not known to be impeded.

Owing to circumstances of an uncontrollable character, the head, together with the first, second, and third cervical vertebra, were the only portions secured from the ruthlessness of a knacker. These I have attempted to give a brief description of.

When the parts were separated, about half an ounce of serum escaped from the spinal cord, which was observed to be altered in structure.

The brain was next carefully removed, when its entire substance and meninges were found to be congested, the capillaries being most beautifully delineated, and the larger vessels stretched, thinned, and transparent. The general substance of the cerebrum and cerebellum was found to be healthy, the ventricles contained a very minute quantity of fluid, and the choroid plexus of each was enlarged, congested, and possessed an accumulation of calcareous matter as large as a medium-sized hazel nut; the smaller granules which made up the whole being about the size of a lentil.

The medulla oblongata as it leaves the cerebellum exhibited signs of disorganisation; its internal structure was softened, pulpy, and not unlike the medullary and cortical portions of the brain when mixed up with a spatula. In fact, the integrity of the cord was so far destroyed, down to the point where it was cut off at the third vertebra, that its own weight was sufficient to destroy its form, and the mass oozed from the membranes like curds.

When the parotid glands were exposed, melanotic tumours presented themselves situated between the sulci of the glandular structure which was displaced; those in the left were as large as a walnut.

The tonsils were enlarged—the investing membrane thickened, rough, and studded with numerous bodies not

unlike grains of sago both in size and character; they were not injected, but, with adjacent parts, including the pituitary membrane, the eyes and their appendages, &c., were much paler than natural.

REMARKS ON THE FOREGOING CASES.

Amongst some half dozen or more cases which have occurred in my practice where tumours have been found within the brain, or its substance has been interfered with by the process of diseased action, in connection with, or independent of abnormal growths, I have met with none where the organ was so extensively disorganised as in the instance of the black horse just related. Comparing these lesions, both with regard to the outward and physical indications as well as their inward morbid condition, with others in which the various parts have undergone extensive derangement, one cannot but feel greatly surprised to witness the few symptoms which mark the real amount of disease actually going on within in the latter; and the vast interference in such as the former, with the natural habits of the animal and functional arrangements where symptoms are exceedingly violent, and actual disease apparently trifling. We may be excused somewhat in the want of accuracy which characterise our diagnosis of these diseases, probably by the nature, habits, and requirements of our patients, and the paucity of general information on the subject; but I am inclined to believe that by an attentive observation of the symptoms manifested during life, especially if the patient has been known for a lengthened period to the practitioner, with a careful examination of the affected parts after death, a great deal will not only be revealed thereby, but more will become of paramount importance. Certain morbid appearances will be seen to depend upon some unusual indications and physical signs, which as they reveal themselves under peculiar phases and conditions, may at least render an estimate more decisive if not absolutely perfect. In these particulars we must undoubtedly experience the value of association. At our periodical meetings the bringing forward of such accounts, which I have on this occasion attempted with, I must say, neither the erudition or the attainments which such subjects are known to require, but with sincerity, must be valuable. Coupled with this, we have valuable echoes which resound from the pages of our representative journals, cheering us onwards as the career seems blighted and cloudy, dispelling as it were the mists of doubt and uncertainty, and cordially assisting us by the publication

of our transactions and papers on various subjects. It is thus that profit must become mutual in proportion to our estimate of the worth, and as our ideas are made known and commented upon by others. Only by close investigation, comparison of facts, and carefully dealing with them, together with the priceless assistance which is to be obtained in fellowship, and the operations of minds determined on good, can such results as are wished for be definitely obtained.

Professor Dick is well known to portray to his class a succinct but lucid description of these affections as they have occurred on almost an indefinite field of practice extending over a lifetime, the value of which is too great to be forgotten. Mr. Barlow, too, under whom I had the honour and likewise the privilege to graduate, developed a priceless eloquence on their nature and peculiarities. It was during the summer of 1851, when almost alone in Clyde Street, I experienced an inexpressible delight in assisting him at dissection and drawings of diseased specimens, which are still fresh in my memory, together with the profitable remarks which always attended such pleasant occupations, and since have borne so effectively on subsequent proceedings.

From cases which now and then occur a great deal might be gathered,—and here I would suggest the urgent propriety of chronicling faithfully the details, *not merely in our private case-books, but in our recognised periodicals*, for the interest and benefit of brethren at a distance. But I am digressing, and to resume, would remark again how great a difference has been found to exist in the character of some of the cases not widely different in their real nature—as, for instance, those in which softening, or “*ramollissement*,” as preferred by erudite authors, exists alone, and those where the prevailing signs are dependent on the presence of atheromatous, fibrous, or other tumours within the organ, separate or in conjunction with softening.

A large black Hanoverian horse, which from his manner was unapproachable, and pronounced by several to be phrenetic, being destroyed in consequence, the brain came into my possession, and fully occupying each lateral ventricle, attached by a pedicle to the choroid plexus, was a pyriform tumour of a fibrous nature. Here the brain was perfectly healthy in appearance, but pressure by increase of size in the tumours causing the mischief had also produced considerable absorption, and consequent obliteration of the various objects usually described as forming the ventricles.

A bay cart-mare, whose peculiar exhibition of symptoms had gained for her the title of “A Shiverer,” after death showed softening of the brain and the presence of pulpy matter

in the ventricles, similar to the one described at commencement. Others might be adduced, but sufficient has already been cited to establish the fact of the existence of two kinds of disease of the brain; but symptoms indicative of such are by no means regular. Our first case is characterised by violent actions under certain conditions, with a constant and peculiarly excitable nature, blindness gradually but completely setting in. The "Shiverer," however, with a greater amount of softening, displayed no symptoms of such a nature. We should be apt to consider such an unerring indication of disease involving the optic nerve, its commissure, origin, or perhaps entirety, and in the absence of those impetuous bursts of violence, might infer softening had taken place, yet there is no paralysis, or loss of sensation in the body; which so eminently characterises the second case, and how the functions of respiration, digestion, &c., in this instance was carried on is a matter of no little perplexity, without naming the great dependence upon that wonderful object the sympathetic nerve, which Sir Charles Bell has considered to be a nervous system in itself.

There are other cases also which, being characterised by symptoms of violence at periodical times during life, have shown no indications of the presence of tumours within the organ after death; but when a termination has suddenly resulted, an attempt has been made to account for it, from the detection of sanguineous suggillations, which are regarded as capillary hæmorrhage within the softened portions, under which circumstances the blood-vessels, probably containing a material deficient in elaborating properties, themselves wanting in integrity, in common with the surrounding parts, are rendered more liable to the effects of an over-distended stomach, tight collar, &c., and other causes by which the circulation within the brain is accelerated, and the quantity of blood increased, whereby rupture takes place, producing results of various degrees of importance.

We have the authority of Dr. R. B. Todd, F.R.S., for the following statement in reference to softening of the brain: "Without waiting," says he, "to decide upon this point," *i. e.* whether the disease depends upon a depraved condition of the brain-fibre, or brain-cell, or otherwise, or a presence of atheromatous deposits within the minute vessels, "we may, then, lay it down that, whether in consequence of disease of the blood-vessels, or otherwise, the nutrition of the brain becomes impaired, and this shows itself mainly in an altered consistence of the nervous matter. Its colour does not undergo any appreciable alteration; and if you look at a portion through the microscope, you will not detect any obvious

change; the vesicles remain the same, and the fibres remain unchanged; but, as I said, the consistence is diminished; instead of being firm, the tissue of the organ has become soft and pulpy, and in some cases almost diffuent, and of the consistence of cream.

“The diseased blood-vessels lie in the midst of this pulpy mass for some time without undergoing any further change, but, sooner or later, under some mental emotion, or during some increased heart’s action, depending either upon mental emotion, upon derangement of the digestive organs, some bodily exertion, or increased mental effort of any kind, the blood is sent with undue force or in undue quantity into the vessels, and in consequence the vascular canals in the pulpy portion of the cerebral tissue being deprived of their usual support give way, and blood is effused into the softened part of the brain, which it breaks up, and the more readily in consequence of already diminished consistence.” (Braithwaite’s ‘Retrospect of Medicine,’ vol. xxxi, 1855, p. 74.)

I cannot conclude these remarks without referring to the report of a valuable paper on ‘Tumours in the Brain,’ read before the Imperial and Central Society of Veterinary Medicine in Paris, by M. Leblanc, and published in the *Veterinarian*, p. 162, for March, 1855, a perusal of which will not be without interest.

A short discussion followed the reading of the paper, and a vote of thanks proposed to the President and authors, respectively, was cordially agreed to.

Copies of the papers, with an abridgement of the transactions of the meeting, were ordered to be forwarded for publication in the *Veterinarian* and *Edinburgh Veterinary Review*.

A sub-committee, consisting of Messrs. Bunting, Scott, Fairbairn, Armatage, Peele, and Thompson, was directed to meet on Saturday, the 14th of May, at four o’clock, to arrange business, and appoint a day for the quarterly meeting in July.

Practitioners desirous of joining the association should communicate with the Hon. Sec.

(Signed)

GEORGE ARMATAGE.

Veterinary Jurisprudence.

KNARESBRO' COUNTY COURT.

Before Mr. Sergeant DOWLING.

THURSDAY, MAY 12TH, 1864.

BAIRSTOW *v.* WHINCUP.

CHRONIC DISEASE OF PLEURA, LIVER, AND KIDNEYS.

MR. PETER BAIRSTOW, horse dealer, of Buttershaw, near Bradford, sued Mr. William Whincup, of Greenhammerton, for £50, being damages incurred by breach of a warranty of a horse.

Mr. Bruce, barrister (instructed by Messrs. Terry and Watson, solicitors, Bradford), appeared for the plaintiff; and Mr. Paley, solicitor, York, for the defendant.

The case was tried by a jury, consisting of Messrs. I. T. Shutt, T. Gascoigne, Thomas Terry, W. Walker, and William Whittaker.

Mr. Bruce, in opening the case, said that the plaintiff and defendant were together at Northallerton fair on the 10th of February last, and the plaintiff there bought of defendant a gray draught horse for £43, and received with the animal a warranty of soundness. The horse was taken to Bradford the same day in a horse-box, the plaintiff travelling with it. On the 13th of February, plaintiff sold the horse to Mr. Crossley, of Elland, for £48. On the 15th of February the animal did about half a day's work; on the 16th it was ill; and in spite of the efforts of a veterinary surgeon it died on the 29th February. Mr. Crossley informed the plaintiff of the facts, and plaintiff engaged three experienced veterinary surgeons, viz., Mr. E. C. Dray, of Leeds; Mr. Joseph Carter, Bradford, and Mr. W. Williams, Bradford, to attend a *post-mortem* examination, which Mr. Crossley had directed his own veterinary surgeon (Mr. McTaggart, Halifax) to make of the animal, for the purpose of ascertaining the cause of death. That examination was made on the 2nd of March. The whole of the veterinary surgeons agreed that death had arisen from pleurisy, associated with disease of the liver, amounting to what is sometimes called a rotten liver, and fatty degeneration of the kidneys, which had gone on to such an extent, that they could not properly perform their functions. Having given Mr. Crossley a warranty, and having been assured by the whole of the veterinary surgeons that these diseases must have existed for more than two months, he felt bound in honour to return to Mr. Crossley the purchase-money of the horse, and accordingly did so. He then applied to the defendant for the money which he had paid for the horse; but the defendant never took the slightest notice of his application. Hence the present action was brought to recover the purchase-money and costs, to which he (Mr. Bairstow) had been put under the warranty.

Mr. Paley, in reply to his Honour, said he was prepared to admit

the warranty, and the death of the horse. The only question to try was whether the horse was unsound on the day Mr. Bairstow bought it, namely, on the 10th of February.

Mr. Bruce then called *Mr. McTaggart*, veterinary surgeon, who proved attending the horse on the 16th of February, when the animal was suffering from pleuritis of so severe a form, that he was doubtful of the issue, and it died on the 29th of February. Upon a *post-mortem* examination, made on the 2nd of March, he found a firm adhesion of the lungs, which must have existed for many months; disorganization and fatty degeneration of the kidneys, so that they could not properly perform their function, which must have been going on for not less than four months. The liver was also completely broken up from disease.

Mr. Edward Coleman Dray, veterinary surgeon, who assisted in the *post-mortem* examination, described the state of the animal; and said that disease of the liver, lungs, and the kidneys must have existed three or four months before death. In cross-examination, he said that a horse might be suffering to a certain extent, from the complication of diseases which he had described, and yet exhibit no symptoms that would attract the attention of non-professional persons. It might eat its food regularly, do its work pretty well, even up to a few hours of its death, without showing outward signs of disease to an inexperienced eye. In the present instance he thought the horse would display no symptoms of disease until it was put to work, when the sudden exertion, coupled with the diseased state of the organs, would bring about its death.

Mr. Carter and *Mr. Williams* gave corroborative testimony; and all agreed that the disease must have existed upwards of two months before the animal's death.

Mr. Bairstow and *Mr. Crossley* were called to prove the purchase and death of the horse; and then

Mr. Paley addressed the jury for the defence, contending that there was no disease about the horse when it was sold to plaintiff; that it caught cold on the railway, was attacked with pleurisy, and died of that disease. He ridiculed the evidence of the veterinary surgeons, and said he would prove by a number of witnesses that, up to the moment the horse left Mr. Whincup's hands, it was in perfect health, and had always been so. He contended that the horse was not suffering from disease on the 10th of February; and, that being so, the defendant was entitled to their verdict.

Mr. Whincup, the defendant; *Mr. Henry Outhwaite*, who sold the horse to the defendant; *Mr. George Turner*; *Mr. John Dunston*; *Mr. Willis Goodbarn*; and *Mr. S. Ramsden*, veterinary surgeon, Ouseburn, were called, and proved that the horse had always eaten well, worked well, and shown no symptoms whatever of disease.

Mr. Bruce replied; and

His Honour summed up, remarking that there was a single issue to try, and it was very satisfactory to know that there was no imputation of fraud or dishonorable motives imputed on either side. If the jury were of opinion that the horse was on the 10th of February suffering under any of the diseases described by the veterinary

surgeons, then the plaintiff was entitled to their verdict, but if they were of opinion that the diseases had all arisen after that date, they would then give the defendant their verdict. To constitute unsoundness, it was not necessary that the animal should be unfit for work; and if there were the seeds of disease in the animal when it was sold, then the plaintiff was entitled to recover under the warranty.

The jury retired for about twenty minutes; and on returning into court gave a verdict for the defendant, evidently to the surprise of the learned judge.

Mr. Bruce moved for a new trial,

The learned *Judge* certainly thought the plaintiff was entitled to it.

Mr. Paley objected to a new trial, unless the usual ten days' notice were given.

His Honour said, after that objection, *Mr. Bruce* had better give the usual notice ten days before next court day.

CRUELTY TO A HORSE. EXTRAORDINARY PROFESSIONAL PROCEEDINGS.

[WE extract the following from the Liverpool papers, and cannot refrain from expressing our regret that, on the simple question as to whether an act of cruelty had or had not been perpetrated, there should have been any difference of opinion between veterinary surgeons occupying so distinguished a position as those originally concerned in this case. The veterinary surgeon, before all others, ought to be distinguished for humanity towards the brute creation. Few things tend more to place him in his right position and to raise his calling in the estimation of the public. We hope never again to see those antagonistic to each other who should act in common to protect the lower animals from the cruelty too often exercised upon them by men of degraded minds. Here at least should be unity and concord. Although we have thus given free expression to our thoughts, we nevertheless are of opinion that the letter of the Hon. Secretary should have been penned in less censorious terms. A good cause is too often damaged by hasty expressions arising from excited feelings.]

CHARGE OF CRUELTY TO A HORSE.

Edward Connell was charged with having cruelly ill-treated a horse, by working it when it was in an unfit state.

Police-officer No. 184 stated that his attention had been drawn to a horse and car which were being driven by the defendant. On examining the horse he found a sore as large as a half-crown on its back, and several smaller wounds on other parts of the body.

Mr. R. Lathbury, the Honorary Secretary to the Society for the Prevention of Cruelty to Animals, said the horse was in a shocking state, there being six or seven raw wounds on different parts of the body.

Mr. Ellis, veterinary surgeon, said he had examined the horse, and on the near fore leg he found an enlargement as large as the

leg itself, extending from the knee to the fetlock, and in the centre of it was a sore produced by the repeated contact of the fore shoe. The horse was very poor and lame, and quite unfit for work. In answer to Mr. Charles Pemberton, who appeared for the defendant, Mr. Ellis said every care had been taken to keep the harness from chafing the sores, but the horse required rest.

Mr. Simpson gave corroborative evidence as to the unfitness of the horse for work.

Mr. Pemberton said he should call a gentleman of equal repute to that of Mr. Ellis, who would positively state that the horse was in a working condition, and it then would be for his worship to judge between the two statements.

Mr. Briscoe, veterinary surgeon, said he examined the horse on Thursday evening, and there was then no raw wound to be seen on the surface. The lameness of the animal arose from its shoeing. If it was properly shod the horse would be perfectly right. He did not consider the enlargement of the fetlock as being worthy of notice.

Mr. Ellis repeated that the animal suffered from the wound on the near fetlock, and from an abscess which was forming, and had since been formed, in the leg.

Mr. Raffles remarked that so great a difference between the opinions of two practical gentlemen such as Mr. Ellis and Mr. Briscoe rendered the case very difficult for him to decide, and he must give the defendant the benefit of the doubt.

Mr. Briscoe expressed his opinion that the society by which the proceedings against the defendant had been instituted were "drawing the strings rather too tight."

Mr. Raffles remarked that he thought the society did a great deal of good.

Mr. Pemberton : I don't know whether it is true, sir, but the defendant says you belong to the society.

Mr. Raffles : It is true that I am on the committee, but I never attend the meetings. I think the society is doing a great deal of good.

Mr. Briscoe : In some cases it does ; but it wants a little discrimination.

Mr. Lathbury reminded Mr. Briscoe of some observations which were made by Mr. Melly the last time Mr. Briscoe gave evidence in a case of a similar nature.

Mr. Briscoe was about to reply, when Mr. Raffles interposed and closed the case, remarking again that the society was productive of much good in the town.

THE HORRIBLE HORSE CASE.

To the Editors of the 'Liverpool Mercury.'

GENTLEMEN,--In your police news of this day, Mr. Briscoe, veterinary surgeon, is reported to have sworn that on his examination, of the gray mare on Thursday last that there were no raw wounds. It

is, indeed, too true. He also swore that the mare's lameness was solely attributable to bad shoeing. This part of the evidence was rather amusing; the forge at Islington, I presume, would be the right place. However, the public will be the best to judge of the value of Mr. Briscoe's opinion from a perusal of the following letters, and more can be added if necessary. It is one of the worst cases of cruelty to a poor horse on record, and yet this very humane veterinary surgeon thinks "the society is drawing the strings too tight." Perhaps so. However, we can afford to treat Mr. Briscoe's remarks with the contempt they so well deserve, and I fervently hope that our excellent association will continue to flourish long after he has passed away. We will now leave him, and—*audi alteram partem*.—Yours, &c.,

ROBERT LATHBURY,

Hon. Sec. to the Society for the Prevention of Cruelty
to Animals.

40, Castle-street, May 23, 1864.

At the request of Robert Lathbury, Esq., on behalf of the Society for the Prevention of Cruelty to Animals, I have this day examined an aged gray mare (at Garner's stables), the property of Mr. Edward Curran.

I find an extensive enlargement on the inside of her near fore leg, reaching from the knee down to the fetlock joint, the result of her continually hitting it with the off fore foot when at work; in the centre and on the part where the blows are more particularly received a large abscess is forming, causing very great pain and lameness when she is forced to move the limb.

I find a suppurating wound on the front of each fore fetlock joint; a wound on the top of her chine, and several smaller wounds about her chine and neck, from the pressure of her harness. The off hind fetlock is extensively diseased and thickened. She is very thin and weak from pain and work, and is, in my opinion, now totally unfit for work of any kind whatever.

JOHN ELLIS, M.R.C.V.S.

Upper Pitt Street, Liverpool, May 19, 1864.

20 and 22, HATTON GARDEN, LIVERPOOL,
MAY 21, 1864.

I certify that I have this day examined an aged gray mare, at the request of the Society for Prevention of Cruelty to Animals, per R. Lathbury, Esq., and find a large tumour on the inside of the near fore leg, the right hoof striking the enlargement each time the animal moves, and causing severe pain. There are also deep wounds on both fore fetlock joints. The fetlock joints of the hind legs are very much diseased. The animal is totally unfit for work, and of the many cases I have examined I believe this to be the worst.

GILBERT HEYES, M.R.C.V.S.

VETERINARY ESTABLISHMENT, 70, SEEL STREET,
LIVERPOOL, MAY 21, 1864.

SIR,—At your request, on behalf of the Society for the Prevention of Cruelty to Animals, I have this day examined a gray mare (standing at Mr. Garner's stables, Temple Court), the property of Mr. Edward Curran, car proprietor, and found her to have a large abscess between the knee and fetlock joint, on the inside of the near fore leg, the same having been caused by being frequently hit by the opposite foot when at work, and on being made to move she suffers great pain. I also found a suppurating wound in front of each fore fetlock and on the withers; there were also three or four wounds which have been produced by the harness. She is in a very weak condition from pain and work, and I am decidedly of opinion she is quite unfit for work of any kind whatever.— I am, &c.,

JOHN SIMPSON, Sen., M.R.C.V.S.

R. Lathbury, Esq.

LIVERPOOL, MAY 21, 1864.

This is to certify that on this date, at the request of Robert Lathbury, Esq., I have examined a light gray mare, aged and emaciated, with a large chronic swelling and abscesses on the inside of the near fore leg, having an open sore, and discharging serum mixed with pus. This mare is, in my opinion, quite unfit for any work, being very lame, and would not be profitable for the owner to keep.

JAMES BRYDON, M.R.C.V.S.

LIVERPOOL, MAY 23, 1864.

At the request of Robert Lathbury, Esq., on behalf of the Society for the Prevention of Cruelty to Animals, we, the undersigned, have this day, at Mr. Garner's stables, Temple Court, examined an aged gray mare, the property of Mr. Edward Curran, car proprietor. We find that she has an abscess on the inside of the near fore leg, with extensive swelling of the leg up to the shoulder, attended with severe pain and lameness, and in our opinion she is decidedly unfit for any kind of work.

GEORGE BRETHERTON, V.S.

ROBERT CHAMBERS, V.S.

JOHN ELLIS, Jun., V.S.L.

THOS. G. PROCTER, V.S.

7 and 9, WILLIAMSON STREET, and 6, HOUGHTON STREET,
LIVERPOOL, MAY 23, 1864.

This is to certify that a gray mare belonging to Edward Curran was brought to my stables on the 19th of May, with a raw wound on the chine and five or six small raw wounds besides, caused by the saddle pressing on it, and another very bad one on the near fore leg. The mare was so weak and poor she could scarcely draw the empty car.

RICHARD GARNER, Temple Court Stables.

REIGATE COUNTY COURT.—THURSDAY, MAY 19TH, 1864.

Before W. FURNER, Esq.

DIFFICULT PARTURITION.—ACTION FOR THE VALUE OF A MARE.
FREDERICK ISAAC *v.* MATTHEW BLAKER FORBES.

THIS was an action brought to recover the sum of £16, the value of a mare which was killed as an act of mercy, in consequence of the alleged improper treatment by the defendant, who is a veterinary surgeon at Reigate.

Mr. Burt appeared for the plaintiff, and Mr. Hobbs for the defendant.

The plaintiff was the owner of the mare in question, which had been in foal, and on the night of Sunday, the 7th May, he found that the operation of foaling had commenced. The defendant was sent for, it being found that the foal was dead. The defendant came, and it was maintained by the plaintiff that his treatment had been improper, as the mare had been a great sufferer and was afterwards killed to put her out of her misery. The plaintiff added that the defendant, before leaving, had said that the mare would die, and that he had done all he could for her, and could not do any more.

Mr. Robert Turner stated that he had had great experience of horses, and if he had been present at the first he believed he could have delivered the mare in question. He disagreed with the mode that had been adopted by the defendant for the delivering of the mare. Her value he estimated at about £18, as she was not more than six years old.

The plaintiff gave similar evidence as to the value of the mare, and added that he would not have sold the mare for any money.

Mr. Hobbs said the defence to this case was not one for the mere £16 claimed, which was of no object to the defendant, but for the purpose of proving that no fault could be attached to him, the defendant, who was a member of the Royal Veterinary College of Surgeons, and had practised in this town for many years with unblemished character.

The defendant was then called, and stated that since 1857 he had practised as a veterinary surgeon at Reigate, and possessed a diploma from the Royal College of Veterinary Surgeons. On the night in question, the plaintiff came to him to his house and particularly wished him to go and see the mare. It was a rainy night, and he (defendant) accompanied the plaintiff to the field on the Lisbourne estate, where he found the mare lying on the ground, and the foal partly born. Immediately he saw her he told the plaintiff that it was a very bad case indeed, and that he had very little hopes of saving the mare. The plaintiff asked him to do his best, and he replied that he would. He accordingly did his best, in the manner in which he described, but he could see from the first that it was a very bad case, and said so. At his suggestion the mare was removed from the open field to a small lean-to shed so that she might be out

of the rain. Finding that no progress was made he suggested the desirability of killing the mare; or, if the plaintiff thought there was a chance, he might let her remain for a few hours to see what nature might do. On the following morning he had understood that the mare had been destroyed, but he had not seen her after the Sunday night. He had never attended mares in foaling before that, but he had attended many cows during the course of his practice.

Mr. Thomas Gregory, M.R.C.V.S., of Tonbridge, having heard the evidence in the case, said he approved of Mr. Forbes' treatment, and did not see that he could under the circumstances have adopted any other course.

Mr. Henry Charman Legge, M.R.C.V.S., of Dorking, stated that from the evidence he had heard he considered all had been done that possibly could be done.

His Honour, after recapitulating the leading facts, said it was a painful case, but he could not get rid of the fact that there was a person called by the plaintiff who had seen the mare, and gave an opinion that he could have delivered her. He must under all the circumstances give judgment for the plaintiff for the amount claimed.

[To enable us to form a correct estimate of the justice of this verdict it is necessary that we should be in possession of all the facts of the case, and especially of the nature of the presentation of the fœtus. There is nothing in the evidence, as reported, to show a want of skill; although Mr. Forbes honestly confesses that he had never attended cases of difficult parturition in mares prior to being called to this one. The principles to be observed in effecting delivery are the same in the mare as in the cow; and therefore as he had had practical experience in the one animal, it is only fair to infer that he would adopt a right course in the other. That he did so is borne out by the scientific evidence called for the defence. The only opinion given to the contrary is that of a rival practitioner in the same town. Even if the opinion was a correct one, we would rather it had come from another source.]

ARMY APPOINTMENTS.

WAR OFFICE, *June 3, 1864.*

To be Veterinary Surgeon.—Acting Veterinary Surgeon Francis Walker, *vice* William Barry Lord, placed upon half-pay, Oct. 3, 1862.

June 14th, 1864.

Peter Moir, Gent., to be Acting Veterinary Surgeon, *vice* T. J. Richardson, promoted to 1st Dragoons.

OBITUARY.

DIED recently at Newport, Isle of Wight, Richard Strickland, M.R.C.V.S., aged 76. His diploma bears date June 29th, 1816.

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Communications and Cases.

CYSTITIS, FOLLOWED BY RUPTURE OF THE
BLADDER, IN A MARE.

By J. D. OVERED, M.R.C.V.S.

BLOFIELD, NORFOLK; *June 9, 1864.*

MY DEAR SIR,—I have this day forwarded, per Great Eastern Railway, the ruptured bladder of a mare. The particulars of the case I subjoin, and shall be extremely glad to obtain your opinion upon the same, through the medium of the *Veterinarian*, should you deem the case sufficiently interesting for insertion in the pages of that valuable Journal.

I am, dear Sir, very faithfully yours,

JOHN D. OVERED.

To Professor VARNELL.

The subject of the present communication was a chestnut cart-mare, aged twelve years, which had given birth to a living foal about four weeks previous to my attention being directed to her. Assistance had been rendered by some men at work upon the farm, after which she was observed to void her urine frequently, and in small quantities, the effort being accompanied with slight griping pains. Nine days after parturition she was covered by a cart-stallion, and the symptoms became somewhat more aggravated, the desire to urinate being almost continuous; but as the mare's health was not much impaired, her owner did not think it necessary to seek the aid of a veterinary surgeon. In this state the mare continued, with little variation, until Monday, the 6th instant,

when she was turned into a pasture near the farmstead, and, whilst there, she suddenly left off feeding, trembled violently, and lay down, rolling over several times; she then rose up on her feet, and, after much straining, made an ineffectual attempt to urinate, a few drops of urine only being voided; the fæces, however, were passed freely, in fair quantities and soft; the surface of the body was covered with perspiration, and she was evidently in great pain. Under these circumstances, the owner rode over to my house, and requested me to prescribe for the mare, but he declined my proffered visit, stating that he would administer the medicine and inform me of the result the next day. About 4 a.m. the next morning, a messenger arrived in great haste, requesting me to return with him immediately, as the mare was dying. When I arrived at the farm, about four miles distant, I found my patient down, and totally unable to rise. The following were the symptoms present:—Pulse 120, and feeble; respiration much accelerated; surface of body and extremities cold; conjunctiva much injected; the Schneiderian membrane of a leaden hue; great pain (although none was evinced on pressure being applied to the lumbar region or to the abdomen); straining at intervals; the anus and vulva intensely swollen, the interior of the latter much inflamed; the eye presented a peculiar expression, indicative of intense suffering and approaching death. I at once expressed to the owner my conviction that the mare would not survive many hours, and that my services would avail nothing; but with a view to satisfy myself, if possible, of the precise nature of the case, I made an examination per rectum, and discovered the bladder to be perfectly empty and firmly contracted within the pelvis. I then withdrew my hand, and introduced the index finger between the vulva and onwards into the neck of the bladder, which caused a spasmodic ejection of only a few drops of urine. I then passed the catheter, with the like result. This completed my examination, from which, with the history of the case, I was inclined to the opinion that not only was cystitis present, but also that a lesion of the bladder had taken place. Of this latter, however, I did not presume to speak very positively, but only intimated to the owner that a rupture might probably exist, and the sequel proved that I was not mistaken.

I now anxiously awaited the death of the mare,—which took place about 8 a.m.,—in order to make a *post-mortem* examination. Upon dividing the abdominal parietes a large quantity of fluid (probably from ten to twelve gallons) escaped, which proved to be urine, with possibly a small quantity of effused

serum, as the peritoneum evinced slight traces of inflammatory action. The omentum major was very dark in colour, and covered with a thin deposit of sabulous matter, some of which was also found adhering to the cæcum, colon, and the bladder. The latter organ was then examined, and found as previously stated. It was very dark coloured externally, from inflammatory action, and at its fundus an opening existed sufficiently large to admit one's finger, through which the urine had escaped into the abdomen. This, I presume, was the result of ulceration, as the coats of the bladder at this part were extremely thin, whilst the other portion was much thickened, and scarcely to be recognised. The ureters appeared to participate in the inflammatory action, but the kidneys were perfectly normal.

I continued my researches throughout the generative and digestive organs, and the contents of the thorax also were examined, but without discovering in any of these parts further evidence of diseased action.

The above case appears to me suggestive of several important and interesting questions to the pathologist, the solution of which I prefer to leave in the hands of those who are better able than myself to enter upon their consideration.

REMARKS ON THE ABOVE CASE BY PROFESSOR VARNELL.

This case is valuable, more especially to the junior practitioner, as but few of the kind are to be found in our works on veterinary medicine. It is also important on account of the well-defined symptoms that were observed throughout the whole progress of the disease, all of which plainly pointed to the organ affected, and, in the latter stages, even suggested the nature of the lesions that induced them.

The parts sent for my inspection consisted of the bladder and a portion of the vagina, the former only showing any marks of disease to an extent worthy of notice. This organ was contracted to the size of a man's fist; it retained its ovoid form, but was slightly flattened on its upper and under surfaces. Its coats, except at its anterior portion, were much thickened, and dark in colour; at the fundus they were unusually thin, and quite in the centre there existed an opening large enough, in the contracted state of the organ, to admit the finger, through which, as observed by Mr. Overed, the urine had escaped into the cavity of the peritoneum.

In a pathological point of view, the cause of this opening seems to me to be one of the salient points in the case, it

being most worthy of our consideration, and in my opinion more difficult to understand than at first sight might be imagined. If the immediate or exciting cause of this lesion be apparent, nevertheless the remote or predisposing cause seems difficult to understand. I think, however, we may safely state that, if any organ is structurally deficient in any of its parts, either congenitally or acquired, it is thereby predisposed to yield to undue pressure. Having this fact in view when I examined the coats of this organ, and comparing them with what I considered would be their natural thickness, and also their normal condition, I was forced to the conclusion that the anterior fundus, for some little distance around the opening alluded to, was unusually thin, not, I thought, from disease, but from a congenital deficiency of structure. In neither of the coats, not even the mucous membrane, did I observe the slightest trace of ulceration; I therefore infer that they gave way from undue pressure, in consequence of their being structurally weak. The opening had all the appearance of a rent, and although small while the bladder was in the extremely contracted state, it nevertheless would be much larger when the organ was partially or wholly distended. Then, as it regards the form of this opening. A rupture at this part of the bladder is said to be always circular; which I think is explained by the course of the fibres of the middle coat at this part of the organ. With reference to the nature and extent of the disease, I must think that it was not so extensive as might be supposed, or its ravages so great as the symptoms would lead those who witnessed them to conjecture they would be. That it was primarily a case of *cystitis* there cannot be a doubt, involving more or less the entire structure of the bladder, but the inflammatory action had not been so intense as to produce that extreme lacerated state of the tissues which sometimes is met with; nevertheless I believe it was sufficient to render the coats of the bladder, particularly at that part which I think was already congenitally weak, more easily ruptured.

There seems to be no evidence that disease of the bladder existed prior to parturition; it was therefore most likely produced during that act, and it existed in a subacute form up to the time the mare was covered by the cart-stallion, on the ninth day after she had foaled. I think it is very probable that during this act increased inflammatory action was induced, which, conjoined with the congenitally weak condition of the organ, finally led to the rupture, and, of course, the escape of the urine into the peritoneal cavity, thereby causing, as would be expected, peritonitis, followed by death.

The case is one over which medicine could have no control, and certainly not at the time Mr. Overed was called in; nevertheless, as I have before stated, it is highly instructive, and I hope Mr. Overed will not fail to place on record other cases of interest that he may meet with in his practice, of which I predict he will have his full share.

REPORT ON THE RESULTS OF THE CHEMICAL ANALYSES MADE IN CONNECTION WITH THE SUPPOSED DEATH OF THREE COWS FROM GATHERING UP THE SPRAY OF RIFLE BULLETS: RECORDED BY MR. WATSON, IN THE MAY NUMBER OF THE *VETERINARIAN*.

By Professor TUSON.

THE readers of this Journal will remember that Mr. Walker Watson communicated, in May last, the particulars of a case of considerable novelty, interest, and importance, in which it was thought that the death of three cows had been occasioned by their picking up small fragments of lead while feeding in a pasture adjoining the Rugby rifle-butts. Subsequently to the publication of the communication here referred to, another cow, that had been kept in the same pasture as the three others, likewise died. The symptoms prior to death, and the results of the *post-mortem* examination, were the same in all the animals. The viscera of one of the cows that died last, as well as other matters named hereafter, were entrusted to me by Mr. Watson and Mr. Mullins (the owner of the cows) for analysis, and thinking my report, which I furnished to those gentlemen, would be an important appendix to Mr. Watson's published remarks, I do myself the pleasure, by the kind permission of both gentlemen above named, of placing it before the readers of the *Veterinarian*.

CHEMICAL LABORATORY,
ROYAL VETERINARY COLLEGE,
LONDON; *June 23, 1864.*

To Mr. WALKER WATSON, M.R.C.V.S.

SIR,—Agreeably to your request, I have chemically examined the undermentioned viscera of a cow, as well as the bullet-spray, which I received from you June 9th, 1864, and

I now beg to furnish you with the following report upon the results obtained.

The Stomach.—Fragments of bullet-spray were found adhering to the coats of the stomach. These were picked off, and about eight ounces of the stomach, thus freed from spray, were washed in distilled water, for the purpose of endeavouring to remove any mechanically adhering lead which might have escaped detection by the eye, and then analysed. Most decided evidences of the presence of lead were obtained.

The Intestines.—About eight ounces of the intestines were examined in precisely the same manner as the stomach, and lead was discovered in them.

The Liver and Kidney.—On testing portions of these organs, after rinsing them in distilled water, for lead, that metal was detected; but it evidently existed in the liver and kidney in much smaller quantity than in the stomach or intestines.

The Bullet-Spray.—In addition to the above-mentioned analysis, the following experiments were made on the bullet-spray which you forwarded to me, and which, I understand, was found among the herbage in the pasture adjoining the Rugby rifle-butts. Some of the flattened, irregularly shaped fragments of lead constituting the spray, had a semi-metallic lustre, indicating that part, at least, of the metal had undergone but little chemical change. Most of the fragments of spray, however, had suffered considerable alteration, as was shown by their being coated with a drab-white incrustation.

This drab-white incrustation was analysed, and found to contain carbonate of lead, and I believe, if a sufficient quantity of the incrusting material could have been obtained, so as to have enabled me to have conducted a more complete and quantitative analysis of it, I should have ascertained that it consisted of a mixture of carbonate of lead with oxide of lead. I may here remark, that the lead found in the stomach of the cow possessed similar characters to the spray picked up in the pasture.

Some special experiments were made with reference to the action of solvents, possessing similar qualities to those contained in the alimentary canal, upon the incrustated fragments of bullet-spray, and I find that chloride of sodium (common salt), alkaline solutions (water containing carbonate of potash or carbonate of soda), and exceedingly dilute hydrochloric and acetic acids, will act upon and render soluble a portion of the lead.

The conclusions, therefore, which I think we are justified in drawing from the foregoing experiments and observations are—

1st. That absorbed lead probably existed in the coats of the stomach and intestines. It is impossible to speak with certainty on this point, as the lead found in these organs may, in spite of their having been washed in distilled water, have consisted of minute fragments of metal, or its incrusting carbonate, adhering to their coats.

2nd. That lead passed from the alimentary canal into the circulation. This was proved by the metal being found in the liver and kidney.

3rd. That inasmuch as the lead found in the stomachs of the cows, referred to in your letter, had been lying in those organs, and there exposed to the action of alkaline and acid fluids, during a period of between at least six and seven months, it appears to me that the lead must have all that time been undergoing gradual but constant solution, that is, conversion into a fit state for absorption.

4th. That it seems to me probable the death of the cows, in whose stomachs the lead was found, was occasioned by the absorption of that metal into their systems, especially as they all appear to have exhibited the same symptoms prior to dissolution.

5th. That if the medical, chemical, and general evidence, which we at present possess, will not enable us to say that lead did actually and positively occasion the death of the cows, we are, nevertheless, in possession of sufficient facts, and of such a character, as to warrant us in considering that it would be exceedingly unwise to permit animals to be kept in fields adjoining rifle-butts, unless precautions are taken to prevent the spray from the targets being scattered about in the manner it appears to have been hitherto.

I am, Sir,

Your obedient Servant,

RICHARD V. TUSON, F.C.S.,

Professor of Chemistry to the Royal Veterinary College.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor BROWN, M.R.C.V.S., London.

(Continued from p. 389.)

AFTER some general reflections upon the difficulty and importance of distinguishing between the different kinds of

sounds produced during respiration under different circumstances, it was attempted to show the advisability of qualifying an opinion of unsoundness, according to the probable extent and duration of the cause, on the general principle that roaring or whistling may be alleged against a horse to-day who shall be perfectly free from that unsoundness in a fortnight's time.

The discovery of an acute or recent cause would not justify an examiner in total disregard of the defect. This is not contended, but it certainly appears to be convenient to include all such cases as are likely, under ordinary circumstances, to recover, in one class.

Experience proves that recent cases of roaring often become permanent, and hence the importance of considering all unnatural sounds in respiration consequent on disease to constitute unsoundness, but not the less to refrain from confounding a variety of morbid conditions differing widely in their influence upon the animal's usefulness, under one common term.

Special warranties will always meet the difficulties attending the sale of animals affected with a temporary unsoundness, that is likely to yield to treatment. Should such a certificate be refused, the veterinary surgeon is free from any further responsibility.

Where time does not press, a second examination, in a few weeks from the first, will be the most satisfactory method of deciding whether the defect is likely to be permanent. These suggestions involve more trouble and thought than are usually considered necessary in order to decide whether a horse is sound or not; but the results to the profession and the public would be worth some little pains to arrive at, if only to obviate the unpleasant disputes which are of such frequent occurrence.

ABNORMAL SOUNDS IN THE BREATHING PRODUCED UNDER CERTAIN CONDITIONS OR ONLY UPON OCCASIONS.

A very nice question of law arises at once under this division, viz., whether a noise during respiration at intervals can be said to come under the accepted definition of unsoundness. Whatever may be said *pro* and *con.*, it is safe for professional men to assume the fact as determined, because it is at least probable that an occasional whistler or roarer is suffering from structural derangement that will ultimately extend and lead to a continuance of the defect.

Some very peculiar instances of exceptional roaring or

whistling have occurred, two of which might fairly give rise to doubts of their truth ; but as both happened in the writer's experience, he ventures to give them. About four or five years ago a horse was brought for examination as to soundness of respiration. The animal was a hunter, and, from the fact of particular allusion being made to his breathing, it was evident that some doubt existed, and accordingly every test was applied to determine the point. In all his paces, upon turf and over ploughed land, the horse was found to be perfectly sound in his breathing. The groom, being informed of the conclusion, suggested, with the air of one who knew the solution of the difficulty by heart, that the horse should be ridden *over a hurdle*. This was immediately done, and with most unexpected results. The animal, on landing, gave a grunt of apparent triumph at the achievement, and, throwing up his head, careered along to the accompaniment of a well-sustained "clarion sound." It was then ascertained that the horse was well known to be a roarer, but, as the groom expressed it, "You couldn't knock a sound out of him, sir, until you took him over a fence."

The singular part of the affair was that the horse, after being pulled up and started again, continued to "roar" without a second leap being necessary.

Without any exaggeration, the facts are put down as they occurred, and the case may fairly claim to stand alone.

Under ordinary circumstances the horse would have been returned with a certificate of soundness, as, in the absence of a direct hint, one would hardly think of riding an animal over a fence for the purpose of testing his soundness. The next instance occurred quite recently in London. A dealer's horse was examined, with the understanding that he was an undoubted roarer ; the owner had heard him "roar" on several occasions, and the men in the yard were quite familiar with the circumstance. Not, therefore, with the view of deciding a doubtful point, but of obtaining a formal certificate of an unquestionable unsoundness, a professional examination was considered necessary. The horse was submitted to the usual tests without any unnatural sounds being elicited, to the extreme surprise of the owner and the man who rode ; on the previous day it was asserted that the noise made by the animal was distinguishable the length of the ride.

A second and longer trial was given a day or two afterwards, with the same result. After a short time the owner sent the horse to another veterinary surgeon, whose name, if it were given, would be a sufficient guarantee of his skill. He found the animal to be a decided roarer, and the man who

stood by at the time and the man who rode him both heard the sound.

Still a few days further on, the owner again requested me to make another examination. The horse was again ridden by the same man, and again no sound could be elicited. At the owner's request I rode the horse to the veterinary surgeon who had lately discovered the unsoundness, when he submitted him to another examination, and failed to induce a repetition of the sounds he had previously distinctly heard. Under these circumstances legal proceedings were stayed, otherwise we should have had, not merely two veterinary surgeons giving different opinions, a thing by no means uncommon, but a high veterinary authority asserting the animal to be sound now which he condemned as a roarer a week ago. In this case there was nothing to account for the temporary existence of roaring; the horse was in good health, and was kept long enough for any cold or sore throat to have subsided or become worse, but without any change that could be detected. He continued at intervals to "roar," and then steadfastly refused to make the slightest noise for days, notwithstanding any amount of provocation.

It may be urged that a few extraordinary cases should not affect a general system of practice; but it is doubtful if these cases are solitary, or even very rare. The frequent difference of opinion about a point that should not, in the common course of things, be open to any doubt, rather leads to the conclusion that the cause lies in the nature of the subject investigated, instead of in the method of the examination; in any case it is important that the profession and the public should remember that these peculiarities do present themselves, and not, therefore, be dreadfully scandalised if now and then Mr. A. condemns a horse as a roarer which Mr. B. yesterday passed sound; because such things have happened, and most certainly will again, until pathology shall become, what it is not yet, a mathematical science.

DISEASE OF THE HEART AND INTESTINES COMPLICATED WITH EFFUSION.

By J. TOMBS, M.R.C.V.S., Stratford-upon-Avon.

THIS patient was a black gelding. When I first saw him, September 4th, 1863, the scrotum was swollen from some kind of strangulation in it; the parts were cold; no pulse

could be felt; the respiration was very hurried and deep, and clammy sweats covered the body. My prognosis was unfavorable, and he died in excruciating agony at 3 p.m.

Post-mortem examination, September 5th.—The ends of the spermatic cord were strangulated, gorged with black blood, and much enlarged; abdominal cavity filled with serum; omentum and spleen diseased, also the mesentery; effusion of yellow serum into the latter; large lumps of black coagulated blood, contained in cysts, resembling diseased mesenteric glands, pervaded the whole of the mesentery; the membrane of the convoluted portion of the rectum, that is, its superior part, was filled with black blood, resembling continuous cysts; for two feet in length it formed an abnormal irregular mass, as large as a fork-handle; the lymphatic glands of this part of the bowels, as well as the mesentery, were enlarged and filled with black blood; the coats of the bowels were thickened and diseased, particularly at the middle part of the affected portion.

The cavity of the thorax was filled with effused serum and clots of coagulated lymph; the pleura was diseased; the pericardium was distended with serum, the right side of the heart being very thin and flabby, and its investing membrane discoloured; the auricular ventricular valve was thin and apparently stretched, and the cordea tendinea lessened in size; the lungs were unusually small and congested.

The singularity of this case is that the animal appeared to be in perfect health until the day he died. He had been turned out with other horses, and when they were fetched in in the morning he was found standing by himself in a dull state and the scrotum enlarged. In all probability, it was the immense weight of the water pressing on the spermatic cord that caused the strangulation, followed by effusion into the scrotum and sheath.

INFLAMMATION AND OBSTRUCTION OF THE STOMACH AND INTESTINES.

By the Same.

MAY 30th, 1863.—I was called up at 5 a.m. to attend an aged bay mare, belonging to Mr. Rogers, of this town. When I saw her she was rolling about continually, and then lying on her back. She had evidently been in great pain for several hours, as the mortar on the walls was kicked off,

and the manger literally scratched all over; the pulse was feeble and 105 in the minute; the breathing accelerated; the Schneiderian and conjunctival membranes injected with blood of a purple colour. I at once told the owner I considered the case to be hopeless, but he requested me to relieve her, if possible.

On making inquiry, I ascertained that her attendant had given to her an extra quantity of new beans and hay at 6 p.m. the previous evening, in order to prepare her for a long journey the next morning. She could not see out of her eyes, the lids were so much swollen from her repeatedly battering her head against the walls when rolling about.

Such medicines were given by me as I considered most likely to alleviate her sufferings; but, despite all endeavours, at 8 a.m. the abdomen became tympanitic, and at 10 o'clock she died.

Post-mortem examination.—The stomach was distended with gas, and full of half-masticated ingesta; the mucous lining was intensely inflamed; the duodenum was inflamed throughout, and contained liquid blood; the jejunum, ileum, colon, and cæcum, were crammed with half-masticated and undigested corn and hay; the villous coat of all the last-mentioned intestines was congested, the rectum only escaped. The other internal viscera were healthy.

The cause of the disease was over-gorging. The man left her a little after 6 p.m., and the neighbours heard her making a noise four hours after, but gave no alarm. If they had, possibly relief might have been afforded.

INFLUENZA ATTACKING THE VILLOUS MEMBRANE OF THE INTESTINES.

By the Same.

JUNE 4th, 1863.—I was requested to attend a black mare belonging to W. B. Lowe, Esq., of Easington. The symptoms present were belly tucked up; respiration disturbed; pulse 70; countenance dejected; appetite bad; submaxillary glands enlarged.

She had been ill for two days, and injudiciously bled to the amount of a gallon. Gave stimulants internally, and applied excitants externally.

6th.—Extremities swollen and œdematous; pulse 100; breathing bad; still no appetite. Treatment as before.

8th.—Animal worse.

9th.—Rumbling of the bowels present, with diarrhoea. I entertained no hopes of recovery, and administered such medicines as I considered most suitable.

10th.—Impeded respiration; escape of mucus from the nostrils, mingled with blood; excessive purgation; prolapsus ani; after the liquid faecal matter is evacuated, a considerable portion of the rectum protrudes, the lining membrane of which is seen to be discoloured and œdematous; retraction of this took place after the evacuation, but not so the anus.

I could plainly perceive that the case was a hopeless one, and had no doubt but that the whole alimentary canal was œdematous. The breathing was laboured and quick, the pulse weak and 120; great uneasiness was manifested previous to an evacuation, and the appetite was entirely lost. She lingered on until the 11th, when she died. I did not make a *post-mortem* examination myself, but I saw the man who skinned the carcass the next day, who told me that the bowels were adherent by thin matter to the peritoneal lining of the abdomen, particularly at the lower part, and that the lining membrane of the bowels was œdematous throughout, and blood effused between their coats.

It is seldom that influenza attacks the intestines as in this case. The mare had an ordinary although severe attack of influenza last year.

DISEASED STOMACH, BOWELS, AND MESENTERY.

By the Same.

SEPTEMBER 4th, 1863.—Subject an aged gray horse. I was requested to make a *post-mortem* examination, in order to ascertain how long the animal had been diseased and unsound, as the present owner had recently purchased him.

Sectio cadaveris.—Duodenum diseased to the extent of about six inches; it was black, thickened, and almost putrid; a deposit of calcareous matter existed between the coats at the diseased part (twelve inches from the stomach), which caused a partial stricture; mesentery and its glands were diseased and enlarged; a large scirrhus tumour (weighing probably twelve pounds) was situated contiguous to the mesentery and bowels, and attached to the spine, through which ran the posterior aorta; the blood-vessels given off

from the latter to supply the mesentery and adjoining parts were greatly enlarged; the part of the omentum adherent to the peritoneum and the omentum were diseased; the upper villous portion of the stomach was ruptured (the immediate cause of death), the contents of which had escaped into the cavity of the abdomen amongst the intestines; the mucous coat of the stomach was diseased, reddened, and ulcerated; very little gastric juice could have been secreted for a length of time, which, of course, materially interfered with digestion, and led to the rupture of the stomach, by causing its distension, from the food being only partially digested, when gaseous matters are evolved, and the contractile powers of the stomach thereby are rendered weak. The mucous coat of the bladder was thickened and diseased; the right kidney was also diseased.

The symptoms for a month before the death of the animal were—the appetite sometimes bad and sometimes good; frequently looking back, kicking at his belly, and occasionally rolling and lying on his back.

What medicines were given I know not, as I did not attend him.

CASES IN PRACTICE.

By "ARGUS."

No. 1.—FRACTURE OF THE PELVIS.

SOME months ago I was consulted by a staff officer about a charger of his which had been severely injured. He told me the horse had taken fright at something in the stable three weeks before, and had suddenly reined back and fallen completely over. When I saw the animal he did not appear to be in pain while standing still, but when walked the motion of the off hind leg apparently distressed him; he could not put any weight on it, but hopped upon the other leg, and proceeded sideways instead of straight to his front. I found the distance from the crest of the ilium to the hip-joint, to be less by two inches than that of the opposite side, and there was clearly considerable alteration of structure about the acetabulum. Before, however, finally giving my opinion, I took the horse into my own stable and watched him for several days, the result of which was that I told the owner I was certain the ilium had been fractured and the

hip-joint considerably injured, and recommended him to have the horse destroyed. At his request I shot the animal, and afterwards examined the pelvis, which I have preserved in my pharmacy. I found the ilium fractured through its middle narrowest part. This had reunited, but it caused a shortening of the bone to the extent of about an inch, and considerable convexity of its dorsal surface. The acetabulum was fractured in three places, and the ischium broken right through close to the hip-joint. Displacement had taken place in this latter fracture, and no attempt at union was apparent. Of course the horse would never have been of any use had he been allowed to live; and though his destruction caused a loss of £80 to the owner, still it was the only thing a veterinary surgeon would have been justified in recommending under such circumstances.

I send you an account of the case, because I think it is seldom we meet with such very extensive injury arising from a mere fall backwards, and on level soft ground too.

No. 2.—FRACTURE OF THE HUMERUS.

The surgeon of my regiment sent for me suddenly some evenings ago, with a request that I would go over to his house "sharp." On arrival I found that his buggy-horse, a large animal of the New South Wales breed, had, while standing at the door harnessed in the buggy, become alarmed at something and ran away. The horse had made for a six-foot mud wall in front of him, with the intention of galloping through a gap in it, which was only large enough to allow a man to pass; the consequence was that he came at full speed with his near shoulder against the wall, knocking it down and rolling over sideways, buggy and all. The buggy was, of course, considerably smashed. I found the horse up, but standing on three legs, the near fore hanging helplessly in the air. On examining this limb, the animal objected strongly to my touching his shoulder or elbow; and upon my manipulating the part, and listening while the owner pulled the leg outwards and downwards, I distinctly heard crepitus just above the elbow, and could feel the broken bone move. I told Dr. ——— it was an unquestionable case of fracture of the humerus, and he asked me to shoot the horse, which I did at once.

The *post-mortem* examination revealed an extensive compound fracture of the humerus just above the elbow-joint.

Is it not somewhat strange that the animal's coming up

against a simple mud wall only eighteen inches thick, and which fell from the force of the shock, should fracture such a bone as the humerus is in the horse?

No. 3.—OBESITY OF THE HEART.

Is this an acknowledged disease in the horse? I was sent for about a week ago to see a troop-horse reported to have suddenly shown symptoms of serious illness. Before I reached the hospital, however, the horse was dead, though he had only been ill for half an hour. The farrier-serjeant told me the horse had commenced to breathe heavily and with difficulty; that he stood with his legs apart and head down, eyes staring wildly, and altogether looked greatly “distressed;” when he fell, he was strongly convulsed for some minutes, and then died.

I made a *post-mortem* examination, and found chronic disease of the liver and spleen, the latter being more than twice its natural size; but this is often found out here. The only other abnormal state was a large accumulation of fat at the base of the heart and around the pericardium, the quantity being sufficient to press upon the aorta and the heart itself, and interfere with their action. Could this have been the cause of death, as it is said to be in man sometimes? I cannot account in any other way for the sudden death of the animal. He was fifteen years of age, and had done more than the average amount of hard work without ever showing symptoms of illness. Lately, however, it had been observed that he was not in such good condition as usual, but this was attributed to his getting old.

No. 4.—EXAMINATION FOR SOUNDNESS.

This horse was a Waler, for sale for £40, said to be eight years old, and sound. The seller agreed to my opinion being asked by the intending purchaser as to soundness and value. I examined the horse, and found him to be a stale old animal, at least fourteen years of age, and very unsound. He had a completely decayed incisor tooth, ossification of the lateral cartilages of both fore feet, a false quarter in the off hind hoof, and bone spavin in both hocks, causing stiffness and inability to flex those joints freely when trotting. I recommended his not being purchased at any price. The seller (whom I know pretty well) came to me afterwards, and in a tone of astonishment said, “You don’t mean to say my horse is really unsound, and not worth the price I asked?” This

proves (if proof were wanting) how ready people are to call their horses sound when they want to sell them, either from not giving the question due consideration, or in the hope that purchasers may be found willing to buy on the strength of the seller's assurance that "the horse is all right, and only such an age."

I examined another horse about a fortnight ago, an Arab, six years old, and a very handsome animal, price £120. In reply to a note from the intending purchaser, the owner said the horse was sound as a bell, free from blemish, and perfect in temper and paces, and that he had no hesitation in agreeing to a veterinary surgeon giving his opinion of him. I found the horse to be unquestionably spavined in both hocks (a rare thing with Arabs), and stiff in his action therefrom. So very apparent were these spavins, that three officers, who were standing by when I examined the horse, asked me if he were not unsound in his hocks, without my having said or done anything to draw their attention to those joints.

In this instance I really believe the owner felt fully persuaded that his horse was sound and perfect in every way. It is an unpleasant duty to have to pronounce a horse of such value unsound under the circumstances of this last case; but if people *will* submit their horses to our examination, and purchasers will not buy without it, what can we do?

My opinion was asked about another horse, an Arab, value £140, some time ago, which I was obliged to condemn as unsound in three places. I subsequently heard that the seller, a *gentleman*, was perfectly aware of his horse's being unsound, and that the animal had been examined by another veterinary surgeon, who would not pass him for the very same faults that I had found to exist.

ON THE CAUSTIC OPERATION FOR BONE SPAVIN.

By J. G. CATTRALL, M.R.C.V.S., London.

THE wise man has told us that "a word fitly spoken is like apples of gold in pictures of silver;" therefore, before attempting to describe the above operation, I feel it my duty to express my gratitude to our esteemed member, Mr. E. C. Dray, M.R.C.V.S., of Leeds, and President of the Yorkshire

Medical Veterinary Association, for his very kind remarks relative to my letter which appeared in the *Veterinarian* for April last, on the operation for roaring in the horse, with the results thereof.

As that gentleman has also expressed his desire to know from some of the members of the profession something about the caustic operation for the removal of bone spavin, and not having seen any reply made on the subject through our chosen vehicle, the *Veterinarian*, I feel much pleasure in contributing my mite, by responding to his inquiries, hoping it may lead to still further discussion, either in those pages or among our professional brethren, the associates of the different valuable provincial Veterinary Medical Associations, respecting which, allow me to say, may their researches prove conducive to the further elevation of our profession, as an antidote to empiricism and a shield to the British public.

I now proceed to describe the operation, and its results, as occurring under my own observation in the metropolis.

CASE 1. In the month of August, 1863, I was requested to see a brown mare, the property of Mr. C. Sylvester, who informed me that she had been causticked for bone spavins on both hocks by a charlatan, who obtained a livelihood by assuming the title of veterinary surgeon. On my examining the animal's hocks I found the anterior portions denuded of the skin, which appeared to have desquamated; the capsular ligaments had nearly all sloughed away; the articular surfaces around the margins were *in situ*, and exposed to the action of the atmosphere; a very peculiar and extremely disagreeable odour was emitted from the part, which induced me to examine the state of articulations, in which I discovered that extensive necrosis was going on, associated with ulceration all around each hock, and extending itself to the extensor metatarsi and annular ligament. I consequently considered the case as hopeless and dealt with it accordingly, by consigning the poor animal to the knacker.

Feeling anxious to learn how the operation had been performed, the would-be veterinary surgeon and operator was sent for, when I questioned him, and pointed out to him his imprudence in attempting such an operation without a knowledge of the anatomy of the joint, and its consequences, but I met with all I could have expected, by his responding, "Better luck next time." I asked him to show me how he performed this cure-all operation, to which he consented, and I provided him with the limb of a dead horse, above the hock-joint, with the skin covering it, when he took out his pocket-knife and made a longitudinal incision through the

skin, at its anterior part, and over the seat of spavin, then dissecting the skin backwards and forwards about an inch each way, he placed about a drachm of Hydrarg. Bichloridum, in powder, between it and the capsular ligament. This being done, he drew the edges in apposition, and passed three sutures therein. He stated that it was necessary that animals thus operated on should have their heads secured for five days afterwards.

I have seen two other poor animals thus treated since the above case, by a similar individual, the first of which died of tetanus, and the other only recovered at the expense of an anchylosed joint, associated with extreme lameness, so as totally to incapacitate him from working.

POISONING OF A COW AND TWO STEERS BY THE COLCHICUM AUTUMNALE, OR MEADOW SAFFRON.

By W. CHAMBERS, Veterinary Student, Kington.

THE following case of poisoning of a cow and two steers may not be deemed uninteresting to many of your readers.

The animals in question, belonging to Mr. Lewis, Lionshall, near Kington, were turned out to pasture with others, and broke out into an adjoining field, where the above plant grows in abundance.

They were, however, turned back with the rest after a short time, and nothing appeared to be the matter until the following day, when the owner noticed them standing apart from the others and looking very dull. He gave to each of them *Ol. Lini*, *Oss*, but not finding them get any better I was requested to see them on the evening of May 11th, when I found them showing the following symptoms:—

Stupor, swelling of the abdomen, frequent grinding of the teeth, a peculiar look of the eyes, the pupils being dilated, pulse almost imperceptible, bowels very much relaxed, and the *fæces* of a dark colour, extremities cold, loathing of food, suspension of rumination, and an eagerness for drink. There were no griping pains, nor was the breathing much accelerated.

The symptoms evinced by the steers were somewhat milder than those described in the cow.

I had them all placed in a cow-house, and gave to each a purgative, composed of—

Magnes. Sulph., ℞j;
Ol. Crotoni, ℥x.

and ordered them to be drenched with gruel.

May 12th.—The unfavorable symptoms of the steers are somewhat abated, and the medicine is acting, but those of the cow are rather worse, the medicine not having acted, and the fæces being still black and watery. I gave to her another dose of purgative medicine, and I felt inclined to use the stomach pump.

To each steer I gave—

Spt. Ammon. Aromat., fʒij;
Spt. Æth. Nit., fʒj; in haustus.

to be repeated at night.

May 13th.—A slight improvement in the cow, the medicine having acted, and the fæces being more healthy.

Gave Liq. Ammon. fort. ʒij, largely diluted with gruel.

The steers are evidently better; the appetite is returning, and the alvine evacuations are becoming natural.

Repeated the stimulants as before.

14th.—A still further improvement in both the cow and the steers. I ordered the same agents to be given all as before. Diet to be of a succulent nature.

15th.—All are doing well, and one steer has been again turned to pasture. The cow also is much better, the rumination is returning, and the moisture on her muzzle.

Repeated the medicines to both remaining in the cow-house, and requested the owner to continue to give them gruel.

16th.—The other steer turned out to grass; the cow is convalescent. Discontinued medicines.

In concluding, I beg to state that these cases are by no means unfrequent in this neighbourhood about the spring of the year.

I should be very happy to glean further information respecting the above plant from some of your numerous correspondents, for I do not think that Mr. Watson has alluded to it yet in his interesting papers on botany as applied to veterinary science.

[All cases of poisoning, by whatever agent, are worthy of being recorded. In the pages of this Journal will be found many instances of the injurious effects of colchicum, both on

cattle and on horses. We might refer to those by Messrs. Broad, Whiteman, and others, as occurring more recently; and especially to the elaborate and interesting account given by Mr. W. Litt, M.R.C.V.S., in the August number for 1860.

The quick expulsion of the agent from out the alimentary canal by purgatives, and the subsequent employment of diffusible stimulants, so as to overcome its sedative effects, as adopted by Mr. Chambers, was the correct treatment indicated.

Had there been any necessity for it, tonics might have followed to restore lost power in the system, although of all tonics food is the best when it can be partaken of.]

Facts and Observations.

A HORSE COMMITTING SUICIDE.—The following is forwarded to us by Mr. E. Hire, M.R.C.V.S., Penzance, Cornwall.

“A curious case was brought under my notice some little time since of a horse that was living on a common, and doing no work, attempting to commit suicide by making his way to the sea, which was in close proximity, and deliberately backing into it, and lying down to drown himself. He was however seen, and, help being at hand, rescued. Some little time after he more than endeavoured to destroy himself by the same method, as this time he succeeded in effecting his purpose.

“Thinking this may be worthy a place in your journal, under ‘Facts and Observations,’ I take the opportunity of sending it.”

EATING OF HORSEFLESH.—The Parisian correspondent of *The Chemical News* states that the hippophagists of Paris, headed by Baron Larrey and Geoffrey de St. Hilaire, have long desired to establish in this city butchers' shops where their favourite meat might be sold, but certain obstacles have hitherto prevented it. There are hopes, however, now, that not only shall we have a horse butcher's shop in full operation, but also a horse *restaurant*. How much better you manage these things in England, where for a few pence you can obtain, both raw and cooked, sufficient horseflesh to satisfy the most inveterate horse-eater. By the way, what

would be the proper English word for horse-meat? According to the rule enunciated by the famous Saxon etymologist, Wamba, it should be *cheval*, or some word derived from it. However, joking apart, I can personally testify that young horse is quite as succulent as young bull, and that old horse is infinitely more palatable and tender than old cow.

PREVENTIVE MEASURES ADOPTED BY THE FRENCH SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.—The same writer observes that the French Society for the Prevention of Cruelty to Animals (*Société Protection des Animaux*) goes further than the English institution, by not only endeavouring to prevent its *protégés* from being cruelly treated, but by rewarding inventions tending to increase their comfort and well-being. At the last meeting of the Paris society medals were given for a new form of horseshoe for use in slippery weather, a saddle which is stated to be more comfortable than the ordinary form, a horse-collar having similar merits, a sieve for cleaning grain from dust and grit, trusses for the cure of hernia in young horses, and an apparatus for the more effectual aëration of the water in fish tanks during transport.

The society, taking into consideration the cruelty to which horses are exposed when drawing heavy loads of clay from ground excavated for building in various quarters of Paris, have offered a premium of £500 to the inventor of a machine, to be set in motion by steam or any other motive power, of which the application shall have been successfully made in any of the building yards of Paris.

PRACTICAL APPLICATION OF DIALYSIS.—A patent has been recently taken out by Mr. Whitelaw, of Glasgow, for utilising the brine of salted meat. It consists in the employing of large dialysers made of various materials and shape, such as ox bladders, bags made of gutta percha, or skins of animals either open or closed, and fitted with stop-cocks. “Such an apparatus as the following would be found to answer the purpose:—A square vat made of a framework of iron filled up with sheets of skin or parchment or paper in such a way as to be water tight, and strengthened, if necessary, by stays or straps of metal. The sides, ends, and bottom, being composed of this soft dialysing material, expose a great surface to the action of the water, contained in an outer vat, in which the dialyser is placed.” The bladder arrangement Mr. Whitelaw considers the best, cheapest, and most easily managed. Brine, filtered to free it

from particles of animal matter, &c., being introduced into the bladders, and these being suspended on poles placed across in vats of water, at the end of the third or fourth day it will be found that almost all the common salt and nitre of the brine have been removed and the liquid contained in the bladders is pure juice of flesh in a fresh and wholesome state. This may be employed for making rich soups, or by evaporation, and mixed with flour, made into meat biscuits, or packed in tins and jars for sale. It is highly nutritive and admirably adapted for hospitals, ship's stores, or an army in the field. The salt and nitre may, of course, be easily reobtained, and again used. It need hardly be said that the saving thus effected is immense. Mr. Whitelaw states that two gallons of brine yielded one pound of solid extract. For the production of the same amount of extract something like twenty pounds of lean beef would be required. The quantity of brine annually wasted, he says with truth, is very great. He believes that in Glasgow alone 60,000 gallons are thrown away yearly. If it be estimated that one gallon is equal to seven pounds of meat in soup-producing power, then this is equal to a yearly waste of 187 tons of meat, and estimating the meat at 6*d.* per pound, the loss amounts to £10,472. This has reference only to one town. In the great American curing establishments, the brine wasted must be enormous, as during the last season in eight Federal states 4,000,000 pigs were slaughtered and cured.

Thus by the application of a scientific principle, only recently demonstrated by Professor Graham, a waste material is rendered of considerable commercial value.

PURIFICATION OF ARSENICAL SULPHURIC ACID.—For this purpose M. Blondlot recommends that the peroxide of manganese should be used so as to oxidize the arsenious acid. The way he proceeds is as follows:—Peroxide of manganese is added in the proportion of four to five grammes to the kilogramme of sulphuric acid, and the mixture heated to boiling in a porcelain dish, stirring all the time. It is then allowed to cool, transferred to a retort and distilled. M. Blondlot has distilled to dryness acid so treated, and never found a trace of arsenic in the distillate.

COLOUR AND ODOUR OF URINE.—Dr. Thudicum believes that he has isolated these principles in urine. To the first he gives the name of *Uro-chrome*, to the latter that of *Otto of urine*. Scherer obtained from urine a red matter, which he termed *urohæmatin*, which he considered resulted from the

disorganization of the blood-corpuscles, and which was eliminated from the system in this form: an ingenious theory.

NEW SOURCE OF CERTAIN METALS.—The rare metals cæsium, rubidium and thallium, have been discovered in a spring near Frankfort, the water of which leaves, on evaporation, a residue containing them. The first two of these have also been found to exist in many articles of human consumption, as beet-root sugar, tea and coffee; and thallium has been met with in many minerals in which hitherto its presence was unsuspected, likewise in molasses, yeast, chicory and tobacco.

GRAFTING ANIMALS.—A work has been published by Dr. Paul Bert on this subject, in which it is stated by him that he succeeded in making Siamese twins of a couple of rats, and also formed other monstrosities. He says, “It is a surprising spectacle to see a paw cut from one rat live, grow, finish its ossification, and regenerate its nerves under the skin of another; that when we plant a plume of feathers under the skin of a dog, it is wonderful to see the uninterrupted vital phenomena resume their course, and the fragment of a bird receive nourishment from the blood of a mammal.”

NEW TEST FOR DIGITALINE.—M. Grandeau has ascertained that if a dilute solution of digitaline be evaporated to dryness and the residue treated with sulphuric acid, a rose-coloured spot results, which, if exposed to the vapour of bromine turns to a violet colour. A great number of other alkaloids, similarly treated, do not give this reaction.

A VOLATILE ALKALOID IN DIGITALIS PURPUREA.—M. W. Englehardt, by treating the leaves of foxglove in the same manner by which conia is extracted from hemlock, has discovered that they yield a volatile alkaloid, which he has named *Digitalium fluidum*. By experiments performed with it on animals he considers it to be the active principle of the plant. It is exceedingly volatile, of an oily consistence, an alkaline reaction, soluble in water with difficulty, a little soluble in chloroform, soluble in absolute ether, odour very penetrating, intermediate between that of conia and nicotina, but when diluted not so unpleasant.

THE VETERINARIAN, AUGUST 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

OUR MEDICAL ASSOCIATIONS.

AMONG the subjects mooted at the last anniversary of the profession as being conducive to our onward progress—and we think that of late some steps have been taken in this direction—was the formation of a *Metropolitan Veterinary Society*, by Professor Brown. In the pages of this Journal for the past year it will be seen that Mr. Coates, Secretary to the Royal College of Veterinary Surgeons, suggested the formation of such an association, which we ventured to encourage and support, but it has been allowed to rest, only, as we hope, to gather strength; for we are strongly inclined to agree with Mr. Brown when he says, “It seems a sort of reproach that, considering the number of members we have in London, there should not be something in the shape of a central society of veterinary surgeons.” The “pressure from without” on the part of the provincial societies may tend to arouse our metropolitan brethren to a sense of their duty. We can hardly say more than we have already advanced as to the benefits to be derived from the members of the profession stately meeting together for the consideration of questions connected with the general weal, and the discussion of scientific and medical subjects. We augur great good to result from such a union. It will be the opening up of a new era in the profession, while it will tend to connect us together in one harmonious whole, for we want some moral cement so to bind us together; a unity of purpose and determination, that no longer we may be compared to a rope of sand. How is it that so little abiding strength exists among us, so that no real amalgamation for any length of time takes place? We hardly hope for a definite reply to this question, and perhaps it would be very difficult to assign the reason.

Nevertheless, we would it were otherwise, and believe it might be were all actuated by a right spirit.

We missed from the list of those in attendance at the last annual gathering the names of some who always used to be there, and we regret their absence, knowing the cause to have been ill health, which, however, has proved only temporary. We are glad to see an infusion of new and younger blood in the Council, for we are all too prone to run into a course of mere routine, and the ruts at length become so deep that we cannot easily get out of them. We know that there is talent enough and to spare among the rising members of our profession, were they called upon to exert it; and we further believe that the older ones would be contented to see them do so, for soon they must leave their places to be filled by others, and it would be well if these were to become somewhat initiated in those duties that must devolve upon them in after life, if they be honest to the profession and actuated by a desire to promote its advancement. Nor should they forget that an individual responsibility rests upon them to accomplish more than those have done who have gone before them. We are earnest advocates for an open and candid expression of the feelings, the result of independent thought and consideration. Partisanship we eschew, believing it to be destructive of all true unity. Equally would we denounce and avoid the arena of disputation and controversy, if not carried on with courtesy, which is true wisdom. Differences of opinion we know ever will exist, but these need not be offensively expressed, nor will they be by those rightly educated. Difficulties, too, will be sure to present themselves; but there is a pleasure in contending with them, and in proportion to their strength and number so will be the triumph when they are overcome. Without a contest there can be no victory. It has been said that "all mankind seem to possess the combative faculty in a greater or less degree; and its difference in one man and another is perhaps one quite as much of kind as of degree. The occupation which a man pursues, or, in other words, the difficulties which he prefers to encounter, are quite as dis-

inctive marks of his character as the energy with which he encounters them. An Aristotle or a Euclid fights as resolutely as an Alexander, and it costs as great an effort to read one of nature's laws as to assert the human law of might; but the one contest is visible, and the other seen only in its results. The pleasures of the victory and the struggle are perhaps as great in the one case as in the other. There is in both the precious drop of triumph to sweeten life—made precious only by the difficulty by which it has been purchased." Selfishness is always contemptible, and to be contented with stagnation shows a want of mental power. To be "up and doing" is our advice to our junior members, and we think we see a desire for this evinced in the formation of the different veterinary medical associations throughout the country. These must be instrumental for good, if they be only properly conducted, by their becoming, not only centres from whence power will emanate, but, through the information which they will be the means of disseminating, the body will ultimately become permeated, "for a little leaven leaveneth the whole lump."

It has been poetically said, "The great glaciers of the Alps fulfil their course in about a human generation. Noiselessly and imperceptibly they slide from the place of their mountain birth to the valley in which they are dissolved; and yet each year marks every part with change—the fresh snow consolidates into ice at their cradle—the various marks and fissures attest their course—they melt away at their terminus—the snowy child of the mountain having become a river of living waters to fructify the sunny plain." So it is with communities. A gradual change is constantly taking place. Every year causes us to look upon older heads and faces. Those once students take the place of their fathers, and palpable advances are being made as time passes onwards. It is but right, then, that such measures should be adopted as will not only meet the exigencies of the moment, but become of a permanent benefit; and this will, of course, depend much, if not entirely, upon the conduct of those who, placed at the head, have the management of affairs.

Again and again have we said that we are no friends to exclusiveness. Yet do we fear there is too much truth in the observations made by Mr. T. Greaves in his communication on "The State and Prospects of the Veterinary Profession," in the June number of this Journal, in which there is much that we sincerely agree with. He says (p. 392 *et seq.*), "I find that many of them (practitioners) object in the most strenuous manner to the notion or system of making the knowledge they have acquired common property. They will neither record their views in the *Veterinarian*, nor will they place them by a *vivá voce* description before our associations. The reason assigned for this is that their knowledge will fall into the hands of the common farrier, the groom, and the uneducated blacksmith, to employ it to their own advantage. Thus the profession is deprived of means which, being derived from accumulated knowledge and experience no one can doubt, would greatly enrich veterinary science. Press these gentlemen, and they will say, 'No' a thousand times over. Whatever knowledge I may have, each will say—having acquired much of it by my own application and industry—it shall sooner go down to the grave with me than it shall be handed over gratuitously to the uneducated man, who will try by its use to do all he can, in his own uncourteous, bigoted, ignorant manner, to take the very bread out of my mouth, and, moreover, who is by law permitted to call himself a veterinary surgeon, and thus claims to stand upon an equality with myself. Abolish this very censurable state of things, and then all the knowledge I may possess I will freely make known to my veterinary brethren."

We repeat that we fear there is too much truth in this statement; nevertheless, we think the remedy is an easy one. First, let the membership of the different veterinary societies be restricted to those who are members of the body corporate. We prefer this high, and it may be somewhat narrow, stand-point, to the broader one of those who have graduated at any of the recognised schools, because it adds to the *status* of the profession. But if so

be some are already members whose names do not appear in the Register of Veterinary Surgeons, as laws are not retrospective, we can only express a hope that such will, for the general weal, cause them to be so. There is no difficulty which they cannot easily surmount. Secondly, if so be publicity is to be given to the essays and debates—which we think desirable—let it be by abstracts thereof, couched in language that only the educated and scientific man understands. Not that we are advocates for secrecy—far from it; but “self-preservation is the first law of nature,” and the position in which our profession at present stands is not a little anomalous, and one, we fear, it will take some time to alter. Yet we do not think we should “rest and be thankful,” but persevere till we obtain our rights. Among ourselves there should certainly be no restrictions, but instead thereof a free intercommunication of thought and opinion. Let us then dare to be freemen.

“That which we are, we are ;
One equal temper of heroic hearts
Made weak by time and fate, but strong in will,
To strive, to seek, to find, and not to yield.”

THE CATTLE DISEASES PREVENTION BILL.

THE Government has wisely withdrawn “The Cattle Diseases Prevention Bill,” and thus our digest of the measure in the amended form in which it left the select committee is uncalled for. Greatly modified and improved as the Bill was by the select committee, it still contained some things highly objectionable, and we confess that we view this result in the House of Commons without feelings of regret. Although we have given our steady opposition to the Bill throughout, as originally introduced into Parliament, we are not, therefore, to be considered as opponents to all further legislation on the subject. On the contrary, we admit that the law requires to be amended,

and, with the amount of *trustworthy and practical information* which the Government has *now* before it, it is not unlikely that another session may see a really good measure introduced into Parliament. We have been twitted by some persons because in our opposition we were found to be acting with men deeply interested in the cattle trade ; this, however, we can afford to disregard, caring nothing so long as in our public capacity we are ranked on the side of truth and justice. The withdrawal of this measure and also of the "*Cattle Importation Bill*," which latter was disposed of by the select committee, leaves the country in the same tranquil position it enjoyed before sensationists appeared on the stage. The people of England will relish their beef and mutton none the less for the exposure which has been made before the select committee. More on this subject hereafter.

THE COLEMAN PRIZE.

THE Governors of the Royal Veterinary College, at their quarterly meeting, held on July 9th, having received the report of the professors on the comparative merits of the essays sent in for the Coleman Prize, proceeded to open the envelopes bearing the corresponding mottoes, and made the following award :

- SILVER MEDAL.—*Palmam qui meruit ferat.* Mr. Richd. Poyser, Wickworth, Derby.
- BRONZE MEDAL.—*Nil desperandum.* Mr. Wm. Cattell, London.
- CERTIFICATE OF MERIT.—*Erin go bragh.* Mr. Thos. Rickaby, Chilton, near Hungerford.

Extracts from British and Foreign Journals.

OVER AGRICULTURAL SOCIETY.

LECTURE BY MR. J. ELLIS, M.R.C.V.S., LIVERPOOL.

THE first lecture of the season in connection with this society was given on the evening of Wednesday, the 17th inst., in the long room at the Wheat Sheaf Inn, Over, by Mr. Ellis, veterinary surgeon, Liverpool, the subject being the "Breeding and Rearing of the Horse." The lecture occupied an hour in delivery, and, as usual at these meetings, an interesting discussion took place at its close.

Mr. Dutton was called upon to preside, who on rising remarked that all he had to say was they had a very clever man to address them, and one well acquainted with the subject he had to treat upon, and it only remained for him to introduce the lecturer.

Mr. Ellis then delivered the following lecture:—The subject I have the pleasure of introducing to this meeting is the breeding and rearing of the horse, and I shall endeavour to show its importance and the desirability of applying our best energies and attention to, and of adopting means not only for preventing the further deterioration of this noble and most useful animal, but of improving him and again rendering him what he was twenty years ago. There is no use denying or shutting our eyes to the fact, he has deteriorated, and it behoves us to look well to the cause and to apply the remedy without further delay, for sure I am that we shall be amply repaid for our trouble, and I hesitate not to state that, so long as England holds its high position as a nation, we shall always find a quick and a ready sale for all the horses we can produce and at prices highly remunerative. The opening of railways and the application of that mighty power steam, was at first supposed would supersede the use of horses, and by driving off the roads some hundreds of coaches did for a time cause a panic, and reduce the value of the class of horse that was used for coaching purposes, but this very soon righted itself, the railways opened up the country and thereby increased the demand for horses, and the numbers that were taken off the old coach roads were more than counterbalanced by the tributary traffic to the railway stations from places until then obscure and unimportant. This is daily increasing, and must of necessity con-

tinue to increase. The application of steam in agricultural operations does not, nor can it ever, limit the usefulness of the horse, for though the steam plough and thrashing machine came to his relief, and the development of scientific knowledge as applied to agriculture rendered this a matter of necessary aid to, and not a substitute for horse labour. Our increasing commercial and manufacturing cities and towns require a corresponding increase in the number of working draught horses; the streets are, in like manner, daily more thronged with omnibuses and every other description of public vehicles: professional men and tradesmen, too, are bound to keep horses, in fact in these go-a-head times no one that has any extensive out-door occupation can get along without a horse. The demand for remounts for the army is on the increase, and must continue to increase. We now turn to the pleasure horse, the first and most important of which is the racer, or thorough blood horse; and a reference to the number of breeding establishments and to the advertisements of our race meetings, the number of prizes and horses entered to contend for them, shows a rapid and extraordinary increase. The hunter next demands our notice, our hunting fields are larger every season, and the number of red coats, up and eager for this truly British sport seems almost without limit. Our parks and public thoroughfares testify beyond a doubt to the rapid increase in the number of carriage horses, pads and hacks of all sorts and denominations from the royal state carriage horse, down to the child's pony. With these facts before us, can we have any doubt of the importance to the agriculturist of horse breeding, and of the desirability of his giving his attention to it, giving to it that mature thought and consideration it so justly merits? We are in truth bound to admit that in style and action, and in form for general purposes, the breed of horses has degenerated. The cause of this I mainly attribute to the altered and highly improper system of racing, for I need scarcely tell you that all classes of horses, except the cart horse should emanate from the thorough blood horse. Instead of long courses and heavy weights for age being, as formerly, the rule of racing, requiring in the horse high courage, strong and symmetrical form and mature age to bring him successfully to the goal, now the races, as a rule, are short, and for two and three year olds and weights handicapped, thus bringing on an equality good, middling, and bad horses, reducing it to a matter of chance whether the valuable animal, carrying nine stone, is beaten by a weedy brute with five stone seven pounds on his back; and by doing this two

or three times the latter earns a reputation, and is set up as a sire to fill the paddocks with weeds, the worst specimens of which are given away or sold for a trifle, and led about the country to serve half-bred mares, at low prices, to the exclusion of better horses, and thus inundate us with wretches far worse than himself. Let it not for a moment be supposed that I assert we have no valuable blood horses, there are very many now superior and infinitely more valuable than the horses of twenty years back, but the demand for their services is so great and the prices so high, (even up to one hundred guineas the mare,) that they are unavailable except to the breeders of blood stock. Another cause of the scarcity of superior blood horses is the great number that are annually sold to go abroad, and the sorts selected are just the sort we should not permit to leave the country. The foreign agents are well up to their business, and make their selections from purity of blood, size, symmetry, colour and action; knowing well that the true superiority of the animal depends on these qualifications, and not in the mistaken idea of his having won a race or two. Steeple chasing was intended to stimulate the improvement in breeding, but handicapping has here also done the work of destruction. The deterioration in the cart or heavy draught horse I attribute principally to the very great demand there was for them twenty to twenty-five years ago, whilst the country was being cut up in railway making: the prices then given were so very high, and consequently tempting, that breeders, after selling all their extra stock, were induced to sell their best breeding mares and sires, and buying in their places inferior animals, and breeding from them; nothing could be more suicidal than this, nevertheless it is a fact much to be regretted. Another and a very prolific cause of deterioration is giving prizes at agricultural shows for what are called agricultural stallions—a class of animals which cannot be too strongly denounced as highly prejudicial to the breed of cart horses. I do not object to breeding this class of horses, but I protest against breeding from them. The colts should all be castrated; they will then be useful animals, and readily sold for good prices, for service in the lighter kinds of draught work. The objection by no means applies to mares of this class; they are just what we want in this and the adjacent counties, where all the land, in its turn, is worked and cropped. They are large, roomy, powerful, and quick, and the sort to work easily to themselves, and profitably to their owners, and at the same time to breed a colt that will grow up into an animal of great value for city and town draught work. My

objection is to the use of sires of this class, for I am thoroughly convinced that the only true way of breeding with success is to keep in every case to the integrity of blood, on one side at least, and as it is far more convenient for the farmer to obtain it on the side of the sire than to keep heavy thorough cart mares on his farm, I advise that he has recourse to the use of the thorough blood horse, or the thorough cart horse. As the blood stallion is by far the most important, let us consider the qualifications and form requisite in him for the general purposes of the country. He should have a good (not too small), expressive, and intelligent head, jaws wide, neck light, and not too much arched, bright and prominent eye, deep oblique shoulders, and the chin thrown well back, level and muscular back and loins, large, deep, and muscular quarters, large thighs, large flat hocks, and hind legs, deep and large muscular arms, large flat knees, and large tendons; pasterns both before and behind not over long, nor very oblique, fore feet tolerably large, not small, round, and rather hollow at the bottom; fore feet well set on, and, if any deviation from the straight line, the toes a little turned out, but on no account should the toes turn inward; chest round and roomy, with deep ribs. The action should be light, easy, and true, at all paces, the fore leg and foot well extended, knee up, foot forward and placed on the ground again the heel a little first; hind leg well extended forward, and hocks well under him; high digging action, with the toe of the fore foot reaching the ground before the heel is highly objectionable, and low shambling and twisted action on no account to be tolerated. Temper good, free from all vice, and sound, and free from all constitutional and hereditary defects. He should be a powerful, level, and truly formed animal, long, and from fifteen and a half to sixteen hands high. With these qualifications he will impart to his progeny all the requirements and form so essential, nay indispensable, for the satisfactory performances of the work of the field and road. Colour, if possible, should be bay or brown, and without white. The cart stallion should have a good head, with wide jaws, neck light and clean, thickening as it approaches the shoulders, shoulders muscular, broad, and deep, but not too oblique; chest wide, back strong, broad, and level; quarters strong and muscular, and extending well down towards the hocks; gaskines large, hocks large, clean, and flat; bone and tendon large, joints large, and firmly formed; feet strong and moderately deep, yet oblique; hind legs straight, and placed well under him, and on no account should his hocks turn or twist outward,

either whilst standing or in action ; fore legs well set under him, arms large and muscular, knees large and flat, legs large, clean, and firm ; pasterns strong and moderately oblique, feet strong and moderately large and deep ; heels wide and open, action light, quick, and true ; he should be mild and gentle in temper, and possess, in the highest degree, the power of standing under and moving heavy weights. It is of the greatest importance that all unsound and defective stallions should be excluded, and on no account used. With this view I advise that none be used which, in addition to the qualifications I have pointed out, whose owners do not produce a clear and unqualified certificate of soundness and freedom from all hereditary defects dated at the commencement of the season, and signed by one or more veterinary surgeons of acknowledged ability and position, and also one certifying to his fecundity. If these conditions are resolutely demanded, it will drive away all the unsound and impotent stallions that are doing serious injury to breeding and to the breeder's profit. I must again impress upon you the importance of this, and in proof I can state that I have known a given disease imparted to colts of certain horses with as much certainty as character and colour. I have known, in scores of instances, the colts of a particular horse to become roarers, in others to have ophthalmia ; the colts of other horses, in equal number, to have ring bones ; the colts of others to have spavins ; of others bursal enlargement of the joints ; of others umbilical hernia ; and in one season I have myself operated for this disease on twenty colts, all got by the same horse. With these facts before us, I am sure I am right in asking you to commence by only using perfectly sound stallions, for if unsound ones are used, every colt they get is likely to inherit their sire's diseases and defects, and where, as is commonly the case (in travelling stallions), a horse will get a hundred and fifty or more foals in a season, the injury becomes something very serious. We now turn our attention to the brood mare, and I must here again state that soundness is as essential and indispensable in the mare as in the stallion, and I advise you to reject all unsound and defective mares from your breeding stud ; the first class of which, in a national point of view, is the thorough blood mare ; but as racing now has become a business exclusive and of itself, requiring large capital, time, thought, and associations not compatible with tenant farming, I do not advise its adoption by my hearers ; but should circumstances occur that the farmer is induced to try his hand at breeding blood stock, let him breed only from mares that

are of stout and approved blood, and that have won or have shown capabilities for winning, and are themselves large and roomy animals. Let him, with due care to the crossing of blood, put these to the most fashionable stallion of the season, regardless of cost of service; by this plan he may obtain foals that will meet ready buyers at large prices; but he must sell them as yearlings and unbroken; on no account must he keep them longer, or have them broken, for if he does he will find that no one will buy them; they will be supposed to have been tried and found wanting in speed or staying qualities; and I do not advise the tenant farmer to try his skill on the turf. Where the land is light and easily worked, and the half or three quarters bred mare is sufficiently powerful to perform the duties of the farm, horse breeding hunters will be profitable, and the farmer may turn his attention to it; the mares should possess all the points and qualifications of the blood horse, more fully developed. They should be large and roomy, of plenty of courage and power of endurance, be gentle and free from vice, colour bay or brown, and if possible with black legs. Put these to the thorough-bred stallion, and the probability is you will obtain a colt that will make a hunter, charger, or a hack, failing which a fine and useful carriage or general harness horse; in any case a valuable animal. Should you desire to breed a more powerful, farming-like horse, such as are used in towns, in manufacturers' carts, spring vans, and in the chains of waggons, you may obtain them by putting this class of mare to the thorough cart horse. In this and the adjoining counties, taking into account the nature of the soil, the system of farming adopted, and the proximity to extensive commercial and manufacturing towns and cities, I recommend the farmer to turn his attention to breeding draught (cart) horses, as being best adapted to the soil, the cost and risk in rearing being considerably less, and the chance of selling profitably much greater, and the return quicker. The mares should be large, powerful, roomy, and active, essentially draught mares, not of the heaviest class, but large wide animals, with clean limbs, quick in every movement, full of energy, and capable of walking smartly, and taking a heavy draught with them, even at the trot, when requisite. In short, they should possess all the points of excellence in the stallion, and stand from sixteen to sixteen and a half hands high. The time most desirable to put the mare to the horse will depend upon circumstances, and upon the class of mare. The thorough blood mare should have the horse in February, so as to foal as early in January as possible, for as

the ages of all blood stock date from the 1st of January, they should foal as soon after that time as is possible, particularly so now, as all important races are for two and three years' old colts. It is manifest that a start of three months in a two year old is something important, and worth trying for, minding, nevertheless, that the colt is not dropped too early, that is, before the 1st of January. The blood mare, when carrying her foal, and near her time of foaling, should be kept well, have a large and roomy box, with plenty of clean bedding, be carefully watched, but never interfered with when foaling, unless there is malpresentation or other difficulty, for in a general way nature is all-sufficient, and no assistance is required. Care and attention may be requisite in getting the foal to suck, and a little tact and patience on the part of the attendant may be called for to reconcile the dam to her offspring, for from over anxiety or irritability on the part of the mare, accidents to foals are not uncommon occurrences. This difficulty over, little remains to be done, except in cases where mares are deficient in milk. The colt then should be induced to drink cow's milk and water, in about equal parts, with some sugar added to it. The mare should have plenty of good hay, ground oats, bran, carrots, boiled barley, &c., and a constant supply of good water. Her box should be kept clean, light, airy, yet warm, and well ventilated. She should again be put to the horse on the ninth day after foaling. As the season advances the mare and foal may be let out into a paddock for exercise, if the weather is fine and moderately warm, for a few hours in the middle of the day; they should then be taken up again. As the season further advances, they may be left out longer, and taken up only at night, with the same allowance of corn &c. We will now consider the other classes of mare, from the half-bred to the heavy draught mare. The most proper time to put them to the horse will be in April or early in May, so that you may calculate on their foaling when the weather is warm and the grass plentiful. They, like the blood mare, require care and attention at the time of foaling; and a large, roomy, and airy box, with a liberal allowance of good, nutritious, and succulent food, is essential. They should never be allowed to foal in the field, as the foal is very liable to get into a pit or ditch and be drowned. Indeed, the mare is not exempt from such casualties, if so exposed. I should here remark that the mare may work at easy draught until very near the time of foaling, but on no account must she shaft after the sixth month of gestation. Shafting and holding back heavy weights has a very injurious effect on the pregnant

mare, and often produces abortion. When the farmer is breeding largely, it will be well not to put all his mares to the horse just at the same time, but to arrange so that they may be a month or six weeks between the dates of foaling. By this plan he will be able to go on with his field work, and not be inconvenienced by having his mares idle all at once. Mares with foals on them should take the horse on the ninth day after foaling, and, as a general rule, they will hold to the horse from the first service. Barren mares should be put to the horse early in April, and fed upon light cooling diet, as there is often much difficulty in getting them to hold, if they are of mature age and in high condition. In all cases it is highly important that the mare, immediately after having taken the horse, should be placed in a box where no other horses can be seen or even heard by her, and every means should be adopted to keep her quiet and undisturbed for a couple of days. In the back end of the year it will be time to wean the colts, and care and attention should be directed to them; a liberal quantity of good and succulent food allowed, care being especially taken that the loss of the dam's milk be compensated for, and that the young animal is not allowed to lose condition. On this fact, at this time, very much of the future excellence of the animal, and the consequent profit or loss to the breeder, depends. These remarks will apply equally to all classes and breeds. They should be taken into large boxes, and the fillies separated from the colts, be haltered quietly, and gently treated, and accustomed to be tied up and handled. No violence or force should be used, and the young and innocent animal taught to have confidence in man, and regard him as a friend rather than an enemy. It entirely depends on early treatment whether the horse remains gentle or becomes vicious. At this time he should be carefully inspected, and every tendency to defect should be attended to under the direction of a skilful veterinary surgeon. All colts should be completely handled and domesticated before they are two years old, and the cart colt may then take his place (at two years old) at light work on the farm, and ever afterwards, by his services, earn the cost of his keep. At four years old he should be sold to give place to the younger ones. As a general rule, the best time for castration will be when he is a year old, say, in the month of April, so that he may recover from the operation, and be turned out early in May.

The Chairman said he felt under great obligation to Mr. Ellis for his excellent lecture. There were some things the lecturer had mentioned which it was doubtful if it would be

well for farmers to attend to, he referred to racing and hunting. (Laughter.) Mr. Dutton then referred to the sensible observations of the lecturer in regard to the importance of sound sires, and remarked on several instances under his own observation of horses of defective sight, and with other organic defects, which were invariably found to attach to their progeny, and requested information as to whether it was not of equal importance to have the dam free from hereditary defect as the sire.

Mr. Ellis, in reply, said it was quite important to have a sound mare as well as sire, only it must be borne in mind that the mare could only have one foal in a year, whereas the horse could get a large number.

Mr. J. Slater said the lecture had been characterised by the greatest discretion he had ever heard; it quite coincided with his previous opinion. As regarded race-horses, it was quite a delusion to say it was for the good of the country to breed them. Hunting he considered scarcely a rational amusement. He believed the best thing for the farmer was to breed cart horses, but he should like to know from the lecturer where the good horse was to be found, as many needed information on this point. He was glad to hear the remarks of the lecturer on the breaking in of colts. A man that could not do without a whip was not fit to break a horse, and he hoped all would remember the remarks made on this subject.

Mr. Ellis said, in reply to the question, Where is the sound cart horse with good constitution to be found? he would recommend the members of that society to buy one. He said that, in Oxfordshire, when a horse becomes nearly worn out he is sold away, and comes into other districts with disease fully developed, which he at once propagates, and it becomes hereditary. A careful selection could be made, and in time an improvement would take place.

Mr. P. A. Wood said that humours and hereditary diseases were the result of bad management; often by improper feeding by servants when the horses were taken up in the autumn. This induced disease which became fixed, and the mare then became unfit for hard work, and was put to breed off; the disease was propagated, and this produced the sort of stock described.

Mr. Bolshaw, on being called upon, said the lecturer had spoken with such propriety, and had so well explained the subjects on which he had treated, that little more could be added.

Mr. Rigby spoke on the bad effects he had observed from

consanguinity of blood in breeding horses, and said he believed they were defective in not keeping their cart horses and colts sufficiently well. Horses fed upon sound, good corn were always able to do more work by at least one half than when indifferently kept. As to the breeding of half-bred horses or carriage horses, he should like to have the lecturer's opinion. He had noticed many disappointments to those who tried to breed this class of horse, arising, as he thought, from using half-breds on both sides. He thought the active cart mare, put to a compact thorough-bred horse, would be more certain in its results. It was more desirable, in breeding any class of animal, to have a compact, symmetrical sire, rather than one large and bony, and the dam, he thought, should always be larger and more roomy than the sire. He should also like to ask the lecturer whether he considered stiff-clay farms good land for rearing colts on; he thought light and dry soils more likely to yield sound and healthy horses, apart from the greater damage done on clay farms by the galloping of colts in the autumn and winter season. He was personally much obliged to Mr. Ellis for his interesting and instructive paper, and begged to propose that the best thanks of the meeting be accorded him for the sacrifice of time which its preparation must have necessitated.

Mr. Ellis replied to Mr. Rigby's questions, and strongly recommended using a pure bred blood or cart horse, or otherwise they could not tell whether the stock would converge or diverge, and wet clay land was not favourable for horses; the foot of the colt became flat. Hilly land was favorable to muscular development.

The vote of thanks being seconded by *Mr. Slater*, and cordially passed,

Mr. Ellis, in responding, said he was exceedingly delighted with the reception he had met with, and any practical experience he possessed he should always be glad to communicate to that or any other similar society. He considered it one of the greatest pleasures which we could enjoy to endeavour to benefit others, and that the Over, Great Budworth, Frodsham, and Dunham o'ith Hill agricultural societies were calculated to do a great deal of good.

Mr. Dutton, in responding to a vote of thanks accorded to him as chairman, said he should have liked to have heard a little more about the breaking in of colts, and the barbarous practice of burning, which was so generally practised.

The proceedings were then brought to a close by an announcement from the secretary that other lecturers were engaged for the series.—*Nantwich and Crewe Guardian*.

ON THE IDENTITY OF PLEURO-PNEUMONIA AND RUBEOLA.

By W. THOMSON, M.R.C.S., &c.

(Read before the Medical Society of Victoria.)

MR. PRESIDENT AND GENTLEMEN,—The havoc among our herds caused by pleuro-pneumonia gives great interest to every circumstance connected with the malady. This interest is deepened by the mystery surrounding many things concerning its history—as to origin, nature, preventibility, or treatment. The alarm of the past has not subsided, but is continued into anxiety for the future; for the ravages of the disease are nearly as severe as ever, and opinions nearly as much divided about the most efficient means of staying them. It becomes, in consequence, of the utmost importance to elucidate if possible the points about which these differences exist, so that concerted efforts may be directed with the precision only practicable after a full and exact knowledge is gained of the disease they would aim to exterminate. To this end it will be even useful to prove a negative; for by showing what the disease is not, we come by so much the nearer, in the process of elimination, to the discovery of what it is. How much more, then, if we can determine a positive, and give the disease its proper place in nosology? To show that this is possible is the design of the few following preliminary observations. Preliminary, I repeat, because they are necessarily introductory and cursory, and made more with a view to lead discussion into a new direction than to deal exhaustively with the subject. At a future time this also may be systematically attempted, in order to elaborate more fully the views which I now proceed to lay before you. To know that the disease has not hitherto been satisfactorily defined, it is enough to refer to any author who has treated of the question. By much laborious inquiry, close observation, and keen discussion by men of the highest order of talent, many facts relative to the affection have been established beyond further dispute; but by the same men it is with equal candour admitted, that its true nature and affinities still baffle research, and remain among the *questiones vexatæ*. The name originally given to the disease, adopted as descriptive of the most prominent symptom, has long lost its significance, is now a misnomer, and is retained conditionally, as involving nothing theoretical, until a true one be suggested. No one has been as yet offered as a substitute upon scientific reasons; but the term which merely denotes, faithfully it is true, one of the

leading phenomena will be no longer used after the discovery of the exact nature of the disease shall indicate a more appropriate title. This fallacy of name has been the source of much perplexity and difficulty, particularly to those who were already familiar with the corresponding condition in human pathology; for they naturally applied old arguments to a new condition, on the presumption that the two were alike. It has likewise led to serious errors of treatment; for medical reasoners have affirmed that the one disease cannot be infectious, because another of the same name and of the same organs is not infectious. These reasoners have given primary attention to one part, and taking that for the whole, have proceeded in their partial view, overlooking the main portion, and therefore have gone far astray, taking those along with them who trusted to them as guides. I do not affirm that every one has so reasoned, but I maintain that many have done and continue to do so, perpetuating all the confusion of ideas, and presenting facts in a light in which they are apparently contradictory, but which, if seen in another light, would be quite clear and reconcilable. This was excusable at first, when all was necessarily dark; but it will be no longer so when the true import of the most fatal condition becomes plainly understood. That the disease is no longer considered by the best authorities mere local inflammation is well known; on the contrary, it is now fully recognised as, and is pronounced to be, a true zymotic fever, the affection of the pulmonary organs, originally supposed to be the only seat of disease, being a consequent—a specific consequent; that is, whenever the disease runs on to the second stage it invariably assumes the form of an irregular inflammatory or congestive state of the respiratory system. That there is a primary stage at which the fever may cease and complete itself, is quite evident. In some cases it is so mild as to escape notice. Now, one great peculiarity of all zymotic fevers is that of having a primary and a secondary course, each of definite relation the one to the other, the first giving all the immunity from a second attack as completely as if the second also had been passed through, which is nevertheless an essential part of the disease. Every one of these fevers has its primary stage running a certain well defined course, and every one has the co-related special local complication or sequelæ. For instance, if indeed instances need be alluded to, in scarlatina there is the peculiar febrile state proceeding with the utmost precision, and with the cessation of which the disease may end. If it do not, but pass onwards to the second state, an

equally definite affection of the kidneys follows. This is invariable. We never find disorder of the lungs, liver, or stomach constituting the second stage of scarlatina; if the disease be protracted beyond the first stage, it is in the form of a renal affection. Renal disease with general dropsy without prior scarlatina there may be, but this idiopathic form is wholly unlike the specific form, however closely resembling it. Then there is typhoid fever, followed by intestinal ulcerations, with equally unfailing regularity. The fever may subside or be subdued by treatment in its first stage, but if the second supervene, there is no escape from the inevitable enteritic disease. Small-pox has its peculiar sequelæ in erysipelalous inflammations of cellular, glandular, and articular parts, and a peculiar dyspnœa. In measles there is the invariable bronchitis, or pneumonia, or pleurisy. Other complications, as of the nervous system or digestive organs, may be superadded, but the affections of the lungs are never absent. Thus, then, we observe that in all these eruptive disorders there are two distinct periods, each complete in itself, but inseparably related in pathological cause and effect to each other. A fatal issue may take place in either stage, but such a termination occurs from totally different causes in each, or rather the mode of death is different. Then again, these periods are never mixed up in the different exanthems; nor are the secondary phases altered, nor the morbid states substituted the one for the other. The same patient may suffer from measles with pneumonia, scarlatina with renal dropsy, small-pox with erysipelas, typhoid fever with enteritis, all in succession; but no one ever heard, at least, in the ordinary course of disease, of renal dropsy after typhoid fever, nor ulceration of Peyer's glands after scarlatina. These facts are so well known as to constitute a true pathology, and give to this department of physic a fair claim to the exactness of a science, whatever may be denied to the therapeutics which is endeavoured to be founded upon it. The group of diseases so singularly characterised, and having so many striking resemblances yet exact specific differences, has received different appellations, according as it was wished to signify a theory of their common origin, or to describe some pathognomonic symptom. Thus they are classed together as zymotic fevers, from the supposed origin and cause; or they are termed exanthemata, or eruptive fevers, from the eruption or efflorescence on the skin; or contagious fevers, from their qualities of communicability to those susceptible to their poison.

(To be continued.)

THE CROONIAN LECTURE ON THE COAGULATION OF THE
BLOOD, DELIVERED BEFORE THE ROYAL SOCIETY,
JUNE 11, 1863.

By JOSEPH LISTER, Esq., F.R.S., F.R.C.S.

(Continued from p. 436.)

IT may not be altogether superfluous to mention some other facts illustrative of the active influence of ordinary matter in promoting coagulation, and the negative character of the lining membrane of the vessels. I find that a needle introduced into one of the veins of the foot of a sheep for a much shorter period than is necessary to produce the first appearance of the actual deposit of fibrin upon it, leads after a time to coagulation where the needle had lain; in other words, that a foreign solid, by a short period of action on the blood, brings about a change that results in coagulation, though the blood still lies in the living vessels. I have also ascertained that after blood has been made to coagulate in a particular vessel by introducing a needle into it, if the coagulum as well as the needle is removed, and more fluid blood is allowed to pass in, this blood remains fluid for an indefinite period, showing that the needle had not impaired the properties of the vessel by its presence; so that the previous coagulation must be attributed, not to any loss of power in the vein, but simply to the action of the foreign solid.

In seeking for an analogy to this remarkable effect of ordinary solids upon the blood, we are naturally led to the beautiful observations of Prof. Graham, lately published in the 'Philosophical Transactions.' He has there shown what insignificant causes are often sufficient to induce a change from the fluid or soluble to the "pectous," or insoluble condition of "colloidal" forms of matter. Indeed, Mr. Graham has himself alluded to the coagulation of fibrin as being probably an example of such a transition.

There is, however, another remarkable circumstance that must be taken into consideration, of which I myself have been only recently aware, and which may be new to several Fellows of the Society, and that is, that in spite of the influence of an ordinary solid the liquor sanguinis is not capable

of coagulating *per se*. It was observed many years ago by my colleague, Professor Andrew Buchanan, of Glasgow, that the fluid of a hydrocele, generally regarded as mere serum, coagulated firmly if a little coagulum of blood diffused in water was added to it; an effect which he was disposed to attribute to the agency of the white corpuscles.* I repeated Dr. Andrew Buchanan's observations last year, and satisfied myself first that the diffused clot did not act simply by providing solid particles to serve as starting-points for the coagulating process. I tried various different materials in a finely divided state, and found that none of them, except blood, produced the slightest effect. But I found that if a mixture of serum and red corpuscles from a clot was added to some of this hydrocele fluid, it was soon converted into a firm solid mass. If a small quantity of the serum and corpuscles was dropped into the fluid, and allowed to subside without stirring, coagulation rapidly took place in those parts where the red corpuscles lay, while other parts of the fluid remained for a long time uncoagulated. This seemed to indicate that the red corpuscles had a special virtue in inducing the change. I confess, however, that till very lately I was inclined to suppose that in the hydrocele fluid the fibrin must be in some peculiar spurious form. We know that the buffy coat of the horse's blood coagulates in a glass without addition of clot, and we know that lymph coagulates, so that I did not doubt that liquor sanguinis would always undergo the change when influenced by ordinary matter. But an observation which I made not many days ago shows that this was a mistake. I obtained the jugular vein of a horse, and having kept it for a while in a vertical position till I could see through its transparent coats that the red corpuscles had fallen from the upper part, I removed all bloody tissue from that part of the vein, and punctured it so as to let out the liquor sanguinis into a glass. Finding after eighteen minutes that the liquid had not begun to coagulate, I added a drop of serum and corpuscles to a portion of it, and within seven minutes there was a clot wherever the corpuscles lay, whereas the rest of the fluid was still very imperfectly coagulated after another half hour had elapsed. That the liquor sanguinis to which no addition had been made coagulated at all, was sufficiently explained by microscopic investigation, which showed not only abundant white corpuscles, but also several isolated red ones that had not subsided. This observation

* 'Proceedings of the Glasgow Philosophical Society,' February 19th, 1845.

was made three hours after the death of the horse; but I obtained essentially similar results on repeating the experiment in another horse an hour after death, so that there can be no doubt whatever that the fibrin was in the same condition as it is in the blood-vessels of a living animal. The observation appears also particularly satisfactory on this account, that the liquor sanguinis was not separated from the corpuscles by any process of transudation through the walls of the blood-vessels, which might be conceived to involve retention of some constituent of the liquid, which, though in solution, might be unable to pass through their pores; but simply by the subsidence of the corpuscles, which must have left all the materials of the liquor sanguinis behind them. Hence it is proved, beyond question, that if the liquor sanguinis could be separated completely from the blood-corpuscles, it would resemble the fluid of hydrocele in being incapable of coagulation when shed into a cup.

Now this struck me as a very satisfactory and beautiful truth, inasmuch as it clears away all the old mystery of the distinction between inflammatory exudations and dropsical effusions. Dropsical effusions, exhibiting little disposition to coagulate, have been supposed to consist almost exclusively of serum, and the exudation of the entire liquor sanguinis has been regarded as the special characteristic of inflammation, and very unsatisfactory theories have been put forward by ingenious pathologists to account for this difference. But it now appears that a dropsical effusion like that of hydrocele is undistinguishable from pure liquor sanguinis.

(To be continued.)

ROYAL SOCIETY FOR THE PREVENTION OF CRUELTY TO
ANIMALS.

THE annual meeting of the above society was attended by a large and fashionable audience. The Earl of Harrowby presided.

The Secretary read the report, the leading features of which were as follows:—After announcing the acquisition to the Council of his Imperial Highness Prince Louis Lucien Bonaparte, and the efforts which have been made to obtain an enactment in Italy for the protection of animals, it is

stated that during the past year promising branches have been established at Leicester, York, Reading, Rochester, and Chatham. They announced that they are about to offer a premium of £50 for an Essay against Vivisection, in English, and 1000 francs for a similar one in the French language, which they hope will continue the agitation against that practice which they have instituted. During the past year they have prosecuted upwards of one thousand offenders to conviction, and had sustained only seven dismissals. The officers had performed duty in eighteen counties, besides attending fairs and visiting the canal banks, in addition to the London suburban districts and the general metropolitan duty. At the Copenhagen market four officers constantly attend. Some of the offences punished were of a most horrible character, and many were too disgusting to be described in detail. In various parts of the country lectures had been delivered on kindness to animals, and schools had been visited for the purpose of inculcating the principles of this society upon children; while many sermons had been preached in favour of its objects. The committee are about to propose a plan for giving rewards to persons whose uniform good treatment of animals may merit some mark of distinction. They announce a premium of £50 offered for an improved vermin trap which shall supersede the toothed steel trap now in use, and, at the same time, be tortureless. Upwards of two hundred models had been received, and were on that occasion on view, but no adjudication had yet taken place. They report a favourable decision by Vice-Chancellor Sir W. Page Wood, in the Court of Chancery, in favour of a legacy left to the society of £10,000, and should the decision not be reversed, the amount, at the death of a life tenant, will fall into their hands for the improvement of London slaughter-houses. After enumerating a few donations and legacies, the report concludes with an appeal for support.—The principal persons on the platform were the noble earl, president; the Marquis Townshend, the Marquis d'Azeglio, Italian Ambassador; W. A. Mackinnon, Esq., M.P.; and the Rev. Mr. Smythies.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire.

THE Agricultural Institute of the State has received ten pairs of leporides from M. Roux, the President of the *Comice Agricole* of Charente. The Minister of the Interior and Agriculture proposes to send them into some of the provinces of Belgium in order to propagate them. These leporides have been obtained by M. Roux by copulation of the hare with a rabbit in a state of domesticity. The leporides, which have been introduced into Belgium, are three parts hare and one part rabbit; they have, according to M. Roux, the fecundity of the rabbit, while in size and taste of the flesh they partake more of the hare. M. Guzot, sometime ago, gave the history of the leporides in the *Journal d'Agriculture de Paris*; he observes that an eminent physiologist, M. Paul Broca, has given the name of leporide to the progeny of the hare and the rabbit—two distinct species, and enemies to each other—which no one would ever have thought of confounding with one another, their instincts or habits being different, or even opposed. In studying this new animal the learned professor has sought only for the proof of the unlimited and continued fecundity of these hybrides or metés; the agriculturist and breeder will interest themselves more in studying the advantages in a practical point exclusively. The usefulness of a breed, whatever that breed may be, is, in fact, the foundation of its value, and forms the only claim it has of being classed among those which agriculture undertakes to produce and improve. The qualities of the leporide, the profits to be realised by its propagation and rearing, are the only reasons which would assign them a place among the small domestic animals of our farm-yards. The mule is reared on account of its peculiar aptitude for certain services which could not be so well performed by either the horse or the ass; the leporide will be propagated for similar reasons, when it has been ascertained that he possesses these advantageous qualities which do not appertain to either the hare or the rabbit. On the same grounds the chabin—a cross between the he-goat and the sheep—has been produced solely for

its skin, and for which it is used for a special purpose. The leporide is not the counterpart of the hare and the rabbit, but, like the chabin, forms a well-defined, separate, and distinct breed; we might almost say a separate species, possessing its proper merits, the most valuable of which is, without doubt, the faculty of transmitting them to their posterity, being, as they are, endowed with an almost unlimited fecundity. The natural history of the hare and the rabbit is so well known that it is unnecessary to give it here; we will only remind our readers that these species have a great antipathy to each other, and agree very badly when kept together in the same place, and that the rabbit pursues and chases the hare so vigorously that he completely drives him from the locality where the former breeds, and there is no instance of their ever having bred together in a wild state. Paying no attention to this incompatibility of character, endeavours have been made by man to cross the hare with the rabbit and the rabbit with the hare, but, notwithstanding all the care taken to obtain a favorable result, Buffon, the naturalist, completely failed. Some others have not been more successful; young animals of both species have been brought up together under the most favorable condition as to success; they agreed tolerably up to the time of puberty, but the rutting time was the critical point; male and female then fought desperately until the weakest succumbed. Two or three successful results have, however, been reported, more or less authenticated, but they have been rare and isolated, and are no proof of a regular production having been obtained. However important to science, these facts have very little interest in a practical point; we can, therefore, pass them over, and come at once to the production of the leporide by M. Alf. Roux, President of the Agricultural Society of Charente. The first essays of this ingenious breeder date from 1847; in 1850 he had obtained results which fixed with certainty this curious product between the hare and the rabbit, and which promises to be of great benefit in an alimentary point of view. It is by the male hare and the female rabbit that the leporide has been produced by M. Roux. Now, the greatest difficulty is in the rearing of the male in a state of domesticity. The preference was given to the rabbit as the dam, on account of its fecundity, the hare being found to be often sterile in the state of captivity, even when living with its own male; on the other hand, the hare is less prolific, and the gestations are at greater distances; the produce of the latter is less numerous than that of the rabbit; moreover, the

female hare kills her young in a state of domesticity. For these mighty reasons the preference was given to the rabbit as the dam of the leporide. The rearing of the leveret is somewhat difficult; he must be caught when he is twenty or thirty days old, or as soon as he is able to do without its mother, and he is to be kept with young rabbits of the same age, carefully separated from all others; in this manner they grow up together without much trouble; the young hare is never so familiar as the rabbits, but becomes used to the confinement as the rabbits become used to his presence. At puberty copulation is to be promoted by leaving only one or two females with the male hare, to be afterwards replaced by others who have been reared with him. Thus managed, things go on wonderfully; the crossing is effected, and the fecundity assured. The litters are not quite so numerous when the rabbit has been matched with the hare; those which, when matched with the rabbit, would have had from eight to twelve, have only from five to eight with the hare. Experience shows that the hare is more prolific with the rabbit than with his own mate, and that the rabbit is less prolific than with the male of her own species. These observations are proof that both sexes concur in the work of fecundation. To guide and direct the crossings as well as to strengthen the male, he should be kept in a separate hutch; the females are then quieter, and conception more certain. The hare is, at the same time, timid and chaste; he satisfies the females that are with him only during the night, when all is quiet about him. It is advisable to cover the bars of the hutch with a cloth; the females should be removed in the morning. The leporides of the first cross, or half-blood, resemble the rabbit, with which they might be easily confounded. This, evidently, was not the object of M. Roux, as there would have been no advantage gained by it. To bring them nearer to the hare he put the females of the first cross to the hare again, by this means he obtained an individual of greater size and beauty than either the hare or the rabbit. In this the predominance of the rabbit had disappeared; although these crosses are three parts hare, they appear only half-bred, as they seem to have as much of the rabbit as the hare in their general appearance. In breeding from these leporides they produced individuals like themselves, but their litters were few (from two to five only); this promises no very abundant stock, and would not give the anticipated results. M. Roux thought of introducing more of the blood of the rabbit into the veins of this new family, but this would have been retrograding too soon

towards the first cross, which had too much of the rabbit already, and, therefore, was little satisfactory; it was, however, necessary to get a little further from the hare, of which the physiological predominance was diminishing the active fecundity of the rabbit, which was so desirable in the new breed. There was but one thing to be done, and that was to match the three-fourth blood female with the half-blood male; this was done by M. Roux with great success, for the produce thus obtained has answered the purpose in every respect. This new family may be considered as five-eighth rabbit and three-eighth hare. Comparing them to the domestic species, they might be designated simply as leporides three eighths. They have preserved the beauty of the physiognomy and conformation of the three fourth blood, but they have acquired a greater fecundity. When united, *inter se*, the litters are from five to eight young; they are easily reared, their rusticity being even superior to that of the rabbit. Their growth is rapid, and they are very precocious, and apt for reproduction at the age of four months. The time of gestation is thirty days, that of suckling their young three weeks. The female will take the male again about seventeen days after parturition, and will not be over-fatigued with six litters in the year. This family of three eighths becomes the industrial breed; it is productive, and can be reared with very little expense; it is early matured, and furnishes a large quantity of meat in proportion to the food the animal consumes. Their average weight is from four to five kilogrammes when one year old, the best weighing from six to eight kilogrammes; and while the rabbit is sold for one franc on the market at Angoulême, the leporides, four months old, are sold at two francs; older, the price increases, on account of their fur, which is sometimes better than that of the hare, the current price of which is as much as one franc. The colour is of a red roan, something between that of the hare and the rabbit; but the consistence of it is that of the former. The ears are of the same length as those of the hare, and, what is remarkable, one is erect while the other is lopped. The leporides have a bigger head, their physiognomy is more open, and they are more timid than the rabbit; the eye is also more open, and placed nearer the nose; the hind legs are nearly as long as those of the hare, but the fore legs are longer, and the tail shorter than in the hare, but longer than that of the rabbit. The flesh, in every degree of the cross, is very much like that of the wild rabbit, that is to say, only little darker than that of the tame rabbit, but its taste has nothing that reminds

one of that of the latter, or even that of the wild rabbit; it has a peculiar flavour, not unlike that of the wing of the turkey, it is said. It is generally preferred to that of the wild rabbit. In a zoological point of view, as much as in an economical, the production of the leporide is a great hit, and a service rendered to public alimentation, while agriculture will hail it as useful and beneficial. The wild rabbit becomes, at times, a great nuisance. The tame rabbit, as an article of consumption, is very inferior; the leporide gives a more abundant aliment, is economically obtained, and of a better flavour. These results are well known at Charente, and to all who frequent the market at Angoulême, where they are in great demand, and much appreciated. This hybrid race has lost nothing after from twelve to fifteen generations. M. Braca says that, on the contrary, they are finer and more perfect. They are superior in beauty and size to either of their progenitors. Abstracting all scientific considerations, M. Roux has obtained an important practical result; he has created a new breed, destined, probably, to become common, and be of great public service.—*Journal of the Agricultural Society of Brabant.*

THE YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE Quarterly Meeting of this Society was held at the Crown Hotel, Low Harrogate, on Monday, 11th ult.

The President, Mr. E. C. Dray, Leeds, in the chair.

The following gentlemen were also present: Messrs. Fryer, Secker, Bale, Secker, of Ripon, Pratt, Taylor, Danby, Holmes, jun., Naylor, Howell, Lord, Smith, Greaves, Carter, and the Secretary.

Mr. Bowman, Howden, and Mr. Schofield, Pontefract, were elected members of the society.

The President made some remarks on a case that had occurred in the practice of the Secretary.

The Secretary then drew the attention of the Members to an instance, reported in the *Veterinarian*, of a member of the profession being mulcted in heavy damages through alleged malpractice in a case of parturition in a mare. After deliberate consideration, a resolution was unanimously passed, instructing the Secretary to write to that gentleman, Mr. M. B. Forbes, Reigate, Surrey,—expressing the sympathy of

the society's members, their sense of the injustice done to him, urging him also to use every effort to obtain a new trial in a higher court, and offering material aid, if necessary.

Mr. Naylor, Wakefield, then read a most elaborate and learned essay on the natural history of the horse, which was well received, but, from the nature of the subject, it elicited little or no discussion.

The next meeting of the Society will be held at Ripon, on Monday, October 30th, at 3 p.m.

W. WILLIAMS, BRADFORD,
Hon. Sec.

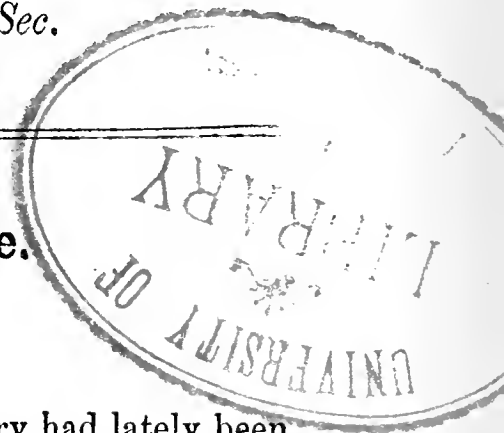
Parliamentary Intelligence.

QUEEN'S PLATES.

Mr. P. Wyndham said that the attention of the country had lately been called to the alleged fact that the breed of our horses for practical purposes had deteriorated. On that point he begged to read to the House a portion of the letter addressed to the Speaker, and subsequently published in the *Journal of the Royal Agricultural Society* by Mr. Dickenson, a successful breeder of horses, and a high authority on the matter. Mr. Dickenson said—

“Great advances have been made in the breeding of cattle, sheep, and pigs, in every part of the United Kingdom, during the last forty years. What is the case with regard to horses? Have they not retrograded in the same degree? Can the present race of horses be compared with those bred forty years since? The cart-horse, perhaps, is the only class that can bear the comparison. There is a cause for this which I shall mention hereafter. Formerly Royal Plates of £100 each were given for competition all over England, for four-year-olds, 10 st. 4 lb.; five years, 11 st. 6 lb.; six and aged, 12 st.; decided in four mile heats. Our horses were then the envy of the whole of Europe. These Royal Plates, for high weights and long distances, brought up our horses to this point of excellence; so long as they were so given, so long we kept our supremacy, but by some unfortunate influence the conditions were altered, and lighter weights and shorter distances allowed. From this point I date, under my own observation, the commencement of the deterioration of our thorough-bred horses, and, consequently, those in every-day use.”

Mr. Dickenson's experience extended back for a period of forty years; but Lord Redesdale, in introducing a Bill on that subject, in the other House, said he had come across complaints as long ago as seventy, eighty, and ninety years, of the decreasing stoutness and soundness of our horses. The noble lord the President of the Council thought he had reduced the argument of those who were constantly lamenting the deterioration of our breed of horses to an absurdity when he quoted the opinion of a livery-stable keeper, who had told him that as long back as he could remember anything he could remember these periodical complaints about the dete-



rioration of our horses. How were they to account for that deterioration? He thought Mr. Dickenson hit only a part of the reason for it. The real reason, he believed, lay in the undoubted fact that the object of those who had the command of the turf always had been, and always must be, to entice as many persons as possible to come upon the turf—an object inconsistent with such a system as would maintain for us the breed of stout horses. He was aware there were many who utterly denied this deterioration; but there was evidence enough left us to show that in former times horses ran six-mile distances and four-mile heats, carrying even 12 st., and sometimes 13 st., and remained five and six years on the turf, performing tasks which, if they were to try to impose on a race-horse of the present day, would kill the animal. It was the fashion with some to say that our horses were never finer than they were at present, and that the accounts of the racing in olden times were not to be relied on. But he found it easier to believe that there had been a deterioration in the stoutness, soundness, and structural power of our horses than to believe that all the feats recorded as done by horses in the last century were a sham, and that, pretending to run four-mile heats, the jockeys had cantered the greater part of the way. The stamp of our horses had undergone a change. The modern racer stood over more ground than his predecessors, and had a longer stride; but he was weaker in the loins, and had less capacity of chest. What was the remark that would at once be made by any one who looked at the pictures of our race-horses by a great artist fifty years ago? Why, they looked more like hunters than racers, combining higher structural power, soundness, and stoutness, with the same amount of breeding. In a very interesting correspondence between the Chief Secretary for Ireland and Admiral Rous, the gallant admiral said—

“A race-horse which can run three miles is worth £3000—a half-mile horse’s value is £100, which is a sufficient bribe to exercise our ingenuity to produce stout runners.”

And he also observes that—

“It is not to be supposed that a sane person will risk a horse worth £3000 to run four miles under heavy weight for a miserable prize of £100.”

He was aware that Admiral Rous said he did not object to the modern system of handicap. He thought, however, that that system was regretted by almost all who were connected with the turf; and he had reason to believe that the opinion of Admiral Rous had undergone a change, for he had once said that “no man was a greater enemy to handicaps than himself,” and that “the system encouraged trickery of every description.” (Hear, hear.) In the same letter the gallant admiral used one of his very terse and expressive phrases, namely, that racing was “a game of weights.” One thing to be deprecated was the running of horses at a too early age. Lord Derby, speaking in the House of Lords against the Bill of Lord Redesdale, said that, in 1829, the proportion of two-year olds to three-year olds on the turf was as two to eight, and that in 1859 it had increased to eight to seven. The proportion was still increasing, and this spring it had reached rather more than eight and a half to seven. It was beginning to be discovered that they could not with impunity play such tricks with nature as they had been doing for the last half century. The system of Queen’s Plates was most unsatisfactory. The weights were not heavy enough or the distances long enough to please those whose eyes were fixed on having good horses for practical purposes, and not for mere racing. One of the most recent alterations introduced was the allowing three-year-olds to run for Queen’s Plates, and he regretted to

say that the majority of our race-horses disappeared altogether from the turf at the end of their third year, when they were still in a state of infancy. He should not be at all sorry to see the old weights gone back to, though he admitted the difficulty there would be in having such an arrangement with the present system of running horses. When they found that of thirty-eight Queen's Plates run for in England seventeen had been won by one mare, which had six or seven walks over, and that of seventeen Queen's Plates run for in Ireland eight had been won by one animal, he thought they might arrive at the conclusion that some change was required. (Hear, hear.) He rather agreed in Admiral Rous's opinion that we should have free trade in this matter; but if free trade meant an absence of State interference with the rules and regulations of the turf, it also meant an absence of State subsidies. (Hear, hear.) If the Queen's Plates were given, not for a great public object, but for the mere purpose of encouraging sport, the Government ought to give some of the public money as prizes for cricket matches, or as subscriptions towards some of the fox hunts, which were much in want of funds. (Hear, hear.) With regard to prizes, Mr. Dickenson makes these observations:—

“When a prize of 100*l.* was given by the Royal Agricultural Society at Battersea, the best stallions were brought from all parts of the country, even a Derby winner, to whom was awarded the prize. Nevertheless, the object of the Society was not obtained. It is not the winner of the Derby or St. Leger, a horse that will never be taken from his own stable-door, that should come to an Agricultural Show, exhibit himself there, and walk off with the prize; but it is a good, strong, thoroughbred country stallion, that is available for the use of the ordinary mares of the country.”

The fact was, we did not possess horses which were so useful for general purposes as those possessed by our forefathers, and he therefore begged to move that, as the annual grant of sums of money voted by this House for Queen's Plates no longer encourages the breed of good horses, the object for which it was originally given, it should for the future be discontinued.

Mr. Newdegate thought that the hon. member who had just sat down, and who was entitled both by descent and from personal knowledge to offer an opinion on the matter, had done good service in bringing this subject under the notice of the House. (Hear, hear.) He himself had taken a great interest in the breeding of horses for the last twenty-five or twenty-six years, and he thought there was a great change in the character of our horses. He did not, however, believe that was entirely attributable to our racing system. The fact was, some few years ago, before railways were established, none of us would have thought much of riding twenty miles in one ride, but now very few gentlemen took a ride of twenty miles, and unless a man was on his horse for a considerable time, and over a good deal of ground, he never found out what the animal was made of. Railways had greatly lessened the demand for good roadsters, though we still exported a large number. He thought the advice of Admiral Rous, that the distance for Queen's Plates should never be less than three miles, was worthy of consideration; and he was further of opinion that a Queen's Plate should not be given unless the private subscriptions were double or treble the amount of the public contributions. He believed the effect of such a regulation would be the production of a very superior class of racers. The Government might increase the public prize according to the increase in the subscriptions. There was no doubt that the 100*l.* was often won by inferior animals; and Admiral Rous was

right in saying that we should have larger prizes in order to secure the services of first-class horses. (Hear.)

Sir R. Peel said there was no doubt the amount of money now given in Queen's Plates did not afford the same inducements to gentlemen to run their horses as it did when Queen's Plates were first established. That was the practical object for which those plates had been established; but he believed that since they were established the breed of horses in this country had in no way deteriorated. In Ireland there was a want of good stallions; and Admiral Rous fairly put it that if gentlemen would club together in Ireland and this country to keep good stallions, there would be no reason to fear a deterioration of our stock of horses. (Hear, hear.) But he differed from the hon. member for North Warwickshire (Mr. Newdegate) in one particular. That hon. gentleman said that no one would think of riding twenty or thirty miles now. Why he himself, only so late as Saturday last, rode thirty miles, and his horse displayed both ability and endurance. (Hear, hear.) After the ride he probably felt much better than the horse (a laugh), but yesterday the horse came out of the stable perfectly fresh. He believed that his noble friend at the head of the Government was disposed to take long rides (hear, hear), and there were other gentlemen, also, who preferred that sort of exercise to the railways. A sum of about £3500, divided into thirty-six or thirty-eight prizes, was at present given in Queen's Plates; and though it was true that one horse in Ireland and another in England had won a great number of these prizes, and that in some cases there had been a walk over sometimes, that was not a reason for making a great alteration, which would entirely do away with that enjoyment, to maintain which, he thought, public encouragement should be given to race meetings. His noble friend at the head of the Government authorised him to say the Government would consider the matter with the Master of the Horse, who, he believed, regulated the weights. His noble friend did not authorise him to say that the weights would be increased, but that the Government, with the Master of the Horse, would consider whether an alteration might not be made as regarded the weights and distances in races for Queen's Plates, with the view of testing, to a greater extent, the capabilities of the horses. For himself, he did not share the opinion that those heavy weights and great distances were as desirable as some gentlemen appeared to imagine. However, that was to be considered. He hoped his right hon. and gallant relative (General Peel), who was very conversant with the subject, would inform the House whether, in his opinion, the breed of horses in this country had deteriorated. He knew that the Government of France and other Governments had purchased some first-rate sires in this country. The Baron, and other stallions, had been purchased here by the French Government; but in this country we did by private enterprise what in France was done by the direct action of the Government and by other means. (Hear.) In his opinion the English breed of horses was able to compete with any that could be brought against them; but his noble friend at the head of the Government was ready to assure the hon. gentleman that with respect to distance and weight the question would be considered, in order to see whether any improvement could be made in conducting to the objects for which these plates were originally established. (Hear.)

General Peel.—I disagree with the opinion that the breed of horses in this country has deteriorated. I have been for at least forty years a breeder of this class of horses, and, if my authority is worth anything, it is certainly opposed to that of Mr. Dickenson. (Hear, hear.) The hon. member's proposal is that the grant for Queen's Plates should be put an

end to, "as it no longer encourages the breed of good horses." Now, I requested the hon. gentleman to postpone his motion, and I did so because on the 1st of next month there is a show of horses in this town, and I believe there will be three hundred hunters, forty-two thorough-bred horses, with hacks, and horses of every description. I wanted the House to judge for itself whether the breed of horses had fallen off or not. In the Easter vacation I went to see two studs of horses—one belonging to a noble lord who unfortunately did not run first but ran second for the Derby. He had thirty-six horses in training, and I think eighteen of them would have carried me. I don't think I can give better proof of the quality of the present breed of horses. (Hear, hear.) My other visit was paid to the hon. member for Hyde (Baron Rothschild), who possesses as fine a stud of horses as can be seen anywhere. (Hear, hear.) So far from the breed of horses having fallen off, I believe there never was a time when thorough-bred horses were more surely going back to that size and power which formerly distinguished them. (Hear.) Objection is taken to the racing of two-year-olds. And what is proposed? Why, to do away with all the races for old horses, all the weight-for-age races, and to abolish the Queen's Plates. I say it is impossible to tell to what degree these Queen's Plates encourage the breed of horses. You cannot judge of this at all by the number of horses which run for them. After horses have passed their third year, a man is inclined to ask, "What can I do with them?" "Oh!" he thinks, "I can race them for Queen's Plates;" and this attaches a value to these horses which otherwise they would not possess, and without which they might go out of the country. (Hear.) But then it is said, "These horses ought to run longer distances and with heavier weights." Well, I say in reply that Admiral Rous is quite right, and that if you do so you will have none but common hacks running for Queen's Plates. (Hear, hear.) No man would run good horses in four-mile heats with heavy weights for £100. At the same time, horses now-a-days are as capable of running four-mile heats with 10 stone on their backs as they ever were. Well, then, forty years ago I recollect it was thought a miracle when a two-year-old won the Feather Plate at Newmarket. Now nothing else wins. I had much rather that the two-year-olds did not run in these races, but the fact I mention shows how the breed has improved. If the breed of horses has fallen off, buyers must certainly be extraordinary people, because they now give higher prices for thorough-bred horses than they ever gave before. Look at the prices fetched for yearlings at sales during the present year, including that of the Royal studs at Hampton Court. Depend upon it, the public don't give these higher prices for brutes. (Hear, hear.) Among the starters for the last Derby there were four or five of the finest horses that have run for many a year—certainly as fine as have run during my recollection. In my opinion there is nothing in the world like a thorough-bred English horse; and if you tried to produce large coach-horses you certainly would not improve the breed. I recollect the match of 200 miles in ten hours that Mr. Osbaldeston won at Newmarket. Did he choose great hunters or strong half-bred horses? Not at all. Every horse he rode was a thorough-bred, and he did not care what they were; he took any horse which had had any training, and never varied in this choice. He rode each horse four miles, his riding weight being 10 stone. One horse carried him four times. It went 16 miles in 32 minutes, and no half-bred horse would ever have done that. Well, then, hon. members say, "Why should the public give this money for Queen's Plates?" Now, I am prepared to make this proposal to the Government:—They give £3300 a year in Queen's Plates. But they

take £7,000 a year in the tax levied on race-horses. Why put an additional tax on race-horses? Why not let them pay the exact tax that other horses pay? If this is done, owners of race-horses don't want the Queen's plates. (Hear, hear.) There is no class of people who enter more into the free-trade spirit than racing men. We have not sought to shut out foreign horses. We have always upheld free trade for the turf; we have challenged foreign horses to come over here and compete with ours; and we have even given them weight because it was thought that they hardly stood upon equal terms with English horses. (Hear, hear.) It is true that in France at present they have better horses than they used to have, but these horses are every one of them of English bloods. There is not a single country abroad where country-bred horses run—all of them are English bred, and buyers come to England for them. (Hear.) I can only say again that I think the hon. member is quite wrong in holding that our breed of horses has deteriorated, and is still more at fault in the manner in which he seeks to rectify this supposed deterioration—that is to say, by doing away with Queen's Plates, the only races left for old horses to run in. (Hear, hear.) If the Government have determined to reconsider the question of weights and distances, I only hope that they will consult those who are the best judges of what is likely to promote the interests of racing. I should not have ventured to express these opinions if I had any interest in the question; but as I no longer own a horse of any description, I have no personal interest in the matter whatever, except what arises from my great desire to assist in any measure that may improve the breed of English horses. (Hear, hear.)

Mr. Gregory was also of opinion that the breed of horses in this country had not deteriorated, and that it would not be wise to adopt the recommendation of the hon. member. But he wished to call attention to the manner in which Queen's Plates were distributed in his own country. At present fifteen Queen's Plates were run for in Ireland, and out of these eleven were run for at the Curragh, the result of which was that one horse came over for a week or so and swept away nearly all of them. He proposed that three or four of the Queen's Plates should be run for in the provinces. That would be one means of keeping old horses in the country.

Mr. Foljambe called attention to the large export of mares which had taken place during the last twenty or thirty years, and which was still going on. It would be very desirable if some means could be devised for putting a stop to this export, consistently with justice to the breeders and with the principles of free-trade.

Viscount Palmerston.—I entirely agree with my hon. and gallant friend opposite, and differ from those who contend that the breed of English horses has deteriorated. I believe, on the contrary, that the horses bred in this country are better as to size, substance, and endurance, than they ever were. Any man going into a racing stable, and seeing their size, their bone, and substance, must ask himself what he could wish to have better in the shape of a four-legged animal. ("Hear," and a laugh.) The fact is that greater pains are taken now than used to be taken formerly to force on the young horse, and bring him to greater size at two years old than used to be the case. There is one very good test. If the breed were deteriorated, foreigners would not come to England to buy English horses. But the complaint is that more and more persons come every year from different parts of the Continent to buy English horses; and I say that is a proof that the English horse is a good one. (Hear, hear.) The other day I had a deputation from gentlemen connected with the Royal Agricultural Society of Ireland, complaining of

deterioration in the breed of horses there. But in the course of conversation it was stated that from one port in Ireland 5000 horses were shipped in the course of last year. That at least is a proof that the Irish horse is worth buying and worth carrying elsewhere. There can be no doubt that the laws of supply and demand exercise the same influence over the breed of horses as over the manufacture of any other article. If there be a demand, depend upon it that somehow or other there will be an adequate supply. With regard to the notion of the hon. gentleman opposite, I have no objection to say that the question shall be considered by the Master of the Horse in connection with those who are the best judges of the turf, to see whether a return to greater weights and greater distances would be advisable with a view of improving the breed of horses. But I think there is great force in what fell from the hon. and gallant officer, that to abolish prizes applying to horses of greater age than the usual sweepstakes, so far from doing any good, would, on the contrary, do harm. The hon. gentleman will probably not think it necessary to take the sense of the House on this motion.

Mr. P. Wyndham thanked the noble lord for the promise which he had given, and

The motion was then withdrawn.

Veterinary Jurisprudence.

COUNTY COURT, WYMONDHAM.—SATURDAY, JUNE 18TH.

Before J. T. BIRCH, Esq., Judge.

ALLEGED BREACH OF WARRANTY.

JOHN HARDY *v.* WILLIAM DENHAM.

Mr. CARLOS COOPER (instructed by Mr. Jonas Walpole, of Northwold), appeared for the plaintiff; and Mr. Simms Reeve (instructed by Mr. Howlett, of Wymondham), appeared for the defendant.

Mr. Cooper said—This action is brought to recover a sum of £21 as damages resulting from the breach of warranty of a certain mare, which was sold by the defendant to plaintiff, on the 1st of August, 1863. The plaintiff is a merchant and innkeeper, living at Brandon, and defendant is an innkeeper and horse dealer, residing in this place. It appears that plaintiff was, on Saturday, the 1st of August, in Norwich, where he met the defendant, who had the mare in question for sale; the plaintiff ultimately purchased the mare for £32, with a warranty that she was perfectly sound. With regard to that I should think there will be no dispute, because I have a most respectable witness, Mr. Bayes, who was present and heard what passed at the time of the sale. After the mare was sold it was arranged between the plaintiff and defendant that she should be sent to Attleborough on the following day (Sunday). She was accordingly sent to Attleborough on the Sunday, and the plaintiff's man met her there, and he rode her home to Brandon, a distance of about twenty one miles. He was about six hours going that distance, and rode

home quietly as he will tell you. On the following morning the plaintiff and his ostler, named White, took her out of the stable, and she was observed to be lame. The plaintiff, imagining it might have arisen from cracked heels, washed them, and some medicine was given to her. He did not use her until the Wednesday week following, when he had occasion to go to Bury Market. He drove her to Bury and back, and he will tell you that when he commenced his journey she was lame, but that the lameness went off. That was on the 12th of August. On the following morning she was led out of the stable, and she was found to be "grogged." On the 14th of August the plaintiff wrote to the defendant as follows :

"BRANDON, *August 14th.*

"Sir,—I did not say anything to you about the mare, but found she was quite lame on the Monday, from cracked heels as I supposed. I put her into a loose box and gave her some medicine ; they are now quite well. I rode her to Bury on Wednesday, and on Thursday morning had her led out, and find she is quite sore from some cause or other. I call her "groggy." I am very sorry—as I like her very much to drive, but do not like an unsound one, therefore you will oblige by coming on Sunday after her, as soon as possible, as I shall not do any more with her. I shall be in Norwich to-morrow at Mr. Bayes', at a quarter past ten. If you are there you can speak to me,

"Yours truly,
"JOHN HARDY."

I believe no notice was taken of that letter, and shortly after Mr. Walpole wrote a letter to the defendant threatening proceedings, unless reparation were made. Now a letter came in reply to that from Dunham, who said, if Hardy showed him the letter he sent when he requested the warranty, he thought he (Mr. Walpole) would advise him not to proceed with the action. On the 19th September, notice was served on the defendant that she would be sold on the 1st of October, and that he would be held liable for any loss that might arise from that sale. She was sold by auction on the 1st October at Brandon, for £17 10s., to a person of the name of Scott, who sold her to Pearson, and I think Pearson sold her to Booty. A few days after she was purchased by plaintiff, I shall show that she was examined by a veterinary surgeon, who will tell you that he has no doubt whatever, that "grogginess" was the unsoundness of which we complain. He observed that the effect of that "grogginess" was a contraction in the near fore foot. Mr. Worms, a veterinary surgeon of some considerable experience, will, however, tell you that he examined her on the 14th, and found that the contraction had been going on for some considerable time before the 1st August when we bought her. If that be so, I apprehend there can be no question whatever that this mare was unsound at the time we bought her, or that she had the seeds of unsoundness in her, which, would make of course, the defendant liable for a breach of warranty.

His Honour asked how he made out the claim of £26 1s. 6d.

Mr. Cooper explained that 10s. was charged for expenses in taking it from Attleborough to Brandon ; two veterinary surgeons for examining, three guineas. Then they had charged for the keep of the mare from the time of the purchase to the day of the sale, and the difference between the purchase money and the amount for which she sold by auction. In answer to *Mr. Reeve*, he said this action was originally commenced in the superior courts, and he believed the defendant appeared to it, but his client discontinued paying the costs, as he was alarmed at the number of

witnesses he had, and the expense attending the trial at the assizes, which he very wisely discontinued.

Plaintiff said on the 1st of August last year he was in Norwich, and saw defendant, who had a mare for sale, and which he purchased for £32. Mr. Bayes, of Norwich, witnessed the bargain. When trotted out, he said to defendant, "She appears very stiff and sore," and he replied, "If you buy her you will have her sound; there is nothing more the matter with her than a cracked heel." He mentioned that more than once. When the purchase was effected it was agreed that the mare should be sent to Attleborough the following morning, where it was met by Rowan, his man. When brought home she was put into his stable, but when led out the following morning it was seen that she was very lame—indeed so much so, that he ordered her to be led back to the stable, as he was afraid she should fall down on her knees. He had her heels washed, and some medicine given to her, but she continued lame. He first used her in harness on the 12th of August, when he drove her to and from Bury. She went a part of the journey pretty well, but for some distance she ran very sore. On the 13th she was as sore as the first day he saw her. On the 14th he wrote a letter to Mr. Walpole, requesting him to communicate with the defendant. On the 19th he again drove her to Bury, and the mare was very sore on starting for home. He caused a notice to be served on defendant, stating that the mare would be sold on the 1st of October. She was sold to Mr. Scott for £17 10s. The mare was examined by Mr. Leeds, after the first journey to Bury, and by Mr. Worm, veterinary surgeon, on the 14th of November.

Cross-examined.—He wrote to defendant for the warranty, and received an answer that the mare was warranted up to the time of delivery. He did not find out that the mare was unsound, or had cracked heels, when he first drove her. Mr. Leeds certified that the mare was suffering from acute fever in the fore foot; he did not know exactly what he said.

Mr. Reeve.—You don't know what "groggins" is? No, I don't.

You know more about grog?—Yes, I know a little about it. (Laughter.)

Defendant admitted there was a warranty.

Rowan said he rode the mare from Attleborough to Brandon after he received it from defendant's man, and the next morning he found that she was lame.

Cross-examined.—He told his master the same night that there was something the matter with the mare's fore legs.

White also stated that the horse was lame, and that he treated her for cracked heels.

Mr Leeds said he examined the mare on the 20th August and gave a certificate. He observed that the mare was very lame and could scarcely stand when led out of the stable. The mare was suffering from acute fever in the fore feet. He could not say whether it had existed the day before he examined the animal.

Mr. J. S. Worm, V.S., of Watton, said he examined the mare on the 11th of November, and found her lame of the fore feet, and a contraction of the near foot. He considered it a case of navicular disease, which had existed about six weeks or two months. The near foot must have been contracted for six weeks to two months from the state he then saw it. He would not say that the contraction had not existed even six or twelve months. He thought the navicular inflammation must have existed on the 1st of August. It would have taken from two to three months to have produced that contraction.

Mr. S. Reeve said the defendant was simply a nominal defendant, the real defendant being *Mr. Larke*, a gentleman, who would tell him that he had had the mare ever since she was foaled, that she was a six-year old mare, and that he sent her in June last to *Dunham* for the purpose of being gentled, and that then there was nothing the matter with her. He should also prove by other witnesses that the animal was sound. *Dunham*, when he sold the mare, believed that she was perfectly sound, and in reply to the letter received from plaintiff, *Mr. Larke* wrote back to the effect that the mare had only been warranted up to the time of delivery. *Mr. Larke* inferred by that that if he did not like her, to send her back, by all means. *Mr. Larke* was not fond of courts, and going to law; his object was, if the man had any complaint—he knew of none—to get her sent back. On the 20th of August, when *Dunham* got a letter from plaintiff saying the mare had gone unsound, *Mr. Larke* was astonished, and on the 21st of August he got another from *Mr. Walpole*, enclosing the veterinary surgeon's certificate, *Mr. Larke* felt that the man was trying to "do" him, and he had probably had the mare out and used her so that she got acute fever, and then he wanted to turn her back.

Mr. Larke stated that he sent the mare to *Dunham* to be gentled and sold. He had had the mare from the time she was foaled, and she was always sound. She was high mettled. He had several horses, and she could not have been lame while in his possession.

His Honour.—The owner is the very last person to know it: the owner never finds it out.

Mr. Larke.—The horse in use is soon found out.

His Honour.—By some people. The horse is so lame; more lame on the Tuesday than on the Monday; and so little more lame on the Wednesday that the owner would very often go on for months without finding it out. But directly it is sold, the horse gets a few days' rest, and the new purchaser likes to ride his new purchase, and gives it a good rattling along a hard road, and the horse flies all to pieces. That is my experience.

Dunham (the defendant) said the mare was not lame when sold. He did not tell plaintiff that the mare had cracked heels.

Tunnaley, in *Dunham's* employ, a blacksmith, named *March*, who always shod the animal at *Wymondham*, and *Sharpe*, who helped to "gentle" the mare, all said that she was not lame when they had the care or charge of her.

Mr. Wells, veterinary surgeon, of *Norwich*, said if a horse had acute fever in the feet to day, it might have been perfectly sound yesterday. He should think the horse had not acute fever when it was taken to *Norwich* on the 1st of August. Seeing the certificate of the veterinary surgeon describing it as acute fever, it was compatible with the fact that the mare might have been sound on the 1st of August.

Cross-examined.—The certificate of *Mr. Leeds* was not in accordance with *Mr. Worm's* evidence. He should not have given that certificate. Navicular disease might have been present for some time without a person like a shoeing-smith observing it.

By *His Honour*.—Driving a horse suffering from navicular disease thirty miles along a hard road would not produce acute inflammation of the laminae, because it is a law of nature that no two diseases should go on in the system at the same time. In the one case the animal went on the heels, and in the other on the toes. It was likely to come on after a long journey, and particularly after being fresh shod.

Mr. T. Mayes, veterinary surgeon, of *Wymondham*, had never seen

anything the matter with the mare, and Cranness, who rode the animal to Attleborough, the day after the sale, said it was quite sound then.

Mr. Cooper replied, and

His Honour said—It is for the plaintiff, of course, to satisfy me of his whole case. I cannot say that he has satisfied me, or anything like it. The way in which he gave his own evidence was very nearly putting him out of Court. He can remember nothing he is wanted to remember, and I would not put the slightest trust in anything that he has said. His memory was so exceedingly inconvenient for himself, and then I must come to this; no doubt there was a warranty; that is admitted. Was there a breach of it? Was the mare lame on the 1st of August, or were there the seeds of lameness? I do not think that is proved at all. We have it on the authority of *Mr. Wells* and *Mr. Mayes* that the navicular disease and acute fever in the laminae of the feet hardly ever co-exist, and it is very improbable that the inflammation should extend from the navicular bone to the laminae. If that is so, the plaintiff is out of court, because it is clear on the certificate given by *Mr. Leeds* that on the 20th of August the mare was suffering from acute fever in the feet. If she had been suffering from navicular disease, and had had a contracted foot, *Mr. Leeds*, who examined her carefully, could hardly have failed to perceive it, and as a matter of course put that in his certificate, which he has not done. It seems to me that all the lameness that has been spoken of might arise, and probably did arise, after she came into the possession of the plaintiff, and I think his own conduct rather tends to show that was the case. He could have shown her to any veterinary surgeon on the Monday or during that week, although the man had told him, as his man said, she came home lame from Attleborough, and although she was so lame when she came out of the stable, he never called in any veterinary surgeon to make any inquiries. His judgment must be for the defendant.—*Norwich Mercury*.

MISCELLANEA.

PERSONAL SAFETY OF THE ARAB FARRIER.

GENERAL DAUMAS, in his work 'The Horses of the Sahara,' states that perhaps nothing exemplifies the high value put upon a horse by these wandering people so much as this fact, that, although delighting in war and bloodshed, they never kill a farrier; they would as soon think of poisoning a well; he has only to alight, and imitate with the two corners of his burnous—raising and depressing them by turns—the movement of the bellows, and his life is held as sacred as that of a herald or a priest among more civilised nations. On the other hand, if a farrier chance to grow rich, a quarrel is often fastened upon him, and a portion of his wealth taken away, and held in hostage, to prevent so desirable a neighbour quitting the district.

Contrary to the accepted opinion, the Arabs shoe their horses, although they take the shoes off in the spring. These are very light, of a soft, pliant metal, and are put on cold.

OBITUARY.

WE ought to have recorded the death of Professor Miller, of Edinburgh, in our last number, but press of matter prevented its insertion. In the medical and scientific world he was well known, and his loss has been by our contemporaries much deplored. He was a man highly respected and much esteemed for his work's sake, he being a good man as well as professionally great. One speaking of him, says, "We are on a journey—a journey through the desert. Companions are dropping day by day at our side. We are sad when we suffer bereavements, and many, both of the rich and the poor, will sorely miss the beloved physician. One sentence of the Master fully describes the character of the servant—'Love one another as I have loved you.' This is the key-note of his life since he was led into the peace of God. A great necessity lay upon his heart always—the necessity of doing good lay upon his heart as the flowing stream lies on the mill-wheel, compelling it to go round; and that weight—that commanding motive of life—was the mercy of God through Christ to his own soul. There was an amazing activity in his habits. He did not know repose. The rest which he eloquently vindicated for others he could not much enjoy himself; yet continuous activity did not, in his case, ally itself with austerity. His life was eminently cheerful. His work was the work of a strong man; his manner was like the playfulness of a child before care has begun to weigh upon the spirit."

It is, perhaps, on account of our own loss that we sincerely regret the removal hence of Professor Miller. He was associated with us as a member of the Scotch section of the Examining Board. One of his colleagues thus writes to us:—
 "I know of no circumstance which is so calculated to cast a gloom over our Scotch Examining Board as this. Professor Miller was the most affable, gentlemanly, and agreeable man I ever knew, and I am sure his place at the board will not be easily filled."

Thus death knows no distinction. He smites at a touch the strong man, and bears him away; and the earnest and useful worker is unexpectedly taken from us. Ever will it be that throughout life much that is mysterious and beyond our comprehension will take place, so variously are all things wrought. Still all is right. 'Tis well, too,

"To feel, although no tongue can prove,
 That every cloud, that spreads above
 And veileth love, itself is love."

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Communications and Cases.

OBSERVATIONS ON CASTRATION BY TORSION.

By W. ERNES, M.R.C.V.S., London.

ON a recent visit to Paris I saw the above-named operation performed by M. Rossignol, Jun., on an old stallion belonging to the Omnibus company, which had become so vicious that it was no longer possible to work him; hence the reason for the operation. The principal instruments for the operation consisted of two large-sized forceps, one straight and the other curved, provided with a spring to fix them when applied. All being ready, the horse was brought out by the only man who could approach him, and, though he was blindfolded, it was with the greatest possible difficulty that the hobbles were put on, and only so by deceiving him, by the smiths who were in the habit of shoeing him holding up the leg and pretending to take off the shoe—an operation to which he seemed to have no objection. The hobbles on, he was soon thrown on his left side, and, being duly secured with the “side line,” M. Rossignol commenced the operation by making an incision into the scrotum about eight centimètres in length, which laid bare the left testicle. This done, he drew out the testicle, and fixed his straight forceps on the cord, as close to the inguinal ring as possible. The forceps, being made secure with the spring, were held by an assistant, while the operator fixed the torsion forceps on the cord, about two and a half centimètres below the former, and just above the epididymis. By twisting the cord the testicle was soon severed, which being done, he removed the straight forceps,

when the remainder of the cord entered the scrotum. There was but little hæmorrhage. The other testicle was operated on in the same manner. The whole operation, from the time the horse was fixed, occupied somewhat less than ten minutes.

I left Paris the next day, and returned in about three weeks, when I found the horse not only doing well, but ready to go to work, and quite cured of his viciousness. I am informed that torsion is now the general mode by which castration is performed in France, and that the operation (which certainly would appear to be less painful than any other, for the animal did not struggle once during the twisting) is also more successful. There is, I am also informed, very little swelling consequent on the operation.

Care should be taken to make the incision ample, so as to prevent it closing too soon, in which case an accumulation of pus in the scrotum is the consequence. This, however, is easily removed by introducing the finger into the wound.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from p. 459.)

IT will be remembered that, in a former number of this Journal, I brought under notice the general botanical characters by which the natural order *Ranunculaceæ* is distinguished, and in my last communication furnished the description of one of the most important plants belonging to the order, viz., the *Aconitum napellus*. The very interesting case recorded by Mr. Flower, M.R.C.V.S., of Derby, in the *Veterinarian* for July, in which the death of three heifers was caused by the *Ranunculus ficaria*, will afford a favorable opportunity of bringing under notice another variety of plants belonging to the same natural order, and from which it derives its name, viz., the ranunculus or crowfoot. Space will not permit me to give the botanical characters of all the varieties of the ranunculus; therefore the following general observations, with a more detailed description of two or three of the varieties most commonly met with, will give an insight into the characters of them all. The different species of crowfoot or buttercup are found growing in most parts of Europe and the temperate parts of Asia. Several of them

are cultivated as ornamental plants, but the great majority are found growing wild in pastures or floating in streams. In a natural state they prefer moist situations; hence the origin of the name *ranunculus*, from "rana," a frog, and "colo," to dwell. They all possess, more or less, an acrid property, which is not of a fixed nature, being entirely dissipated by heat and drying. The following is a brief description of three of the varieties most commonly met with.

"*Ranunculus acris* (Crowfoot).—*Sepals*, 5. *Petals*, the same number, with a nectariferous scale at the base. *Stem*, many flowered. *Peduncles*, tapering. *Carpels*, lenticular, compressed, bordered, with a beak which is rather curved, and much shorter than the carpel. *Receptacle*, smooth. *Root-leaves*, divided in a palmate manner. The *segments* somewhat lozenge-shaped, cut, and sharply toothed. The *leaves of the stem* the same shape, the uppermost divided into three linear segments." (Lindley.)

The chief botanical characters by which this variety may be distinguished are the spreading calyx, the round and even flower-stem, and the peculiarity of the leaves. Nearly every one is familiar with this indigenous perennial plant, which is found growing in great abundance in our meadows and moist pastures, its flowers, which are of a bright yellow, appearing in June and July. It possesses all the acrid properties peculiar to the species:—"On being applied to the skin it excites itching, redness, and even produces blisters, tumefaction, and ulceration of the part."

Pereira says that "it has been applied as a rubefacient and epispastic, but is far inferior to cantharides and mustard, on account of the uncertainty of its operation."

"*Ranunculus bulbosus* (Bulbous Crowfoot).—*Peduncles*, furrowed. *Sepals*, 5, reflexed. *Petals*, 5, with a nectariferous scale at the base. *Carpels*, lenticular, compressed, bordered, smooth. *Stem*, bulbous at the base. *Root-leaves*, ternate or biternate. The *leaflets* trifoid, cut, and toothed." (Lindley.)

This plant is distinguished from the *Ranunculus acris* by its stem being bulbous at the base, by its furrowed flower-stem and reflexed calyx. It resembles the *Ranunculus acris* in being an indigenous plant, found growing in meadows and pastures, flowering in June and July, and possessing similar acrid properties. The attention of the profession was directed to this variety of the *ranunculus* in the *Veterinarian* for April, 1860, in reference to the death of several animals in the practice of Mr. Wallis, M.R.C.V.S.; and although in this instance I am inclined to think the death of the animals was not caused by the *Ranunculus bulbosus*, but in some measure was due

to the causes pointed out by Professor Varnell, still the case presents many features of interest, especially in connection with the class of plants now under consideration, the effects of which upon animals are so little understood.

(To be continued.)

TREATMENT OF OPEN JOINT BY METALLIC SUTURE.

By WM. HALL, V.S. 6th Dragoon Guards, Aldershot.

AN irritable thorough-bred horse received a punctured wound, about an inch long, at the antero-lateral part of the *true* hock-joint, from which the synovia flowed in a stream down the leg, and even spurted a little when the leg was moved.

The patient, when first seen, was found to have the limb much swollen and very painful. He was suffering greatly from inflammatory fever; his mouth was hot, pulse 70, and his countenance very anxious. He was also bedewed with perspiration, and was very restless.

The wound was pinned up with common pins, and drawn closely together with ligatures, over which a little fine tow was neatly lapped. Aloës Barb. ʒv were administered, his head tied up, and the joint frequently bathed with aconite lotion.

On the following day the swelling had abated considerably, and the horse stood pretty firmly on his leg. The purgative was acting, and the febrile symptoms had nearly disappeared. Nitrated water was ordered in the evening and during the three following days, after which the head was let down.

All medicine was now discontinued. The sutures were allowed to drop out. In one week the patient had returned to his work, with the joint the natural size, and the wound healed by the "first intention," leaving only a slight cicatrix.

LAMINITIS AND NAVICULAR DISEASE.

Letter from Mr. THOS. GREAVES, M.R.C.V.S., Manchester,
to Mr. W. WILLIAMS, V.S., Bradford.

MY DEAR SIR,—Since hearing the very excellent and instructive paper upon “Laminitis and Navicular Disease” read by Mr. Secker, of Knaresborough, and the thoroughly practical discussion which followed upon it, at the last meeting of the Yorkshire Veterinary Medical Society, I have felt a deeper interest, if possible, in the subject, and a stronger desire to know more about it. I am persuaded there is yet much to learn with reference to these diseases, and with that object in view I beg leave to suggest that you and I dispassionately and deliberately examine the subject. This proposition I make with every feeling and sentiment of respect for you, more especially as I find we entertain different opinions upon these diseases. By reasoning these views out to their legitimate source, some light may possibly be thrown upon these affections, and sound principles advanced.

LAMINITIS.

The opinion I entertain upon the subject of laminitis is that, in by far the greater number of cases, there exists in the animal so affected a congenital tendency to the disease, and that this tendency has been gradually assuming a condition more and more favorable to lameness for some time before actual lameness shows itself; that the economy and condition of the bony structures have been undergoing a peculiar change, and this too in the absence of any active inflammation, rather, indeed, a sort of atrophy. We know there are diseases which may go on in bone for a considerable length of time without producing much, if any, suffering; but which, on arriving at a certain stage or condition, from some simple exciting cause, will give rise to most severe suffering. Such is the case in diseases of the meretricious type, *mollities* or *fragilitas ossium*, &c., the causes of which are surrounded with much obscurity, but which are supposed to depend upon some peculiar state of the constitution, such as a defective supply of phosphate of lime to the bony texture, or, it may be, an inordinate absorption of this material, causing the bone to lose much of its natural firmness. Bone in this condition is unable to sustain the superincumbent

weight. Should such an alteration or change take place in the coffin bone, it would thereby become more attenuated at its edges and bulging on its under surface, or pumiced, and all this irrespective of any disease going on in the laminae. Mr. Secker, in fact, in his essay remarks—"The subject of laminitis has been observed to go shuffling and getting gradually worse for some time previous to the attack."

In my papers in the *Veterinarian* for 1855 I term this "the passive stage," and it is in this particular condition that any little extra circumstance, such as a change in keep, or even a dose of cathartic medicine, the act of shoeing, some extra knocking about, or even standing still a little too long in the stable—anything, in fact—is sufficient to produce the active stage, as unmistakably as is a twange of the gout or toothache in the human being.

Have we not constant proof of various tissues and organs degenerating? And are we to suppose that the plantar organs are wholly exempt from the law which we see almost every other tissue in the animal economy to be subservient to? How often, do we have evidence that the brain is undergoing a process of degeneracy—softening—and this, too, in the man of apparently strong mind, and who was certainly clear-headed enough up to a particular age? The exact period of such a change will doubtless very much depend upon the individual being exposed to favorable or to unfavorable circumstances. Is it not true that the subject of such a disease is observed to become by degrees rather crotchety or eccentric, and often that some slight or sudden shock to the nervous system develops complete imbecility or unsoundness of mind. So also with active laminitis. How often also do we see a man in easy circumstances, who has never passed through trials, have the functions of his brain impaired, he by degrees becoming of unsound mind; whilst another contends with every kind of trying circumstance, sustains the most violent shocks from the most dire calamities, but still his reason firmly retains her seat? How is this? It seems to me to be simply attributable to a difference in the constitutional tendency.

Illustrative of the same point, we have other diseases—degeneracy or softening of the liver, ramollissement, degeneracy or wasting of the lungs, phthisis, &c. In each particular subject, liable to these complaints, a specific or special tendency exists, which may be described as an irresistible, uncontrollable diathesis, continually drifting towards one destination in each individual. For instance, the true subject of laminitis is almost certain to be exempt from any

tendency to the formation of bone-spavin, side-bones, ring-bones, splint, &c.

You may possibly insist that bony structures are entirely and altogether different, and are not liable to the same laws in the animal economy as the soft tissues. To such objection I reply that we have no right to assume such to be the case. I believe bony structures are liable to morbid affections equally with other tissues. Is not each organ in itself—in fact, every tissue in the whole body, unless defectively formed in the womb—exquisitely and perfectly adapted for the duty or function it has to perform? Both hard and soft tissues are, when in health, perfect in themselves; the one not more so than the other. Each is equally subject to decay and reparation; and whenever normal action is perverted, or nature is overtaxed, the delicately fine, natural susceptibilities are acted upon and interfered with in the one case as in the other. Nature suffers; her functions and actions are thwarted; reproduction is retarded, and after a while that organ, whichever it may be, becomes unequal to the task, and the result is lameness if it happens to be in the plantar organ, or imbecility if it happens to be in the brain. In both cases, properly speaking, it is the language of pain, or the silent expression of nature's vigilance.

Again. We see that one horse becomes affected with laminitis without his feet having been subjected to much, if any, stress or exertion; whilst another is worked most unmercifully, and his feet neglected in every imaginable way, without laminitis supervening. How is this? It is simply attributable to the difference of constitutional tendency or condition of the bones. I would here remark that it is, generally speaking, the low-stepper, the shuffling goer, that is the victim of laminitis. I feel convinced in my own mind that this disease dates its real commencement in most, if not in all, cases, long antecedent to the time usually ascribed to it; and I am satisfied, from many *post-mortem* investigations, that we frequently have cases that would be called by all experienced and practical men laminitis where the laminæ are not, nor ever have been at any antecedent date, actually inflamed, but where the internal structure of the coffin bone has been for some time undergoing a change—"mollities." You may possibly advance, as an argument to strengthen your view, the fact of the augmented thickness of horn from the commencement of active disease; but this, to my mind, is not conclusive evidence. It may demonstrate by contrast a previous unnatural, thin, attenuated growth of horn.

NAVICULAR DISEASE.

This disease also, in my opinion, not unfrequently arises from congenital predisposition. Generally speaking, it is the high-stepper, the good goer, that becomes the victim of the affection. It is a fact well attested that navicular disease as frequently develops itself in feet with wide frogs and bulbous heels, or in shallow heels and flattish feet, as in narrow, upright feet. Contraction, so far from being a necessary indication of the disease, follows almost as a matter of certainty upon any lameness, wherever situated, which necessitates an absence of the natural pressure and weight being thrown upon the heels of the foot. This is clearly proved; for after neurotomy, the pain being removed, and the weight being again thrown upon the heels, the foot expands, notwithstanding that the disease is still going on in it. I am satisfied, from numerous *post-mortem* examinations, that there are numbers of cases of lameness that would be pronounced to be due to chronic navicular disease by practical men, in which neither the navicular ligaments nor true navicular joint—the foot-joint capsule—are diseased, nor have they been at any antecedent period actively inflamed, but where the internal structure of the navicular bone has been absorbed and become hollow. The change that has been going on is “fragilitas,” a state differing very greatly from mollities, since we nearly always find a great proneness to the formation of exostosis, spavins, and spents, &c. &c., in animals of this special tendency. I have known foals born of defective parents in whom this condition was so strongly developed that all men would at once pronounce them to be affected with navicular disease, and such lamenesses were permanent.

I am persuaded that the structure of the bones is in a defective state, and that, if their true condition could be fully ascertained, the animal would, to all intents and purposes, be pronounced unsound, and this, too, probably many weeks or even months previous to lameness showing itself. Often at most it has been observed that he has been guilty of dropping occasionally for some time before he showed lameness. Is it not notorious that a horse shall show lameness for the first time the day after, or the day but one after, he has been newly shod, he having been standing idle for some time previously, though no fault can in any way be attached to the shoeing? Is it not equally notorious that a horse shall show lameness for the first time the day after, or day but one after, he has been “ramped about” at a fair? I would here remark

that it is quite possible a slight lameness may exist at the time, or even before going to the fair, and yet the breeder or dealer be quite unconscious of it. Neither of them are professional men, nor, perhaps, expert in detecting lameness, or they may not have had the horse run out upon the hard pavement to test him. Indeed such a thought as his being lame had never once occurred to their minds; therefore there was no necessity for such a procedure.

Now, what other inference is deducible but the one I am contending for, viz., that the parts had sustained or acquired a morbid condition, and had become susceptible to yield, and, having yielded, pain is the result; troublesome, obstinate tenderness, and too often, alas! permanent lameness? The veterinary surgeon, on his first visit, being told that the horse was never lame before, does not feel justified in pronouncing definitely upon the nature of the case. The lameness has, also, no precise or clear cause; there is nothing apparently to account for it; but after bleeding, purging, poulticing, &c. &c., he finds that the lameness continues stationary. Had it been merely of a simple kind and altogether recent, it is quite reasonable to conclude that it would have subsided with such treatment. The practitioner may have had some misgivings in his own mind, which are now confirmed and proved to be facts. He now speaks out, and calls it "chronic navicular disease;" for, lo! and behold! the other foot is also showing suspicious symptoms of fixed lameness. If he be a man of a candid and enlightened mind, it is not incompatible with common sense, honesty, and experience, for him to say, "These parts must of necessity have been for some time getting into a state of disease, but that such disease was in an obscure, latent state, and not sufficient to produce lameness. Now, however, from one or other of the above-stated causes, or from some other similar excitement, the disease has assumed a more active form." In the majority of these cases the practitioner will come out of the contest more in the character of the vanquished than the victor.

I am, dear Sir,

Yours most truly,

THOMAS GREAVES.

FARRIERS' STRIKE, OR A VETERINARY MEDICAL ASSOCIATION ON ITS TRIAL.

By THOMAS GREAVES, M.R.C.V.S. and P.L.V.M.A.,
Manchester.

IF any facts were wanting to illustrate the practical usefulness of veterinary associations, and their great value to the practitioner, these have unequivocally been demonstrated in Manchester during the late strike of the shoeing smiths for an advance of wages. The President of the "Farriers' Society," with three of its members, forming a deputation, waited upon the President of the "Lancashire Veterinary Medical Association" on the 4th July, for the purpose of ascertaining the practicability of getting an advance of wages. The president endeavoured to convince them that their contemplated demand was unreasonable; but in vain. This interview led to a special meeting of the association being immediately convened.

The great importance of complete organization must be obvious to every one, in enabling a body of men to act at a moment's notice on any pressing emergency. Each member becomes intimately acquainted with the views and private opinions of his fellow-members; thus the association assumes the character of one family, nay, they act with the definiteness of one man. The association had several interviews with deputations from the Farriers' Society, but they were unavailing, since the society was deaf to all reason. They could not be made to understand that in the present state of the trade of Manchester it would be wrong to attempt to raise the price of shoeing, neither would they be satisfied when reminded that the wages, at the rate now paid, absorbed nearly the entire profits. Three fourths of the horses shod in Manchester are charged 3*s.* 6*d.* per set, some of them less than that sum, and some few 4*s.* per set. The wages are 26*s.* per week for a doorman, and 30*s.*, 32*s.*, and 34*s.* per week for a fireman. The wages alone amount to 2*s.* 1½*d.* per set of shoes, and the whole expenses are as follows:

For Cart Horses, per Set.

	<i>s.</i>	<i>d.</i>
Fireman making 2 pairs	0	5½
Fireman fitting 2 pairs	0	5½
2 Doormen striking for 2 pairs	0	8½
1 Doorman knocking on	0	6½
16 lb of Iron, at 12 <i>s.</i> per cwt.	1	8½
40 Nails, 1 lb, No 15's, at 7 <i>s.</i> 6 <i>d.</i> per thousand	0	6
		<hr/>
	4	3¾
Set off 4 old shoes, 11 lb, at 4 <i>s.</i> per cwt.	0	4
		<hr/>
	3	11¾

For Saddle Horses, per Set.

	s.	d.
Fireman making 2 pairs	0	5 $\frac{1}{4}$
Fireman fitting 2 pairs	0	5 $\frac{1}{4}$
1 Doorman striking for 2 pairs	0	4 $\frac{1}{4}$
1 Doorman knocking on	0	6 $\frac{1}{2}$
4 lb of Iron, at 12s. per cwt.	0	5
30 Nails, $\frac{1}{4}$ lb, No. 8's, at 4s. 6d. per thousand	0	1 $\frac{1}{2}$
		<hr/>
	2	3 $\frac{3}{4}$
Set off 4 old shoes, 3 lb, at 4s. per cwt.	0	1 $\frac{1}{4}$
		<hr/>
	2	2 $\frac{1}{2}$

To the above there must be added something for rasps, slack, rent, wear and tear of tools, book-keeping, collecting, bad debts, interest on capital, &c. The above calculation has been made with the greatest care, and its correctness is vouched for; it is, therefore, self-evident that the men's demands, viz., 2s. per man per week in addition, could not be complied with, and, it being resisted, the withdrawal of every man from each veterinary establishment was at once determined on, and on the 25th of July the turnout was complete and general. The turnouts have conducted the strike in the most orderly and systematic manner, having full confidence in their perfect combination, coupled with a resolute determination well worthy a better cause. They have had recourse to every legitimate expedient that skill and cunning could devise. They had their scouts or pickets formally placed and replaced by regular relays of men, at every railway station, to intercept every shoeing smith, and to watch every avenue leading to each of our establishments, so as almost effectually to preclude the possibility of a stray applicant when reaching his destination. So industrious and persistent were these turnouts, so vigilantly was this picket duty performed, that it is said fifty smiths were intercepted during seven days; they were either terrified or persuaded to return to their homes. Many of the largest establishments had not a single applicant for work during an entire week, and in one forge alone, where the men were in the habit of shoeing thirty, forty, and even fifty horses per day, there was a sudden and perfect cessation of work, not a single horse being shod for the space of an entire week. At one time it appeared inevitable that the masters must succumb. The struggle was a legitimate trial of strength, and but for this association the masters must most certainly have been crushed. There is a large town within an hour's

ride from here where the disunion of the veterinary surgeons is an element of weakness; the men are not slow to take advantage of it, and the masters are obliged to comply with every demand made, however unreasonable or unjust.

During this time the veterinary surgeons were making great exertions to get men; they advertised in nearly every leading paper in England, Ireland, and Scotland; they had the town and neighbourhood freely posted with large handbills, and they scoured the whole country for twenty or thirty miles round. In almost every town and village in England their cry for help went forth, and this cry was nobly responded to; still scarcely any help reached them. By degrees, however, one artisan after another managed to run the blockade, and got safely landed, safely housed, and protected by a police-officer at the entrance of each establishment, to prevent any turnout gaining access to persuade or intimidate him. By degrees these men accumulated in numbers, in spite of every obstacle, for the indomitable perseverance and indefatigable activity of the masters overcame every obstacle. Our employers, to a man, took our side, and withheld their work during the crisis. Nor will this recital diminish in its interest as it draws to a close; for nothing could exceed the unanimity and concord that existed amongst us; calling upon and encouraging each other with words full of hope and cheerfulness, zealously helping each other in every way we possibly could. We were animated by the very best spirit and feeling and a singleness of purpose, notwithstanding many well-planned and cunningly devised attempts to sow discord and distrust and excite suspicion amongst us; but fortunately our previous meetings had taught us to respect and esteem one another; we felt fortified, therefore, in our perfect reliance upon each other. Nothing could shake for one moment the confidence we had in one another's honour and integrity. We vied in assisting each other as brothers in adversity ought to do; we felt we had our common interest at stake, and were decided in our action. The turnouts, observing this, and seeing the utter futility and the perfect hopelessness of every attempt to cause dissatisfaction or defection in our ranks, together with the fact that some of the vacancies were getting filled up, some of the wiser among them were led to meditate upon the state of affairs, and on the ninth day of the strike the whole of the men in one of the principal establishments resumed work at the old rate of wages, and resigned their membership of the society. This at once broke their organization. Thus encouraged, many of the more thoughtful followed their example, and one after another withdrew from the society.

The masters could have their choice of the men, as each offered to comply with the conditions, and they could now refuse employment to those who had been the chief instigators of this distressing strike. The society, which had enjoyed a brief hour of triumph, was hurled to the ground, having enacted and enforced its arbitrary and tyrannical laws. The system that had existed and been paramount for generations ceased to exist. The ugly hydra-headed monster, with assistance from an allied society, paid its votaries one week's allowance, viz., 15*s.* for married members and 12*s.* for single men; but when the second week's pay-day came it was found there was not a sixpence in the exchequer for its silly and disappointed victims, and consequently there it lay prostrate, despised, forsaken. It will be unable to again interfere with willing and contented labour. It will be unable again to silence the music of the anvil or the ring of a thousand hammers. I take this result as an indication of the onward progress in our profession, and I hold it up as an example to other associations throughout the land.

Many noble acts of devotion could be related of the masters sharing their stock of shoes with each other, and dividing their men with their less fortunate brethren. How also they had to marshal their men to and from their homes, piloting them through pickets. Throughout the whole of this severe trial it was truly refreshing to witness the perfect harmony and good faith which prevailed amongst us. Having passed unscathed through this ordeal, we have learned to feel a deeper and more sincere regard for one another, we feel more closely cemented together, and the respect and esteem we did entertain before the strike has now assumed a purer nature.

Let us for one moment contrast with this picture the state of things that would have existed had no association been in existence. We should have been isolated from one another, consequent upon the rivalry and jealousies inherent in the profession; the ordinary feeling of shyness, reserve, and suspicion, would have been intensified, and kept us apart; the views, opinions, and resolves, of the one would be wholly unknown to the other; we should have been reluctant to open our minds to one another, or to trust one another. Instead of unanimity there would have been diversity of interest, intriguing, animosities, unfounded and unconscious enmities, embittering probably a whole life; and, being thus disunited, each acting independently of his fellow, the men could easily insinuate, misrepresent, victimise, and the masters one after another would have been forced to succumb to the demands,

however unjust or unreasonable. This result must inevitably have followed. And let us further look at the sequel. The practitioner struggling on for a few years, it may be for a mere pittance, becomes reduced to penury, his debts increase, and, finding he cannot pay them, he is, as a *dernier ressort*, obliged to defraud honest tradesmen by offering a composition. All this misery and injustice being clearly traceable to and resulting from the want of a better understanding amongst the body of the profession in the town in which he lives.

CASE OF RETENTION OF URINE CAUSED BY THE IMPACTION OF A CALCULUS WITHIN THE URETHRAL CANAL OF A HORSE.

By THOS. BURRELL, Jun., M.R.C.V.S., London.

ON the evening of the 13th of June last I was requested to attend a gray gelding, the property of a job-master, who informed me that for the last two years the horse had been troubled with a difficulty in voiding his urine.

On the day preceding that of my attendance he was observed to be making frequent and painful efforts to urinate, which continued to increase until the evening, when a farrier was called in to attend him, who certainly did *his* utmost to relieve the patient, if we may judge by the multiplicity of remedial agents had recourse to.

I found the poor animal in a most distressing state, and giving every evidence of extreme pain. The respiration was accelerated, the pulse 80 and wiry, and the countenance anxious. Tremors of the muscles of the flanks were present, and these parts were bedewed also with perspiration. He was straining violently from time to time to void his urine, and in these efforts a small quantity was expelled.

An examination per rectum showed the bladder to be greatly distended, which fact, coupled with the information received from the owner, led me to believe that I had to deal with a case of stone in the neck of the bladder.

With a view of affording immediate relief, I attempted to introduce the catheter, but was unable to pass it more than about twelve inches up the urethra, owing to the presence of a calculus, which I subsequently found to be firmly impacted in this part of the canal. Having withdrawn the catheter and exerted the penis I could readily feel the stone.

I endeavoured, though ineffectually, to dislodge it by forcing it downwards, but, failing in this, I determined to extract it by cutting down upon the urethra. Having secured the patient as safely as the standing position would allow, with the aid of an assistant to keep the penis firmly fixed, I was enabled—after some difficulty, arising chiefly from the animal's struggles—to effect the extraction of the calculus. This done, a copious flow of urine, both from the ordinary and the artificial outlets, took place. The flow, however, became suddenly arrested, which determined me to pass the catheter, and on doing this I drew off a still larger quantity of urine.

On the following morning, wishing, if possible, to ascertain upon what cause the sudden arrestation of the flow of urine after the removal of the calculus depended, I made another examination of the bladder, but was unable to detect anything which would satisfactorily account for it. On the next day, however, I removed two smaller calculi, which presented themselves at the wound in the urethra.

The patient was by this time free from pain, and tranquil. He urinated freely from both outlets, and continued to do so with a gradual decrease in the quantity flowing from the wound till the fourteenth day after the operation. By this date all the urine passed by the natural outlet, unaccompanied by any inconvenience to the animal, which had now returned to his usual work.

The stone is heart-shaped, measuring an inch and a half in length by an inch in breadth across the part corresponding to the base of the heart. It is extremely rough and irregular in outline. I unfortunately lost the two smaller stones, which were removed on the second day.

There was considerable swelling about the perinæum for two or three days, owing, as I suppose, to injuries inflicted on the lining membrane of the urethra by the stone in its descent.

I have made the foregoing communication as brief as possible, as I was not desirous of trespassing on your valuable space by giving any detailed account of the treatment pursued subsequent to the operation. Suffice to say it was extremely simple. If, however, I have omitted anything which your readers may deem important, I shall be only happy to supply any additional information at any future period.

RUPTURE OF THE RUMEN OF A STEER FROM ACCIDENT.

By T. J. POULTON, Veterinary Student.

ON the 16th of July, 1863, my attention was directed to a young steer, the property of a small farmer living in my neighbourhood. The owner stated that for the last day or two the animal had appeared dull, was off his feed, and was evidently becoming more and more ill.

About half an hour subsequently, on my visiting the animal, and going into the close where he was placed, the first thing that I noticed was the pendent state of the head. His back also was arched, and he had a great reluctance to move, and, when made to do so, a peculiar hitching of the left hind leg took place. On making a closer view of the animal, I found a blanched state of the visible mucous membranes; pulse scarcely perceptible; muzzle dry; extremities cold; coat staring; skin sticking to the ribs, with here and there patches of sweat over the body. He refused all food, and the condition of the anus and hinder parts showed that the fæces had not been recently passed. On my remarking on this, the owner informed me that for the last two or three days he had not observed the animal to void any feculent matter.

A neighbouring gentleman, who came into the close at this time, informed me that three days ago the horse which was grazing with the steer kicked it on the left side—to use his own expression, “up in the air.” From this it seemed probable that the kick had caused the incapability of the animal to use the left hind limb in a natural manner. On manipulation, however, he evinced no pain, nor was there any perceptible indication of external injury. On examining the rectum with the hand I drew from it a few hardened fæces covered with frothy mucus.

My diagnosis of the case was that a rupture of some of the abdominal viscera existed, and my prognosis was necessarily unfavorable. The owner, however, was very desirous of my doing something, and, as such, I gave a slight aperient combined with a diffusible stimulant. I promised also to call and see the animal again in the evening. The strictest quietude was enjoined, and I had the animal placed under the most favorable circumstances for carrying out this object. I likewise desired that all food should be withheld.

About five o'clock p.m., a messenger was sent to inform me that the patient was evidently much worse, and that the owner feared, unless some relief was soon obtained, death would quickly take place. On my visit I found the animal down, and all the symptoms greatly aggravated. The respiration was difficult, and at intervals eructations of gaseous matter from the rumen took place, which were accompanied with the escape of fluid ingesta from the nostrils. Feeling satisfied as to the correctness of my former diagnosis, and that no medical treatment could be of any avail; I waited for about a quarter of an hour, when death closed the scene.

Post-mortem examination.—The whole of the abdominal cavity was found to be filled with fluid ingesta, which had escaped from a rupture of the rumen. The peritoneum was inflamed throughout. With these exceptions no other disease was to be detected.

A SECOND CASE OF RUPTURE OF THE RUMEN.

By the Same.

June 28th, 1864, I was summoned to attend a young heifer, which a day or two before had been turned into a field of clover, and greatly engorged her rumen by ravenously partaking of it. On the ordinary symptoms of tympanitis showing themselves, the man in charge, being one of those who can never avoid giving their opinion and advice, and backing these up by skilful (?) attention to the animal, drove the heifer furiously about the pasture, when, to use his expression, "she seemed to get well in a moment." Shortly afterwards, however, the animal appeared dull and listless, but still no notice was taken of these and other symptoms which supervened until the morning of the third day afterwards, when fluid ingesta was vomited by the nostrils. It was in consequence of this that I was sent for, and on my arrival I found the animal *in articulo mortis*. She only lived ten minutes after I first saw her.

On making a *post mortem* examination I found a rupture of the rumen, through which nearly the whole of the ingesta had escaped into the abdominal cavity.

I may remark that I have not forwarded these cases from any particular novelty attaching to them, for there are many

of a similar kind which will be found in the pages of the *Veterinarian*, but to record the singular fact that two should have occurred in my practice within a year.

LETTER TO THE EDITORS
FROM MR. W. WILLIAMS, V.S.

BRADFORD; *Aug.* 10, 1864.

GENTLEMEN,—In your last number you were pleased to make the following observations on our medical associations, after quoting from Mr. Greaves' letter in the previous *Veterinarian*, "first let the membership of the different veterinary societies be restricted to those who are members of the body corporate. We prefer this, and it may be a somewhat narrow stand-point to the broader one of those who have graduated at any of the recognised schools, because it adds status to the profession." Let me state that Mr. Greaves advocates the broader stand-point, and I think the remarks had better never have been made, as they are undoubtedly calculated to do harm, by destroying the harmony that is now existing amongst the members of the various societies. As a graduate of the Edinburgh Veterinary College, possessing its diploma, and not desiring at present to possess any other, and having taken a pretty active part in the formation of the Yorkshire Veterinary Society, these remarks, ill-calculated as they are as to consequences, come home to myself, and I challenge you to give proof of how graduates of the Edinburgh Veterinary College detract from the status of these societies. Mr. Greaves, in his letter, mentions an uncourteous, bigoted man, who is by law permitted to call himself a veterinary surgeon, and I feel convinced that if he had known how his letter would be perverted, the observations would never have been penned. I can assure you that the rule relating to the admission of members was made, after due deliberation, in a full meeting; and when the majority present were members of the Royal College of Veterinary Surgeons, and graduates of the Royal Veterinary College. For my own part, since the formation of our Society, I have laboured hard to advance it in every way, and think that I can, without egotism, claim a priority in England of having sent our 'Transactions' to you for pub-

lication in a concise manner; and, as you advocate, couched in language that only the educated and scientific man can understand. If the different societies were to adopt your suggestions, they would have to *expel* a considerable number of gentlemen who enjoy, and deservedly so, good positions in society, and who are recognised as scientific veterinarians by their brethren in the societies. Our President, I am glad to state, is well aware that this would be a great injustice; and, had he not been fully alive to the rectitude of his steps, would never have consented to take office. Let me add that his urbanity, gentlemanly demeanour, and his high standing in the West Riding, have been of great assistance in ensuring our success. In all the observations that I have read against the legality of the Edinburgh Veterinary diploma, the writers forget, or seem not to know, that when Professor Dick, in consequence of his rights being entrenched upon and his students snubbed, seceded from the Royal College of Veterinary Surgeons, he only fell back upon his original right of granting diplomas—a right which you are well aware was in existence since 1823—or twenty-one years before the profession was incorporated by Royal Charter. I could enlarge upon this topic, but refrain from doing so; but, in conclusion, let me add that the examinations at the Edinburgh Veterinary College are now conducted in a manner second to none, and that the diploma so obtained gives its possessor a right to consider himself a qualified veterinary surgeon, and to aspire to all honours and emoluments that fall to the profession. How then can a man so qualified, if he be one of education—I am sorry to say that many are short of that, corporate or not corporate—lower the status of a veterinarian society? If we only look around us, we find our fellow graduates as high as any veterinary surgeon can be; one, I understand, Mr. Hallen, Jun., is at the head of the Indian Army Veterinary Department, and another, Mr. Fleming, a fellow of some of our most learned societies at home.

I remain, Gentlemen,

Yours truly,

W. WILLIAMS,

Hon. Sec. to the Yorkshire Veterinary Medical Society, and one of the Examiners at the Edinburgh Veterinary College.

To the Editors of 'The Veterinarian.'

LETTER TO THE EDITORS ON EPILEPSY AND OTHER SEIZURES IN THE HORSE.

By "HUMANITAS."

SIRS,—A short time ago, I witnessed the sudden death of a horse, and as it appeared to me that the poor animal's end was accelerated by the ignorant treatment of some of the persons who assembled, it may not be without some good results if you will allow me through your columns to describe what I saw of the case, with some remarks and suggestions upon it.

I was attracted to my window one morning, by a noise in the street like the clatter of a horse's hoofs, and by some exclamations from passers by; and upon looking out I saw a very handsome saddle horse upon the ground kicking and apparently endeavouring to rise. I heard afterwards that the horse in falling had thrown the rider, who fortunately escaped unhurt. A groom was at a short distance mounted on a similar description of horse to that which had fallen, and a very handsome pair it was.

A crowd of course soon collected, and the driver of a cab, who got off his box for the purpose, was very officious and loud in his directions to others to "*sit on 'is 'ead*" and "*'old 'im down,*" which common expedients may be all very well in the case of a horse having simply slipped down when in harness and there is a difficulty in keeping him quiet during the process of extricating him. The poor animal that I was watching, notwithstanding his efforts to rise, was so persistently held down by the half dozen strong men who surrounded him, that in a few minutes his struggles were at an end, and he troubled them no longer. If I had been on the spot I should have suggested a different course, but before I could send a message the poor animal was dead.

The sudden ailment was doubtless an attack of *vertigo*, from the heat of the weather or over fatigue; and the question I wish to put concerning such a case is this, would it not be more in accordance with rational treatment to avoid interference? It appeared to me that the fatal termination was accelerated by the force applied to check the struggles of the animal.

I venture upon these remarks with great deference, not knowing whether they possess any scientific value, but if you consider that any practical advantage could result from greater

publicity being given to the idea, perhaps you will allow me to propose a plan by which such a benefit might be secured.

I would ask you to have some simple instructions penned under your authority as to the treatment of the noble animal, the horse, in similar cases to that which I have related. If these rules were forwarded to the "*Society for the Prevention of Cruelty to Animals*" the Committee doubtless would take up the subject, and by publishing the instructions in a separate form or appending them to their Reports, many persons who are now ignorant on the matter, would be informed how to distinguish a FIT from a mere slip or stumble, when a horse is down, and what to do under the circumstances. Such instructions should be in the hands of every coachman, groom, cabman, and ostler in the kingdom.

I am, Sirs, &c.,
HUMANITAS.

[We beg to thank "Humanitas" for forwarding the above communication to us for publication. Too many persons content themselves by mere expressions of pity for the lower animals, and take no steps for practically obtaining for them any relief from their misery. Cases of horses falling in the streets from impaired functions of the brain are few, when compared with similar accidents from common causes; nevertheless all persons should be familiar with the means that are proper to be employed to alleviate the animal's sufferings. No attempt to restrain the movements by force should be made, other than such as are absolutely needed to prevent the horse doing himself injury by his ineffectual efforts to rise. Some straw should be quickly procured and placed under the body. The head should be slightly elevated, and cold water gently thrown upon it from time to time. The nostrils and mouth also should be sponged with cold water. The extremities and body should be well rubbed with the ordinary horse-brush. A free access of air should be allowed, and consequently all lookers on kept at a distance. If the horse has fallen in harness, the throat band of the bridle should be loosed, and especial attention given to either remove the collar, or draw it forwards, so that it does not press on the windpipe and chief blood-vessels of the neck, and thus impede the return of blood from the head. As soon as the animal is capable of rising he should be assisted in so doing, and carefully walked into the nearest and most convenient stable, or rather airy loose box, and notwithstanding he may appear to have quickly recovered from the fit he ought not to be again put to work until he has been seen by a Veterinary Surgeon.]

THE VETERINARY DEPARTMENT OF INDIA.

DEAR SIRS,—In the *Englishman*, Indian paper, of the 30th December last year, in a short leading article, alluding to the Veterinary Department, sanguine hopes were held out that something would be done for the officers of this branch of the Indian Army, and it said in that article, that the Veterinary Amalgamation measure might overtake that for the Medical Service.

If the Members of the Indian Medical Service had a grievance to complain of, it must be admitted by all that the Veterinary Surgeons have one also; but they have been silent as it was supposed that their Amalgamation scheme would be published at the same time as the new rules for the Medical branch of the Indian Service. They are doomed to disappointment, however, as no allusion even is made to the Department; nor are the authorities out here aware of any changes in contemplation; either in the promotion list, or of any alterations in the scale of pay or pensions.

It is now more than four years ago, since the Royal Warrant giving increased rank and pay to the Veterinary Surgeons of H. M.'s British Army, was published in this country, and declared to be applicable to the Veterinary Surgeons of H. M.'s Indian Army, and it stated in General Orders in the *Government Gazette* that the relative rank of the Veterinary Officers of our Army shall be as follows :

Veterinary Surgeon on appointment as Subaltern; Veterinary Surgeon First Class on promotion, as Captain; Staff Veterinary Surgeon on promotion, as Major. This was published in March 1860, but from that date up to the present time, no promotions have been made, nor indeed have any changes taken place, and Veterinary Surgeons stand in the same position as they occupied previous to the publication of the Royal Warrant. Even those belonging to the Queen's Service, who have been promoted out here, received no benefits by their promotion to First Class, which gives them relative rank as Captains. At home they would get the same pay as a Captain of Cavalry, with quarters free, &c., &c., as other officers are entitled to of the same rank, but in India, First-Class Veterinary Surgeons draw only Cornet's pay under ten years' service, and Lieutenants' pay over ten and under twenty years' service. Except in the Stud Department, Veterinary Surgeons get no Staff pay whatever, nor

are they entitled to draw head money as Medical Officers have done previous to the publication of the last Medical Warrant. A Veterinary Surgeon in charge of a Regiment of Cavalry draws two annas per head for each horse under his charge. In a Regiment composed of about 500 horse this would come to about sixty rupees per month, but out of this sum he has to supply bazaar medicines and all "Hospital necessaries," fire-wood, bandages, and stationery, and the majority of men would, I dare say, much prefer not having the contract at all. This is just the position of the Veterinary Surgeons of both Services, but the Queen's men have the most reason to complain, for notwithstanding that some few promotions have been made in their service lately, these have brought no advantages whatever with them, as they get no increase of pay.

Their position is a most anomalous one, for a First Class Veterinary Surgeon gets Captain's pay in England, but out here he can only draw Cornet's pay; under ten years' service, and he must have completed twenty years' service before he is entitled to draw the pay of his relative rank.

According to the Royal Warrant a Veterinary Surgeon is eligible for promotion to First Class after five years' service on full pay.

For example, let us suppose then that a Veterinary Surgeon *serving in India*, is promoted to First Class after seven years' service (of which there are instances in the Queen's Army) he must serve a still further period of thirteen years before he can draw the pay which his rank entitles him to from the day of his promotion.

I remain, yours faithfully,

A LOVER OF JUSTICE.

To the Editors of 'The Veterinarian.'

Facts and Observations.

DESTRUCTION OF RACING STOCK AT SWACLIFFE PADDOCKS BY LIGHTNING.—On Sunday last, August 21st., Mr. Gulliver, of Swacliffe Paddocks, near Banbury, the well-known breeder of racing stock, sustained a severe loss by the thunder-storm which passed over the midland and southern counties. The electric fluid killed four valuable colts and a brood mare, and seriously injured several other animals. One mare is completely paralysed and others are still suffering from partial paralysis, the lightning having affected their nervous system. *Redemption*, the well-known brood mare, whose stock has always commanded high prices, has sustained a fracture of the near fore leg, and, to add to the misfortune, she is near foaling. The present loss is estimated at £3500, and this amount will probably be increased, as some of the animals, which were of great promise, will prove all but useless for the purpose for which they were bred.

NEW LAW ON POISONED FLESH.—By an Act just printed a penalty of £10 can be levied on any person placing poisoned flesh in fields and other places, unless under proper precautions, for the destruction of vermin. The statute is also to extend to the Poisoned Grain Act of 1863.

MALT FOR FEEDING CATTLE.—An experiment was recently concluded in Cumberland which is interesting to farmers and others, as showing the relative feeding properties of barley and malt. On the 9th of April last, eight Irish heifers, as nearly equal in quality, size, and weight, as it was possible to find them, were fastened up in the premises of Mr. Wyndham, brewer, Cockermouth, to fatten. Four of these were fed upon barley and four upon equal measures of malt. The result, at the end of thirteen weeks, was in favour of barley by 30 lbs. upon the four, which sold for £6 10s. more money than those fed upon malt. The owner lost 5s. per head by the experiment.—*Times*, July 18th, 1864.

DEATH FROM HYDROPHOBIA.—In the early part of June a ferocious and strange dog, of the lurcher breed, ran into the toll-house at Heaton Chapel, near Stockport, and bit a little deaf and dumb boy, aged fourteen, named Jacob

Wolstencroft, son of the keeper, on the right thumb. He then attacked the elder brother, Job, aged sixteen, merely excoriating the skin of the right thumb. Their screams brought the father from a back room, and he, seizing a poker, struck at the infuriated animal, receiving, in return, a severe bite upon the muscles of the arm. The injuries of the father and younger son were treated in the usual way by a surgeon, but nothing was done to the scratch sustained by Job. About a fortnight back, however, the father was alarmed by the sudden illness of his eldest son. On the next day the youth became restless, stared fearfully, perspired much, and became distressingly excited on the appearance of any person in his bedroom, and refused food, or anything else. A surgeon who was called in pronounced it a decided case of hydrophobia; and ordered the lad to be removed without delay to the infirmary. Attempts were here made to allay his sufferings, but without effect. At length he was removed by force to the Union workhouse, and placed under restraint in the padded room. The terrible malady increased in virulence; he continued frothing at the mouth, and knocking himself about, until his agonies were terminated by death, early in the morning on the third day after the attack.—*Manchester Courier*.

USE OF HORSE-FLESH.—We learn from the foreign journals that the attempts to popularise the use of horse-flesh have been very successful in Vienna. Several butchers' shops have been opened in that city for the sale of this meat, under the authority of government, and with a regulated superintendence. The permission was first obtained a few years since, but of late the business has considerably increased.

OPERATION FOR THE REMOVAL OF DISEASED CLAWS OF A LION.—The Brussels journals give an account of a novel surgical operation just performed on the great African lion belonging to the Zoological Society of that city. For some time past the animal had been suffering from disease in the feet, which necessitated the shortening of its claws, they having increased so much in length as to have their points imbedded in the digital pads of the feet.

In order to perform the operation without danger, a large box was prepared, with a grated bottom, covered by a wooden floor, which could be withdrawn so as to allow the lion's feet to pass between the bars. The top of the box was also made to descend by means of screws, so as to press on the animal

and prevent its drawing in its feet. When the lion entered the box, the latter was turned on the side and the sliding bottom withdrawn. The paws then slipped between the bars, and the screws above were tightened.

M. Thiernesse, assisted by five pupils of the Veterinary School, then proceeded to cut away the claws. The patient bore the operation tolerably well, only uttering a short roar occasionally, and seemed relieved when the first paw had been cut and dressed. A keeper, to whom the lion is much attached, sat near its head and endeavoured to calm it by talking, evidently not without effect. The operation was successfully performed, and there is every reason to believe that the cure will be complete.

STATUE OF JOHN HUNTER.—The first statue to the memory of John Hunter, the greatest physiologist England has produced, has just been placed in the Hunterian Museum of the Royal College of Surgeons. It is executed in marble, and is from the studio of Henry Weekes, R.A. Hunter is represented in deep thought, seated in a chair which has been modelled after the one made by his own hands, and which may still be seen in the office of the conservator of the museum.

The sculptor has availed himself of the large picture of Hunter by Reynolds, which is now rapidly fading, notwithstanding the great care taken of this *chef-d'œuvre* by the authorities. Indeed it may be said that Mr. Weekes has produced in marble the picture itself, the history of which is not a little singular, and at the present moment will no doubt be read with some interest.

Hunter's friends had long been desirous to engage him to sit to Sir Joshua Reynolds for his picture, but he had always declined to do so, not choosing that it should be done at the expense of others, and thinking the price too high for himself to pay. He was, however, at length induced to comply, and chiefly to oblige Sharpe, the eminent engraver.

Reynolds found Hunter a bad sitter, and had not been able to satisfy himself with the likeness, when one day, after the picture was far advanced, Hunter fell into a train of thought, in the attitude in which he is represented in the present portrait. Reynolds, without saying a word, turned the canvas upside down, made a fresh sketch, with the head between the legs of the former figure, and so proceeded to lay on over the former painting the colours of that which now graces the walls of the Council Chamber of the Royal College of Surgeons. From this portrait Sharpe executed his engraving,

which is admitted by the best judges to be one of the finest specimens of the art ever executed in this or any other country. He always considered it one of his happiest efforts, and was found poring over it with admiration forty years after he had executed it.

FUNCTIONS OF THE CEREBELLUM.—Dr. Dickinson, in the *Proceedings of the Royal Society*, states that experiments with reptiles and fish show that the cerebellum by itself is unable to give more than a limited amount of voluntary motion, and that of a kind deficient in balance and adjustment. If the cerebellum only be removed from fishes, there is a loss of a proper adjustment between the left and the right sides, so that oscillation or rotation takes place. All the limbs are used, but apparently with a deficiency of sustained activity. From the negative results of experiments it is inferred that the cerebellum has nothing to do with common sensation, with the sexual propensity, with the action of the involuntary muscles, with the maintenance of animal heat, or with secretion. The voluntary muscles are under a double influence from the cerebrum and cerebellum. The anterior limbs are chiefly under the influence of the cerebrum, the posterior of the cerebellum. The cerebellum acts when the cerebrum is removed, though when both organs exist it is under its control.

KINDS OF MATTER IN THE BLOOD.—Dr. Beale says there are four kinds of matter in the blood. 1. Matter living and active. 2. Matter which has ceased to live, and which now possesses peculiar properties and chemical composition. 3. Matter which results from the disintegration of the formed material. 4. Matter (*pabulum*) which is about to live, or about to be converted into living material.

GROWTH OF PLANTS IN THE DARK.—It is well known that under the influence of light a growing plant assimilates carbon, and at the same time fixes hydrogen and oxygen in the proportions to form water. In the dark the converse of this obtains. M. Boussingault has proved by experiments that the growth of a plant in the dark is supported entirely at the expense of the seed.

THE VETERINARIAN, SEPTEMBER 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE CONSTITUTION OF OUR VETERINARY MEDICAL ASSOCIATIONS.

READILY do we give insertion to a communication, from Mr. Williams, V.S., which will be found in another part of our Journal, and for which we are free to confess we were not altogether unprepared. A body to be strong must be united; some rallying point must exist, and we had thought that as the profession had become incorporated, this would constitute the *simplest* and *safest* means to obtain the object in view. To the formation of veterinary medical associations in the different counties in England we have always given our earnest support and encouragement, confidently looking to these associations as a means of effecting much good to the profession; and we believe that we have never given expression to anything which is in the least degree calculated to detract from their usefulness, or, as expressed by Mr. Williams, “to do harm by destroying the harmony that is now existing.” As editors, we are only solicitous for the advancement of the profession with which we have been so long and so intimately connected. We have been ever ready to express our obligations to correspondents, although not members of the body corporate, whose writings have enriched our pages. Would that we could induce such to become incorporated, and thus to strengthen the body, and add to its worth. Should the broader base for these associations, however, be deemed the stronger one, we raise no objections whatever to its adoption. We have in reality merely expressed opinions that have reached us, *viz.*, that in the formation of new associations of the kind it was worth consideration as to whether they should not be restricted to members of the body corporate.

Mr. Williams is not right when he says, "If the different societies were to adopt your suggestions, they would have to *expel* a considerable number of gentlemen who enjoy, and deservedly so, good positions in society, and who are recognised as scientific veterinarians." We took care to especially guard against such an inference as this, by stating that "laws are not retrospective." Our object, in fact, has been to induce all to unite in a more intimate bond of union, and thus to ensure co-operation. We do not forget our motto, "Vis unita fortior," and, moreover, we dislike the Machiavelian policy of "Divide et impera." We rejoice to know that the position the members of our profession are enabled now to take is very different compared with what it once was, and we shall ever labour to promote their still higher elevation. Without controversy, the state of a profession is what its individual members make it, and it is pleasing to have to place on record contributions that do honour to their authors, and show minds actuated by like motives with our own. We still hope to see some plan devised by which distinctions will be lost among those who have been duly educated at the different recognised schools. Their abilities having been tested, why should they not become members of the Royal College of Veterinary Surgeons?

THE MEETING AT NEWCASTLE OF THE ROYAL AGRICULTURAL SOCIETY.

IN accordance with established custom, we publish this month the award of the prizes of the Royal Agricultural Society at its meeting at Newcastle. Speaking in general terms, this annual gathering may be said to have been one of the most successful which has ever taken place.

In a pecuniary point of view it ranks as the third best, being only surpassed by Leeds and Battersea. The sum received for the admission of visitors amounted in the aggregate to £8045 12s. 6d., which it is hoped may leave a

balance in favour of the Society of something like a £1000, after all the expences have been paid. This large amount of money shows the interest which was created by the Society's *second visit* to the town of Newcastle; but perhaps this is best exemplified by the fact, that nearly 115,000 persons visited the show yard during the week of the exhibition.

The show of stock was upon the whole satisfactory, but some classes were not so numerously or so well represented as could have been wished, arising chiefly from the great distance northwards that many of the animals would have had to travel. An exception to this necessarily belongs to the short-horns, which were at home in the district, and consequently they mustered in great strength, there being no less than 175 entries in the several classes of bulls, cows, heifers, and calves. Never perhaps was a finer show of these beautiful and most valuable animals ever seen; and certainly a more healthy lot, or one more free from hereditary disease, was never brought together.

The Herefords were fairly represented, but in the number of the Devons there was a great falling off. The specimens sent, however, maintained in both these classes the valuable points of each distinctive breed.

To go *seriatim* through the several classes of cattle, sheep, and pigs, making only a few general remarks on each, would necessarily encroach too much on our limited space; besides which we have to remember that we write for the veterinary surgeon and not for the agriculturist. Notwithstanding this, it will doubtless be expected that we should say something about the horses. Here, however, we have to confess to a disappointment, for with a few exceptions, they were not equal to those brought together on many former occasions. Nine competitors only entered the list for the £100 prize for the best thorough-bred stallion. The winner—"Laughing-stock," a five-years-old bay, by "Stockwell," was rightly placed; and he with "Cavendish," who took the second prize, were by far the best horses in the class. It is satisfactory to know that the thoroughbreds passed the veterinary inspection, with

one exception, in which the animal was found to be a roarer.

The prize of £25 for the best, and £15 for the second best stallion for getting hunters, brought only three competitors, and not much could be said in praise of either. In the class of brood mares for breeding hunters there were only nine entries, and in that for breeding hackneys only two. The hunters, however, mustered in strong force, thirty-nine animals being entered in the three classes, of five or six years old; four years old, and three years old. They formed decidedly the best part of the horse show.

We can say but little for any of the several classes of agricultural horses if we except the Suffolks. There were, however, but few of these—distance evidently telling on the entries,—but those shown did no discredit to this most valuable breed. The bad feet and hocks so often complained of as belonging to the Suffolks are evidently giving way to improved form and less predisposition to disease; and we have no doubt by still greater care in the selection of sires and dams that these defects will entirely disappear. We had anticipated a fine show of Clydesdales, but were sadly disappointed both as to number and quality. Some of the best also had to be disqualified for diseases of an hereditary nature.

The system of examining horses before being entered for the Society's prizes is a good one, and, upon the whole, is working well; but still we regret to find that some veterinary surgeons are not exercising that amount of care in these examinations which they ought to do. Let this hint be sufficient.

Errors in judgment will of necessity occur every now and then, but every member of the College should be doubly jealous of his professional reputation. Nothing should tempt him to place this in jeopardy. There are many, who are not very friendly to the system, narrowly watching his proceedings, and ready to take advantage even of an oversight on his part to get rid of it altogether. Should they succeed, and our show-yards again become filled with unsound animals, let it not be said that the veterinary surgeon assisted in inflicting this evil a second time on the country.

LIST OF PRIZES AWARDED AT THE NEWCASTLE MEETING
OF THE ROYAL AGRICULTURAL SOCIETY.

CATTLE.

SHORT-HORNED.

CLASS I.—*To the owner of the best Bull, above three and not exceeding six years old.*

- 6.—First prize, £25, to Amos Cruickshank, of Sittyton, Whiterashes, Aberdeenshire.
21.—Second prize, £15, to Viscount Strathallan, of Strathallan Castle, Auchterarder, Perthshire.
28.—Third prize, a Silver Medal, to David Reynolds Davies, of Mere Old Hall, Knutsford, Cheshire.
7.—Commended, John Charlesworth, of Headfield, Dewsbury, Yorkshire.
8.—Commended, John B. Booth, of Killerby, Catterick, Yorkshire.
10.—Commended, Joseph Dent of Neasham Hall Farm, Neasham, Darlington.
26.—Commended, John Clayden, of Littlebury, Saffron Walden, Essex.

CLASS II.—*To the owner of the best Bull, above two and not exceeding three years old.*

- 42.—First prize, £25, to William Stirling, M.P., of Keir, Dumblane, Perthshire.
40.—Second prize, £15, to Jonathan Peel, of Knowlmere Manor, Clitheroe, Yorkshire.
35.—Third prize, Silver Medal, Richard Eastwood, of Thorney Holme, Clitheroe, Lancashire.
39.—Highly commended, Robert Gell, of Grimston Lodge, York.

CLASS III.—*To the owner of the best Bull, above one and not exceeding two years old.*

- 70.—First prize, £25, to Thomas Willis, of Manor House, Carperby Bedale, Yorkshire.
63.—Second prize, £15, to Arthur James Balfour, of Whittingham Prestonkirk, Haddingtonshire.
51.—Third Prize, a Silver Medal, to Richard Booth, of Warlaby, Northallerton, Yorkshire.
46.—Highly commended, Francis Hawksworth Fawkes, of Farnley Hall, Otley, Yorkshire.
49.—Commended, John Charlesworth, of Headfield, Dewsbury, Yorkshire.
50.—Commended, George Garne, of Churchill Heath, Chipping Norton, Oxfordshire.
58.—Commended, Robert E. Oliver, of Sholebroke Lodge, Towcester, Northamptonshire.

CLASS IV.—*To the owner of the best Bull Calf, above six and not exceeding twelve months old.*

- 77.—First prize, £10, to Francis Hawksworth Fawkes, of Farnley Hall, Otley, Yorkshire.
80.—Second prize, £5, to Richard Booth, of Warlaby, Northallerton, Yorkshire.
83.—Third prize, Silver Medal, to Robert Hanett, of Kirkwhelpington, Newcastle-upon-Tyne, Northumberland.
87.—Highly commended, Lord Braybrooke, of Audley End, Saffron Walden, Essex.

CLASS V.—*To the owner of the best Cow, above three years old.*

- 100.—First prize, £20, to Sir Matthew White Ridley, Bart., M.P., of Blagdon, Cromlington, Northumberland.
 103.—Second prize, £10, to James Douglas, of Athelstaneford Farm, Drem, Haddingtonshire.
 107.—Third prize, Silver Medal, to Richard Stratton, of Wall's Court, Stapleton, Bristol.
 96.—Highly commended, John Bowstead, of Beech Bank, Penrith, Cumberland.
 104.—Highly commended, James Douglas, of Athelstaneford Farm, Drem, Haddingtonshire.

The Class generally commended.

CLASS VI.—*To the owner of the best Heifer, in milk, or in calf, not exceeding three years old.*

- 123.—First prize, £15, to James Douglas, of Athelstaneford Farm, Drem, Haddingtonshire.
 113.—Second prize, £10, to William Lambert, of Elrington Hall, Haydon Bridge, Northumberland.
 116.—Third prize, a Silver Medal, to Richard Stratton, of Wall's Court, Stapleton, Bristol.
 109.—Highly commended, Richard Eastwood, of Thorney Holme, Clitheroe, Lancashire.
 110.—Commended, Richard Eastwood, of Thorney Holme, Clitheroe, Lancashire.
 111.—Commended, Adam Dugdale, of Rosehill, Burnley, Lancashire.
 118.—Commended, Arthur James Balfour, of Whittingham, Prestonkirk, Haddingtonshire.
 119.—Commended, William White, of Barrell, Bedale, Yorkshire.

CLASS VII.—*To the owner of the best Yearling Heifer.*

- 132.—First prize, £15, to George Savile Folijambe, Osberton Hall, Worksop, Notts.
 136.—Second prize, £10, to A. and A. Mitchell, of Allon, Clackmannanshire.
 127.—Third prize, Silver Medal, to Richard Eastwood, of Thorney Holme, Whitwell, Lancashire.
 134.—Highly commended, Richard Booth, of Warlaby, Northallerton, Yorkshire.
 124.—Highly commended, William Rhodes Brometh, of Cockeford, Tadcaster, Yorkshire.
 137.—Commended, A. and A. Mitchell, of Allon, Clackmannanshire.
 146.—Commended, David M'Intosh, of Havering Park, Romford, Essex.

CLASS VIII.—*To the owner of the best Heifer-Calf, above six and under twelve months old.*

- 164.—First prize, £10, to Sir Anthony de Rothschild, Bart., of Aston Clinton, Tring, Buckinghamshire.
 153.—Second prize, £5, to Lord Feversham, of Duncome Park, Helmsley, Yorkshire.
 173.—Third prize, a Silver Medal, to James Douglas, of Athelstaneford Farm, Drem, Haddingtonshire.
 154.—Highly commended, Thomas Edward Pawlett, of Beeston, Sandy, Bedfordshire.
 165.—Highly commended, Sir Anthony de Rothschild, Bart., of Aston Clinton, Tring, Buckinghamshire.
 157.—Commended, John B. Booth, of Killerby, Catterick, Yorkshire.
 161.—Commended, Lady Pigot, of Branches Park, Newmarket, Cambridgeshire.
 167.—Commended, John Wood, of Stanwick Park, Darlington.
 152.—Commended, Richard Eastwood, of Thorney Holme, Clitheroe, Lancashire.

HEREFORD.

CLASS IX.—*To the owner of the best Bull, above three and not exceeding six years old.*

180.—First prize, £25, to William Taylor, of Showle Court, Ledbury, Herefordshire.

178.—Second prize, £15, to John Meredith, of the Hildare, Half-way-house, Shrewsbury.

179.—Highly commended, John Albert Hollings, of How Caple, Ross, Herefordshire.

CLASS X.—*To the owner of the best Bull, above two and not exceeding three years old.*

181.—First prize, £25, to John Baldwin, of Luddington, Stratford-on-Avon, Warwickshire.

183.—Second prize, £15, to George Pitt, of Chadnor Court, Dilwyn, Leominster, Herefordshire.

182.—Commended, James Marsh Read, of Elkstone, Cheltenham, Gloucestershire.

CLASS XI.—*To the owner of the best Bull, above one and not exceeding two years old.*

188.—First prize, £25, to Thomas Duckham, of Baysham Court, Ross, Herefordshire.

187.—Second prize, £15, to Edmund Wright, of Halston Hall, Oswestry, Salop.

CLASS XII.—*To the owner of the best Bull-Calf, above six, and not exceeding twelve months old.*

190.—First prize, £10, to Edmund Wright, of Halston Hall, Oswestry, Salop.

192.—Second prize, £5, to Thomas Skinner, Bradstock, of Cobrey Park, Ross, Herefordshire.

CLASS XIII.—*To the owner of the best Cow, above three years old.*

198.—First Prize, £20, to Louisa Woodgate Rea, of Westonbury Pembridge, Leominster, Herefordshire.

197.—Second prize, £10, to Louisa Woodgate Rea, of Westonbury Pembridge, Leominster, Herefordshire.

195.—Commended, George Pitt, of Chadnor Court, Dilwyn, Leominster, Herefordshire.

199.—Commended, John Baldwin, of Luddington, Stratford-on Avon, Warwickshire.

CLASS XIV.—*To the owner of the best Heifer, in milk, or in-calf, not exceeding three years old.*

201.—First prize, £15, to John Baldwin, of Luddington, Stratford-on-Avon, Warwickshire.

206.—Second prize, £10, to James Taylor, Studford Court, Leominster, Herefordshire.

203.—Highly commended, James Marsh Reed, of Elkstone, Cheltenham, Gloucestershire.

CLASS XV.—*To the owner of the best Yearling Heifer.*

209.—First prize, £15, to John Baldwin, of Luddington, Stratford-on-Avon, Warwickshire.

207.—Second prize, £10, to Major-General the Hon. A. N. Hood, of Cumberland Lodge, Windsor, Berkshire.

CLASS XVI.—*To the owner of the best Heifer-Calf, above six and under twelve months old.*

212.—First prize, £10, to John Monkhouse, of the Stow, Hereford.

216.—Second prize, £5, to Andrew Rouse Boughton, Knight, of Downton Castle, Ludlow, Herefordshire.

213.—Commended, Philip Turner, of the Leen, Pembridge, Herefordshire.

DEVON.

CLASS XVII.—*To the owner of the best Bull, above three and not exceeding six years old.*

219.—First prize, £25, to Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

218.—James Merson, of Brinsworthy, North Molton.

CLASS XVIII.—*To the owner of the best Bull, above two and not exceeding three years old.*

223.—First prize, £25, to John Azariah Smith, of Bradford Peverell, Dorsetshire.

222.—Second prize, £15, to Major-General the Hon. A. Nelson Hood, of Cumberland Lodge, Windsor, Berkshire.

224.—Commended, Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

CLASS XIX.—*To the owner of the best Bull, above one and not exceeding two years old.*

226.—First prize, £25, to Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

225.—Second prize, £15, to Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

227.—Commended, George Turner, of Beacon Downes, Exeter, Devonshire.

CLASS XX.—*To the owner of the best Bull-Calf, above six and not exceeding twelve months old.*

231.—First prize, £10, to George Turner, of Beacon Downes, Exeter, Devonshire.

CLASS XXI.—*To the owner of the best Cow, above three years old.*

234.—First prize, £20, to John Azariah Smith, of Bradford Peverell, Dorchester, Dorsetshire.

237.—Second prize, £10, to Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

235.—Highly commended, John Azariah Smith, of Bradford Peverell, Dorchester, Dorsetshire.

The class commended.

CLASS XXII.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

244.—First prize, £15, to Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

242.—Second prize, £10, to Charles Hambro, of Milton Abbey, Blandford, Dorsetshire.

CLASS XXIII.—*To the owner of the best yearling Heifer,*

246.—First prize, £15, to Major-General the Honorable A. N. Hood, of Cumberland Lodge, Windsor, Berkshire.

249.—Second prize, £10, to George Turner, of Beacon Downes, Exeter, Devonshire.

247.—Commended, Major-General the Honorable A. N. Hood, of Cumberland Lodge, Windsor, Berkshire.

CLASS XXIV.—*To the owner of the best Heifer-Calf, above six and under twelve months old.*

251.—First prize, £10, to Walter Farthing, of Stowey Court, Bridgewater, Somersetshire.

SUSSEX.

CLASS XXV.—*To the owner of the best Bull, above one and not exceeding six years old.*

252.—First prize, £10, to George Jenner, of Parsonage House, Udimore, Rye, Sussex.

253.—Second prize, William Marshall, of Manor House, Bolney, Cuckfield, Sussex.

CLASS XXVI.—*To the owner of the best Cow, above three years old.*

254.—First prize, £10, George Jenner, of Parsonage House, Udimore, Rye, Sussex.

257.—Second prize, £5, to William Marshall, of Manor House, Bolney, Cuckfield, Sussex.

CLASS XXVII.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

260.—First prize, £10, William Marshall, of Manor House, Bolney, Cuckfield, Sussex.

258.—Second prize, £5, George Jenner, of Parsonage House, Udimore, Rye, Sussex.

CLASS XXVIII.—*To the owner of the best Yearling Heifer.*

261.—First prize, £10, George Jenner, of Parsonage House, Udimore, Rye, Sussex.

262.—Second prize, £5, to George Jenner, of Parsonage House, Udimore, Rye, Sussex.

CHANNEL ISLANDS.

CLASS XXIX.—*To the owner of the best Bull, above one and not exceeding six years old.*

268.—First prize, £10, to James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

270.—Second prize, to James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

269.—Highly commended, James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

266.—Commended, John Randolphus de Trafford, Croston Hall, Preston, Lancashire.

267.—James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

CLASS XXX.—*To the owner of the best Cow, above three years old.*

278.—First prize, £10, to James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

275.—Second prize, £5, to Lawrence Fowler, of Little Bushey Farm, Hertford, Herts.

274.—Third prize, a Silver Medal, to Thomas Wilson, Esq., of Shotley Hall, Shotley Bridge, Gateshead.

272.—Highly commended, Richard Eastwood, of Thorney Holme, Clitheroe, Lancashire.

273.—Commended, William Parker, of Carlton Hall, Penrith, Cumberland.

CLASS XXXI.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

282.—First prize, £10, to James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

283.—Second prize, £5, to James Dumbrell, of Ditchling, Hurstpierpoint, Sussex.

AYRSHIRE.

CLASS XXXII.—*To the owner of the best Bull, calved before the 1st of January, 1863.*

284.—First prize, £20, to John Stewart, of Benside Cottage, Strathaven, Lanarkshire.

285.—Second prize, £10, to John Stewart, of Benside Cottage, Strathaven, Lanarkshire.

CLASS XXXIII.—*To the owner of the best Bull, calved after the 1st of January, 1863.*

289.—First prize, £20, to William Scott, of Cranberry, Ecclefechan, Dumfriesshire.

290.—Second prize, £10, to His Grace the Duke of Hamilton and Brandon, of Hamilton Palace, Hamilton, Lanarkshire.

221.—Highly commended, His Grace the Duke of Hamilton and Brandon, of Hamilton Palace, Hamilton, Lanarkshire.

CLASS XXXIV.—*To the owner of the best Cow, above three years old.*

294.—First prize, £15, to His Grace the Duke of Hamilton and Brandon, Hamilton Palace, Hamilton, Lanarkshire.

295.—Second prize, £5, to His Grace the Duke of Hamilton and Brandon, Hamilton Palace, Hamilton, Lanarkshire.

296.—Highly commended, His Grace the Duke of Hamilton and Brandon, Hamilton Palace, Hamilton, Lanarkshire.

298.—Commended, David Tweedie, of Castle Mains, Crawford, Abingdon, Lanarkshire.

CLASS XXXV.—*To the owner of the best Heifer, calved before the 1st of January, 1863.*

306.—First prize, £10, to His Grace the Duke of Hamilton and Brandon, Hamilton Palace, Hamilton, Lanarkshire.

305.—Second prize, £5, to His Grace the Duke of Hamilton and Brandon, Hamilton Palace, Hamilton, Lanarkshire.

301.—Commended, John Stewart, of Burnside Cottage, Strathaven, Lanarkshire.

CLASS XXXVI.—*To the owner of the best Heifer, calved after the 1st of January, 1863.*

312.—First prize, £10, to the Duke of Hamilton and Brandon, of Hamilton Palace, Hamilton, Lanarkshire.

313.—Second prize, £5, to the Duke of Hamilton and Brandon, of Hamilton Palace, Hamilton, Lanarkshire.

309.—Commended, John Stewart, of Burnside Cottage, Strathaven, Lanarkshire.

314.—Commended, David Tweedie, of Castle Mains, Abingdon, Lanarkshire.

SCOTCH POLLED,

Except Galloways.

CLASS XXXVII.—*To the owner of the best Bull, calved before the 1st of January, 1863.*

316.—First prize, £20, to Robert Walker, of Hillside House, Portlethen Aberdeen.

315.—Second prize, £10, to Alexander Paterson, of Mulben, Blackhillook, by Keith, county Elgin.

CLASS XXXVIII.—*To the owner of the best Bull, calved after the 1st January, 1863.*

317.—First prize, £20, to William McCombie, of Tillyfour, Aberdeen.

CLASS XXXIX.—*To the owner of the best Cow, above three years old.*

318.—First prize, £15, to William McCombie, of Tillyfour, Aberdeen.

319.—Second prize, £5, to William McCombie, Tillyfour, Aberdeen.

CLASS XL.—*To the owner of the best Heifer, calved before the 1st of January, 1863.*

321.—First prize, £10, to William McCombie, of Tillyfour, Aberdeen.

320.—Second prize, £5, to William McCombie, of Tillyfour, Aberdeen.

CLASS XLI.—*To the owner of the best Heifer, calved after the 1st of January, 1863.*

324.—First prize, £10, to William McCombie, of Tillyfour, Aberdeen.

323.—Second prize, £5, to William McCombie, of Tillyfour, Aberdeen.

322.—Highly commended, Lord Kinnaird, of Rossie Priory, Inchtute, Perthshire.

SCOTCH HORNED.

CLASS XLII.—*To the owner of the best Bull, calved before the 1st of January, 1863.*

326.—First prize, £20, to the Duke of Athole, of Blair Castle, Blair Athole, Perthshire.

325.—Second prize, £10, to Viscount Boyne, of Brancepeth Castle, Durham.

CLASS XLIII.—*To the owner of the best Bull, calved after the 1st of January, 1863.*

327.—First prize, £20, to the Duke of Athole, of Blair Castle, Blair Athole, Perthshire.

328.—Second prize, £10, to the Duke of Athole, Blair Castle, Blair Athole, Perthshire.

CLASS XLIV.—*To the owner of the best Cow, above three years old.*

329.—First prize, £15, to the Duke of Athole, of Blair Castle, Blair Athole, Perthshire.

330.—Second prize, £5, to the Duke of Athole, of Blair Castle, Blair Athole, Perthshire.

CLASS XLV.—*To the owner of the best Heifer, calved before the 1st of January, 1863.*

No entry.

CLASS XLVI.—*To the owner of the best Heifer, calved after the 1st of January, 1863.*

No entry.

OTHER ESTABLISHED BREEDS.

Not including the Short-horn, Hereford, Devon, Sussex, Channel Islands, Ayrshire, Scotch, Horned, or Polled Breeds.

CLASS XLVII.—*To the owner of the best Bull, above two and not exceeding six years old.*

333.—First prize, £10, to Lord Sondes, of Elmham Hall, Thetford, Norfolk.

335.—Second prize, £5, to Sir Edward Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk.

CLASS XLVIII.—*To the owner of the best Bull, above one and not exceeding two years old.*

336.—First prize, £10, to Barnabas Collins, of Hunston, Ixworth, Suffolk.

337.—Second prize, £5, to Lord Sondes, of Elmhall Hall, Thetford, Norfolk.

CLASS XLIX.—*To the owner of the best Cow, above three years old.*

- 338.—First prize, £10, to Lord Sondes, of Elmham Hall, Thetford, Norfolk.
 339.—Second prize, £5, to Lord Sondes, of Elmham Hall, Thetford, Norfolk.
 349.—Third prize, a Silver Medal, to Sir Willoughby Jones, Bart., of Cranmer Hall, Fakenham, Norfolk.
 348.—Highly commended, Sir Edward Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk.
 346.—Commended, Herbert Salt, of Methley Park, Leeds.
 347.—Commended, Sir Edward Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk.

CLASS L.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

- 351.—First prize, £10, to Lord Sondes, of Elmham Hall, Thetford, Norfolk.
 352.—Second prize, £5, to Sir Willoughby Jones, Bart., of Cranmer Hall, Fakenham, Norfolk.
 350.—Highly commended, Lord Sondes, Elmham Hall, Thetford, Norfolk.
 355.—Commended, Sir Edward Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk.

CLASS LI.—*To the owner of the best yearling Heifer.*

- 361.—First prize, £10, to Barnabas, Collins of Hunston, Ixworth, Suffolk.
 358.—Second prize, £5, to Sir Willoughby Jones, Bart., of Cranmer Hall, Fakenham, Norfolk.
 356.—Highly commended, Lord Sondes, of Elmham Hall, Thetford, Norfolk.
 359.—Commended, Sir Edward Kerrison, Bart., of Brome Hall, Scole, Suffolk.

HORSES.

CLASS LII.—*To the owner of the best Thorough-bred Stud Horse, having served Mares during the Season, 1864, which, in the opinion of the Judges, is best calculated to improve and perpetuate the breed of the sound and Thorough-bred Horse for General Stud Purposes.*

- 386.—First prize, of £100, to Charles and James Moffit, of Kirklington Park, Carlisle, Cumberland.
 388.—Second prize, £25, to Edward George Simpson, of Leven Bridge, Yarm, Yorkshire.
 383.—Commended, Sir Charles Monck, Bart., of Belsay, Newcastle-upon-Tyne.

HUNTER.

CLASS LIII.—*To the owner of the best Stallion, Thorough-bred, suitable for getting Hunters, whose regular charge for serving half-bred Mares during the season, 1864, has not exceeded Five Guineas.*

- 392.—First prize, £25, to Joseph Casson, of Middleton Lodge, Uphall, Edinburgh.
 Second prize withheld.

CLASS LIV.—*To the owner of the best Brood Mare, with foal at foot, or in foal, for breeding Hunters.*

- 395.—First prize, £15, to John Brown, of Wiggonby, Wigton, Cumberland.
 401.—Second prize, £10, to William T. Scarth, of Keverstone Grange, Darlington.
 402.—Commended, Charles Moffat, of Crosby-on-Eden, Carlise.

HACKNEY.

CLASS LV.—*To the owner of the best Brood Mare, with foal at foot, or in foal, for breeding Hackneys.*

403.—First prize, £15, to Richard Britton, of Leeds Pottery, Leeds.

405.—Second prize, £10, to Francis Cook, of Thixendale, Malton, Yorkshire.

PONIES.

CLASS LVI.—*To the owner of the best Stallion, not exceeding 14 hands.*

407.—First prize, £15, to Robert Norman and Son, of High Close, Aspatria, Cumberland.

408.—Second prize, £5, to William and Stephen Hodgson, of Rodderup, Penrith, Alstan, Cumberland.

CLASS LVII.—*To the best Mare, not exceeding 14 hands.*

410.—First prize, £10, to George Heppell Ramsay, of Derwent Villa, Newcastle.

411.—Second prize, £5, to George Heppell Ramsay, of Derwent Villa, Newcastle.

AGRICULTURAL AND DRAY HORSES.

AGRICULTURAL.

Not qualified to compete as Suffolk or Clydesdale.

CLASS LVIII.—*To the owner of the best Stallion, foaled before the 1st of January, 1862.*

412.—First prize, £20, to Samuel Strickland, of Headley Hall, Tadcaster, Yorkshire.

420.—Second prize, £10, to Matthew Read, of Beamish Burn, Chester-le-Street, Durham.

416.—Third prize, Silver Medal, to Robert Orange, of Bedlington, Northumberland.

CLASS LIX.—*To the owner of the best Stallion, foaled in 1862.*

424.—First prize, £15, to Samuel Strickland, of Headley Hall, Tadcaster, Yorkshire.

423.—Second prize, £10, to John Henderson, of Hossley Hill, South Shields.

CLASS LX.—*To the owner of the best Mare and Foal.*

429.—First prize, £20, to John B. Dixon, of Holling Farm, Ebchester, Northumberland.

430.—Second prize, £10, to Samuel Thompson, of Peel Hall Farm, Skipworth Selby, Yorkshire.

CLASS LXI.—*To the owner of the best Two-year-old Filly.*

433.—First prize, £15, to John Eden, Esq., Beamish Park, Fence Houses, Durham.

DRAY.

CLASS LXII.—*To the owner of the best Stallion, foaled before the 1st of January, 1862.*

434.—First prize, £20, to Matthew Read, of Beamish Burn, Chester-le-Street, Durham.

CLASS LXIII.—*To the owner of the best Stallion, foaled in the year 1862.*

435.—First prize, £15, to William Dickman, of Lumley, Fence Houses, Durham.
Second prize, £10, withheld.

CLASS XLIV.—*To the owner of the best Mare and Foal.*

437.—First prize, £20, to William Dickman, of Lumley, Fence Houses, Durham.

CLASS LXV.—*To the owner of the best Two-years-old Filly.*

No entry.

SUFFOLK.

CLASS LXVI.—*To the owner of the best Stallion, foaled before the 1st of January, 1862.*

439.—First prize, £20, to Edward Cottingham, of Dunningworth Hall, Saxmundham, Suffolk.

438.—Second prize, £10, to Charles Boby, of Alton Hall, Stutton, Ipswich.

CLASS LXVII.—*To the owner of the best Stallion, foaled in the year 1862.*

444.—First prize, £15, to Henry Giles, of Croxton Park, Thetford, Norfolk.

445.—Second prize, £10, to William Thompson, jun., of Rose Cottage, Thorpe, Colchester.

CLASS LXVIII.—*To the owner of the best Mare and Foal.*

447.—First prize, £20, to Sir T. B. Lennard, Bart., of Belhus Aveley, Romford, Essex.

450.—Second prize, £10, to Sir Edward Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk.

CLASS LXIX.—*To the owner of the best Two-years-old Filly.*

No competition.

CLYDESDALE.

CLASS LXX.—*To the owner of the best Stallion, foaled before the 1st of January, 1862.*

455.—First prize, £20, to Anthony Grierson, of Kilhead, Annan, Dumfriesshire.

CLASS LXXI.—*To the owner of the best Stallion, foaled in the year 1862.*

461.—First prize, £15, to David Riddle, of Kilhowie, Duntocher, Dumbartonshire.

459.—Second prize, £10, to Robert Moffat, of Dormansteads, Stapleton, Brampton, Cumberland.

CLASS LXXII.—*To the owner of the best Mare and Foal.*

463.—First prize, £20, to James Marr, of Alderstone, Mid Calder, Midlothian.

464.—Second prize, £10, to John Muir, of Lockfergus, Kircudbright.

CLASS LXXIII.—*To the owner of the best two-years-old Filly.*

466.—First prize, £15, to the Duke of Hamilton and Brandon, Hamilton Palace, Hamilton, Lanarkshire.

SHEEP.

LEICESTER.

CLASS LXXIV.—*To the owner of the best Shearling Ram.*

565.—First prize, £20, to John Barton, of Barton House, Malton, Yorkshire.

553.—Second prize, £10, to Thomas Edward Pawlett, of Beeston, Sandy, Beds.

556.—Third prize, Silver Medal, to Lieut.-Col. William Inge, of Thorpe Constantine, Tamworth, Staffordshire.

566.—Highly commended, John Barton, of Barton House, Malton, Yorkshire.

CLASS LXXV.—*To the owner of the best Ram of any other age.*

- 600.—First prize, £20, to Robert Ward Creswell, Ravenstone, Ashby-de-la-Zouch, Leicestershire.
 599.—Second prize, £10, to Robert Ward Creswell, of Ravenstone, Ashby-de-la-Zouch, Leicestershire.
 605.—Third prize, Silver Medal, to George Turner, of Beacon Downes, Exeter, Devonshire.
 606.—Highly commended, George Turner, of Beacon Downes, Exeter, Devonshire.
 601.—Commended, Robert Ward Creswell, of Ravenstone, Ashby-de-la-Zouch, Leicestershire.

CLASS LXXVI.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

- 611.—First prize, £15, to Samuel Wiley, of Brandsby, York.
 607.—Second prize, £10, to Lieut.-Colonel William Inge, of Thorpe Constantine, Tamworth, Staffordshire.
 608.—Commended, Thomas Morris, of the Chase, Ulceby, Lincolnshire.

COTSWOLD.

CLASS LXXVII.—*To the owner of the best Shearling Ram.*

- 614.—First prize, £20, to Edward Handford, of Sierford, Cheltenham, Gloucestershire.
 639.—Second prize, £10, to John Wells, of Hampnett, Northleach, Gloucestershire.
 613.—Third prize, Silver Medal, to Edward Handy, of Sierford, Cheltenham, Gloucestershire.
 636.—Commended, William Lane, of Bromfield Farm, Northleach, Gloucestershire.

CLASS LXXVIII.—*To the owner of the best Ram of any other age.*

- 648.—First prize, £20, to Thomas Beale Browne, Salperton Park, Northleach, Gloucestershire.
 649.—Second prize, £10, to William Lane, of Bromfield Farm, Northleach, Gloucestershire.
 647.—Third prize, Silver Medal, Thomas Beale Browne, Salperton Park, Northleach, Gloucestershire.
 651.—Commended, William Lane, of Bromfield Farm, Northleach, Gloucestershire.

CLASS LXXIX.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

- 656.—First prize, £15, to John Wills, of Hampnett, Northleach, Gloucestershire.
 653.—Second prize, £10, to William Lane, of Bromfield Farm, Northleach, Gloucestershire.
 654.—Highly commended, William Lane, of Bromfield Farm, Northleach, Gloucestershire.

LINCOLN AND OTHER LONG-WOOLLED.

Not qualified to compete as Leicesters or Cotswolds.

CLASS LXXX.—*To the owner of the best Shearling Ram.*

- 678.—First prize, £20, to Robert Wright, of Norton Heath, Norton, Lincolnshire.
 677.—Second prize, £10, to Robert Wright, of Norton Heath, Norton, Lincolnshire.

671.—Third prize, a Silver Medal, to John Lynn, of Church Farm, Stroxtun, Grantham, Lincolnshire.

674.—Commended, Thomas Bampstead Marshall, of Branston, near Lincoln.

CLASS LXXXI.—*To the owner of the best Ram of any other age.*

685.—First prize, £20, to Thomas Bampstead Marshall, of Branston, near Lincoln.

687.—Second prize, £10, to Thomas Bampstead Marshall, of Branston, near Lincoln.

684.—Commended, Robert Wright, of Norton Heath, Norton, Lincolnshire.

CLASS LXXXII.—*To the owner of the best Pen of five Shearling Ewes, of the same flock.*

690.—First prize, £—, Robert Geo. Frederick Howard, of Temple Boner, Lincoln.

692.—Second prize, £10, Thomas Bampstead Marshall, of Branston, near Lincoln.

691.—Commended, Robert George Frederick Howard, Temple Boner, Lincoln.

OXFORDSHIRE DOWN.

CLASS LXXXIII.—*To the owner of the best Shearling Ram.*

700.—First prize, £20, to George Wallis, of Old Shifford, Bampton, Faringdon, Oxfordshire.

704.—Second prize, £10, to George Wallis, of Old Shifford, Bampton, Faringdon, Oxfordshire.

702.—Third prize, Silver Medal, to George Wallis, of Old Shifford, Bampton, Faringdon, Oxfordshire.

707.—Commended, John Bryan, of Southleigh, Witney, Oxfordshire.

711.—Commended, John Bryan, of Southleigh, Witney, Oxfordshire.

CLASS LXXXIV.—*To the owner of the best Ram of any other age.*

722.—First prize, £20, to George Wallis, of Old Shifford, Bampton, Faringdon, Oxfordshire.

723.—Second prize, £10, to George Wallis, of Old Shifford, Bampton, Faringdon, Oxfordshire.

721.—Commended, George Wallis, of Old Shifford, Bampton, Faringdon, Oxfordshire.

CLASS LXXXV.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

730.—First prize, £15, to Henry Overman, Weasenham, Rougham, Norfolk.

729.—Second prize, £10, to the Duke of Marlborough, of Blenheim Palace, Woodstock, Oxfordshire.

728.—Highly commended, the Executors of the late Samuel Treadwell, of Upper Winchendon, Waddesdon, Aylesbury, Buckinghamshire.

727.—Commended, William Hemming, of Coldicott, Moreton-in-the-Marsh, Gloucestershire.

SOUTH-DOWN.

CLASS LXXXVI.—*To the owner of the best Shearling Ram.*

739.—First prize, £20, to Lord Walsingham, of Merton Hall, Thetford, Norfolk.

737.—Second prize, £10, to Lord Walsingham, of Merton Hall, Thetford, Norfolk.

—Third prize, a Silver Medal, William Rigden, of Hove, Brighton.

736.—Highly commended, Lord Walsingham, of Merton Hall, Thetford, Norfolk.

740.—Commended, Lord Walsingham, of Merton Hall, Thetford, Norfolk.

CLASS LXXXVII.—*To the owner of the best Ram of any other age.*

760.—First prize, £20, to John Waters, of New Court, Eastbourne, Sussex.

762.—Second prize, £10, William Rigden, of Hove, Brighton, Sussex.

766.—Third prize, a Silver Medal, the Duke of Richmond, of Goodwood, Chichester.

769.—Highly commended, the Earl of Radnor, of Coleshill House, Highworth.

763.—Commended, William Rigden, of Hove, Brighton, Sussex.

CLASS LXXXVIII.—*To the owner of the Pen of Five Shearling Ewes of the same flock.*

772.—First prize, £15, to Lord Walsingham, of Merton Hall, Thetford, Norfolk.

771.—Second prize, £10, to the Duke of Richmond, Goodwood, Chichester, Sussex.

775.—Highly commended, the Earl of Radnor, Coleshill House, Highworth.

773.—Highly commended, Lord Walsingham, of Merton Hall, Thetford, Norfolk.

774.—Highly commended, Sir Thomas Barrett Leonard, Bart., of Belhus Hockley, Romford, Essex.

770.—Highly commended, the Duke of Richmond, Goodwood, Chichester, Sussex.

SHROPSHIRE.

CLASS LXXXIX.—*To the owner of the best Shearling Ram.*

784.—First prize, £20, to Edward Thornton, of Pitchford, Shrewsbury, Shropshire.

814.—Second prize, £10, to Henry Matthews, of Montford, Shrewsbury, Shropshire.

816.—Third prize, Silver Medal, to John Coxon, of Freeford, Lichfield, Staffordshire.

800.—Highly commended, Sampson Byrd, of the Lees Farm, Stafford.

779.—Highly commended, Thomas Mansell, of Adcott, Shrewsbury, Salop.

783.—Highly commended, Edward Thornton, of Pitchford, Shrewsbury, Shropshire.

811.—Highly commended, Thomas Horton, of Harnage Grange, Shrewsbury, Shropshire.

815.—Highly commended, John Coxon, of Freeford, Lichfield, Staffordshire.

817.—Highly commended, Henry Smith, of Sutton Maddock, Shiffnal, Shropshire.

778.—Commended, Thomas Mansell, of Adcott, Shrewsbury, Salop.

793.—Commended, Edward Holland, M.P., of Dumbleton Hall, Evesham, Gloucestershire.

798.—Commended, Sampson Byrd, of the Lees Farm, Stafford.

808.—Commended, Thomas Horton, of Harnage Grange, Shrewsbury, Shropshire.

820.—Commended Henry Smith, of Sutton Maddock, Shiffnal, Shropshire.

CLASS XC.—*To the owner of the best Ram, of any other age.*

824.—First prize, £20, to John Coxon, of Freeford, Lichfield, Staffordshire.

825.—Second prize, £10, to Pryce William Bowen, of Shrawardine Castle, Shrewsbury, Shropshire.

827.—Highly commended, Joseph Simpson, of Spofforth Park, Wetherby, Yorkshire.

828.—Highly commended, Edward Holland, Esq., M.P., of Dumbleton Hall, Evesham, Gloucestershire.

829.—Commended, John Hanbury, Bradburne, of Pipe Place, Lichfield, Staffordshire.

CLASS XCI.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

835.—First prize, £15, to Henry Matthews, of Montford, Shrewsbury, Shropshire.

832.—Second prize, £10, to Henry Smith, of Sutton Maddock, Shiffnall, Shropshire.

841.—Third prize, a Silver Medal, Edward Holland, Esq., M.P., of Dumbleton Hall, Evesham, Gloucestershire.

837.—Highly commended, James and Edward Crane, of Shrawardine, Shrewsbury, Shropshire.

836.—Highly commended, Henry Matthews, of Montford, Shrewsbury, Shropshire.

834.—Highly commended, Lord Wenlock, of Bourton Cottage, Much Wenlock, Shropshire.

838.—Commended, James and Edward Crane, of Shrawardine, Shrewsbury, Shropshire.

HAMPSHIRE AND OTHER SHORT-WOOLLED.

Not qualified to compete as Southdowns or Shropshires.

CLASS XCII.—*To the owner of the best Shearling Ram.*

847.—First prize, £20, to William Browne Canning, of Elston Hall, Devizes, Wiltshire.

845.—Second prize, £10, Stephen King, Bockhampton, Lambourne, Berkshire.

844.—Highly commended, Stephen King, of Bockhampton, Lambourne, Berkshire.

846.—Commended, William Browne Canning, of Elston Hill, Devizes, Wiltshire.

CLASS XCIII.—*To the owner of the best Ram of any other age.*

860.—First prize, £20, to William Humfrey, of Oak Ash, Chaddleworth, Wantage, Berkshire.

857.—Second prize, £10, to Christopher Rose, of Zeal's Green, Mere, Wiltshire.

CLASS XCIV.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

863.—First prize, £15, to William Browne Canning, of Elston Hill, Devizes, Wiltshire.

867.—Second prize, £10, to William Humfrey, of Oak Ash, Chaddleworth, Wantage, Berkshire.

862.—Specially commended, Stephen King, of Bockhampton, Lambourne, Berkshire.

MOUNTAIN CHEVIOTS.

CLASS XCV.—*To the owner of the best Shearling Ram.*

879.—First prize, £15, to Thomas Elliot, of Hindhope, Jedburgh, Roxburghshire.

878.—Second prize, £5, to John McGregor, of Riggshead, Lochmaben, Dumfries.

869.—Third prize, a Silver Medal, to Robert Boreland, of Auchencairn, Thornhill, Dumfries.

873.—Highly commended, James Paterson, of Terrona, Langholm, Dumfriesshire.

CLASS XCVI.—*To the owner of the best Ram of any other age.*

882.—First prize, £15, to John Robson, of Byrness, Rochester, Northumberland.

884.—Second prize, £5, to John Robson, of Byrness, Rochester, Northumberland.

883.—Commended, John Robson, of Byrness, Rochester, Northumberland.

CLASS XCVII.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

890.—First prize, £10, to Robert Borland, of Auchencairn, Thornhill, Dumfries.

893.—Second prize, £5, to Thomas Elliot, of Hindhope, Jedburgh, Roxburghshire.

892.—Robert Shortreed, of Attonburn, Kelso, Roxburghshire.

BLACKFACED.

CASE XCVIII.—*To the owner of the best Shearling Ram.*

897.—First prize, £15, to William Ward, of Forest Hall, Kendal, Westmoreland.

895.—Second prize, £5, to Henry Walton, of Appletree Shield, West Allan, Haydon Bridge, Northumberland.

899.—Highly commended, Alexander Wearing Long, of Mint Cottage, Kendal, Westmoreland.

CLASS XCIX.—*To the owner of the best Ram of any other age.*

909.—First prize, £15, to William Ward, of Forest Hall, Kendal, Westmoreland.

907.—Second prize, £5, to George Hedley, of Otterstone Lee, Bellingham, Northumberland.

908.—Commended, Charles Summers, of Whitfield, Haydon Bridge, Northumberland.

CLASS C.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

911.—First prize, £10, to Christopher Armstrong, of Ashgillside, Alston, Cumberland.

913.—Second prize, £5, to John and William Dodd, of Padaburn, Rosehill, Northumberland.

912.—Commended, William Ward, of Forest Hall, Kendal, Westmoreland.

PIGS.

CLASS CI.—*To the owner of the best Boar of a large white breed.*

969.—First prize, £10, to Henry Harrison, of Cross Hills, Leeds, Yorkshire.

968.—Second prize, £5, to Richard Elmshurst Duckering, of Northorpe, Kirton Lindsey, Lincolnshire.

966.—Commended, John Hickman, of 21, Prospect Place, Hull, Yorkshire.

CLASS CII.—*To the owner of the best Boar of a small white breed.*

973.—First prize, £10, to George Mangles, of Givendale, Ripon, Yorkshire.

981.—Second prize, £5, to Thomas Dunlop Findley, of Easterhill, Glasgow.

979.—Third prize, a Silver Medal, to Samuel Geater Stearn, of Brandeston, Wickham Market, Suffolk.

978.—Highly commended, William Parker, of Golden Lion Inn, Leeds Road, Bradford.

CLASS CIII.—*To the owner of the best Boar of a small black breed.*

984.—First prize, £10, to George Mumford Sexton, of Wherstead Hall, Ipswich, Suffolk.

986.—Second prize, £5, to George Mumford Sexton, of Wherstead Hall, Ipswich, Suffolk.

CLASS CIV.—*To the owner of the best Boar of the Berkshire breed.*

- 999.—First prize, £10, to the Rev. Henry G. Baily, of Swindon, Wilts.
 1000.—Second prize, £5, to the Rev. Henry G. Baily, of Swindon, Wilts.
 997.—Third prize, Silver Medal, to Arthur Stewart, of Saint Bridge, Gloucester.
 992.—Highly commended, George Mander Allender, of Lee Grange, Winslow, Buckinghamshire.

CLASS CV.—*To the owner of the best Boar of a breed not eligible for the preceding classes,*

- 1006.—First prize, £10, to William Bradley Wainman, of Carhead, Cross Hills, Yorkshire.
 1009.—Second prize, £5, to Charles William Graham, of 1, Blackburn's Buildings, York Road, Leeds, Yorkshire.

CLASS CVI.—*To the owner of the best Breeding Sow of a large white breed.*

- 1012.—First prize, £10, to William Bradley Wainman, of Carhead, Crosshills, Yorkshire.
 1011.—Second prize, £5, to William Bradley Wainman, of Carhead, Crosshills, Yorkshire.
 1016.—Third prize, Silver Medal, to John Hickman, of 21, Prospect Street, Hull.
 1021.—Commended, Stephen Blakey, of Westgate, Otley, Yorkshire.

CLASS CVII.—*To the owner of the best Breeding Sow of a small white breed.*

- 1026.—First prize, £10, to William Bradley Wainman, of Carhead, Cross Hills, Yorkshire.
 1035.—Second prize, £5, to Samuel Geater Stearn, of Brandeston, Wickham Market, Suffolk.
 1038.—Third prize, a Silver Medal, to Thomas Dunlop Findlay, of Easton Hill, Edinburgh.

CLASS CVIII.—*To the owner of the best Breeding Sow of a small black breed.*

- 1047.—First prize, £10, to George Mumford Sexton, of Wherstead Hall, Ipswich, Suffolk.
 1049.—Second prize, £5, to Samuel Geater Stearn, of Brandeston, Wickham Market, Suffolk.
 1050.—Third prize, a Silver Medal, to Samuel Geater Stearn, of Brandeston, Wickham Market, Suffolk.
 1051.—Highly commended, Thomas Crisp, of Butley Abbey, Wickham Market, Suffolk.

CLASS CIX.—*To the owner of the best Breeding Sow of the Berkshire breed.*

- 1063.—First prize, £10, to Arthur Stewart, of St. Bridge, Gloucester.
 1061.—Second prize, £5, to Arthur Stewart, of St. Bridge, Gloucester.
 1057.—Third prize, a Silver Medal, to George Mander Allender, of Lee Grange, Winslow, Bucks.
 1066.—Highly commended, John Lynce Fletcher, of the Royal Agricultural College, Cirencester, Gloucestershire.

CLASS CX.—*To the owner of the best Breeding Sow of a breed not eligible for the preceding classes.*

- 1070.—First prize, £10, to William Bradley Wainman, of Carhead, Cross Hills, Yorkshire.
 1069.—Second prize, £5, to William Bradley Wainman, of Carhead, Cross Hills, Yorkshire.
 1071.—Third prize, a Silver Medal, to Henry Keyworth, Woodhouse Moor, Woodhouse, Leeds.

CLASS CXI.—*To the owner of the best pen of three Breeding Sow-Pigs of a large white breed, of the same litter, above four and under eight months old.*

1079.—First prize, £10, to William Bradley Wainman, of Carhead, Cross Hills, Yorkshire.

1080.—Second prize, £5, to John Hickman, of 21, Prospect Place, Hull.

CLASS CXII.—*To the owner of the best pen of three Breeding Sow-Pigs of a small white breed, of the same litter, above four and under eight months old.*

1082.—First prize, £10, to Col. the Hon. Edward G. D. Pennant, M.P., Penrhyn Castle, Bangor, Carnarvonshire.

1083.—Second prize, £5, to Lord Wenlock, of Escrich Park, Escrick, Yorkshire.

CLASS CXIII.—*To the owner of the best pen of three breeding Sow Pigs of a small black breed, of the same litter, above four and under eight months old.*

1084.—First prize, £10, to George Mumford Sexton, of Wherstead Hall, Ipswich, Suffolk.

1085.—Second prize, £5, to Samuel Geater Stearn, of Brandestone, Wickham Market, Suffolk.

CLASS CXIV.—*To the owner of the best pen of three Breeding Sow-Pigs of the Berkshire breed, of the same litter, above four and under eight months old.*

1086.—First prize, £10, to John King Tombs, of Langford, Lechlade, Gloucestershire.

1089.—Second prize, £5, to Joseph Druce, of Eynsham, Oxford.

1063.—Highly commended, William James Sadler, of Bentham Calcutt, Cricklade, Wiltshire.

CLASS CXV.—*To the owner of the best pen of three Breeding Sow Pigs of a breed not eligible for the preceding classes of the same litter, above four and under eight months old.*

1095.—First prize, £10, to George Mangles, of Givendale, Ripon, Yorkshire.

1096.—Second prize, £5, to Joseph Wilson, of Manor House, Woodhorn, Morpeth.

SPECIAL PRIZES, AMOUNTING TO £410.

OFFERED BY THE LOCAL COMMITTEE OF NEWCASTLE-UPON-TYNE.

CATTLE.

GALLOWAY.

CLASS CXVI.—*To the owner of the best Bull, calved previous to the 1st of January, 1863.*

364.—First prize, £20, to William Roper, of Ling Side, Seberham, Cumberland.

367.—Second prize, £10, to William and James Shennan, of Bailig, Kirkcudbright.

366.—Highly commended, Alexander Jardine of Applegarth, Lockerbie, N.B.

362.—Commended, William Kier, of Whithaugh, Newcastleton, Roxburghshire.

CLASS CXVII.—*To the owner of the best Bull, calved after the 1st of January, 1863.*

371.—First prize, £20, to Sir Frederick U. Graham, Bart, of Netherby, Longtown, Cumberland

270.—Second prize, £10, to John Cunningham, of Whitecairn, Dalbeattie, Kirkcudbright.

369.—Highly commended, James Graham of Meikle Kullock, Dalbeattie Kirkcudbrightshire.

CLASS CXVIII.—*To the owner of the best Cow, above three years old.*

374.—First prize, £15 to James Graham, of Meikle Culloch, Dalbeattie, Kirkcudbrightshire.

375.—Second prize, £5, to John Cunningham, of Whitecairn, Dalbeattie, Kirkcudbrightshire.

CLASS CIX.—*To the owner of the best Heifer, calved previous to the 1st of January, 1863.*

378.—First prize, £10, to James Graham, of Meikle Culloch, Dalbeattie, Kirkcudbrightshire.

CLASS CXX.—*To the owner of the best Heifer, calved after the 1st of January, 1863.*

379.—First prize, £10, to James Graham, of Meikle Culloch, Dalbeattie, Kirkcudbrightshire.

391.—Second prize, £5, to James Cunningham, of Tarbreoch, Dalbeattie, Dumfriesshire.

380.—Commended, James Cunningham, of Tarbreoch, Dalbeattie, Dumfriesshire.

SHEEP.

BORDER LEICESTER.

CLASS CXXI.—*To the owner of the best Shearling Ram.*

924.—First prize, £15, to George Simson, of Courthill, in Berwickshire, Kelso, Roxburghshire.

916.—Second prize, £5, to Thomas Simson, of Blainslie, Lauder, Roxburghshire.

921.—Third prize, George Simson, of Courthill, Berwickshire, Kelso, Roxburghshire.

914.—Commended, Thomas Simson, of Blainslie, Lauder, Roxburgh.

CLASS CXXII.—*To the owner of the best Ram of any other age.*

939.—First prize, £15, to Thomas Simson, of Blainslie, Lauder, Roxburghshire.

937.—Second prize, £5, to Messrs. Joseph Wilson and John Angus, of Whitefield, Northumberland.

CLASS CXXIII.—*To the owner of the best Pen of Five Shearling Ewes, of the same flock.*

944.—First prize, £10, to George Simson, of Courthill, in Berwickshire, Kelso, Roxburghshire.

943.—Second prize, £5, to John Angus, of Whitefield, Morpeth, Northumberland.

CLASS CXXIV.—*To the owner of the best Pen of Five Ewes, of any other age, of the same flock.*

947.—First prize, £10, to William Purvey, of Lintow, Burnfoot, Kelso, Roxburghshire.

946.—Second prize, £5, to John Angus, of Whitefield, Morpeth, Northumberland.

Ewes exhibited in this Class must have reared Lambs during the spring of 1864.

HERDWICK.

CLASS CXXV.—*To the owner of the best Shearling Ram.*

949.—First prize, £15, to George Browne, of Troutbeck, Windermere, Westmoreland.

948.—Second prize, £5, to Richard Browne, of Troutbeck, Windermere, Westmoreland.

950.—Highly commended, Edward Nelson, of Gatesgarth, Buttermere, Cocker-
mouth, Cumberland.

CLASS CXXVI.—*To the owner of the best Ram of any other age.*

956.—First prize, £15, to Edward Nelson, of Gatesgarth, Buttermere, Cocker-
mouth, Cumberland.

953.—Second prize, £5, to George Browne, of Troutbeck, Windermere, West-
moreland.

955.—Highly commended, Daniel Crosthwaite, of Hallgarth, Keswick, Cum-
berland.

CLASS CXXVII.—*To the owner of the best Pen of Five Shearling Ewes, of the
same flock.*

960.—First prize, £10, to George Browne, of Troutbeck, Windermere, West-
moreland.

962.—Second prize, £5, to Edward Nelson, of Gatesgarth, Buttermere, Cocker-
mouth, Cumberland.

963.—Commended, George Irving, of Wythrop Hall, Cockermouth, Cum-
berland.

HORSES.

CLASS CXXVIII.—*To the owner of the best HUNTER—Mare or Gelding, five
or six years old.*

474.—First prize, £20, to Sir Frederick U. Graham, Bart., of Netherby Long-
town, Cumberland.

468.—Second prize, £5, to John B. Booth, of Killerby, Catterick, Yorkshire.

472.—Commended, Thomas Sutton, of Alwent Hall, Darlington.

CLASS CXXIX.—*To the owner of the best HUNTER—Mare or Gelding, four
years old.*

494.—First prize, £20, to William Hardisty Clark, of Hook, Howdon, York-
shire.

483.—Second prize, £5, to Robert Norman and Son, of High Close, Aspatria,
Cumberland.

487.—Commended, Joseph Whitwell Pease, of Woodlands, Darlington.

CLASS CXXX.—*To the owner of the best HUNTER—Colt or Filly, three years
old.*

499.—First prize, £10, to James B. Boyd, of Doddington, Wooler, Northum-
berland.

503.—Commended, Richard Wellington Hodgson, of North Dene, Gateshead,
County of Durham.

CLASS CXXXI.—*To the owner of the best ROADSTER—Stallion.*

509.—First prize, £15, to Thomas Brown, of Butterwick, Barton-le-Street,
Malton, Yorkshire.

CLASS CXXXII.—*To the owner of the best ROADSTER—Mare or Gelding,
above four years, and not exceeding twelve years old; and also not exceed-
ing 15 hands.*

514.—Prize of £10, to Richard Forster, of White House, Gateshead, Durham.

515.—Commended, Joseph Whitwell Pease, of Woodlands, Darlington.

CLASS CXXXIII.—*To the owner of the best PONY—Gelding, of any age, not
exceeding 14 hands.*

520.—Prize of £5, to Rev. John Alexander Blakett Ord, of Whitfield Hall,
Haydon Bridge.

519.—Commended, Christopher Dove Barker, of 12, Carlton Place, Newcastle-
upon-Tyne, Northumberland.

CLASS CXXXIV.—*To the owner of the best Mountain Mare Pony, of any age, not exceeding 13½ hands, with foal at foot or stinted.*

524.—Prize of £10, Thomas Ramsay, of Sherburn Green, Gateshead, Durham.

CLASS CXXXV.—*To the owner of the best Pair of Mares or Geldings, or Mare and Gelding, for Agricultural purposes.*

525.—First prize, £10, to Charles Mark Palmer, of Whitley Park, Newcastle-upon-Tyne, Northumberland.

527.—Highly commended, His Grace the Duke of Hamilton and Brandon, of Hamilton Palace, Hamilton, Lanarkshire.

531.—Commended, Augustus Henry Hunt, of Birtley House, Chester-le-Street.

CLASS CXXXVI.—*To the owner of the best Gelding or Filly, three years old for Agricultural purposes.*

534.—First prize, £10, to His Grace the Duke of Hamilton and Brandon, of Hamilton Palace, Hamilton, Lanarkshire.

533.—Second prize, £5, to John Muir, of Lochfergus, Kirkcudbright, Kirkcudbrightshire.

CLASS 137.—*To the owner of the best Gelding, two years old, for Agricultural purposes.*

538.—First prize, £5, to John Laws, of Kearsley, Matfen, Northumberland.

CLASS CXXXVIII.—*To the owner of the best Gelding or Filly, one year old, for Agricultural purposes.*

540.—First prize, £10, to Joseph Laycock, of Gosforth, Newcastle-upon-Tyne, Northumberland.

539.—Second prize, £5, to Jonathan Melvin Pattinson, of Norwood, Gateshead, Durham.

541.—Commended, Nathaniel Clarke, of Beamish Park, Fence Houses, Chester-le-Street, Durham.

Extracts from British and Foreign Journals.

THE QUESTION OF THE DISQUALIFICATION OF POLLED CATTLE AT AGRICULTURAL SHOWS IN CONSEQUENCE OF THEIR HAVING "SLUG-HORNS."

Copy of correspondence relating to LORD SONDES' first prized Polled Bull, at the Norfolk Agricultural Show held at Lynn, June 15th, 1864.

ELMHAM, THETFORD; 16th June, 1864.

DEAR SIR,—You will doubtless have seen in the papers that the bull I bought of you for Lord Sondes, was awarded the first prize in his class, yesterday, at the Lynn Show, but was disqualified for Sir Willoughby Jones's cup, in consequence of having (as decided by a majority of judges) "slug horns." According to this decision, the bull is not a pure-bred animal.

All sorts of surmises and remarks were indulged in on the subject; one person told Lord Sondes, he was confident the horns had been extracted when the bull was young; and others, with equal confidence, stated that the horns had been burned out since. Although I know all these statements to be utterly false and without any foundation, still, I am directed by Lord Sondes to apply to you, as the breeder, to know—

1stly. Is the bull a pure-bred polled animal?

2ndly. Did you cause his horns or “slugs” to be removed, previous to his lordship becoming the owner of the animal?

You will much oblige me by replying to these queries at your earliest convenience.

I am, dear Sir, yours faithfully,
THOMAS FULCHER.

Mr. T. W. GEORGE,
Eaton.

P.S. The bull has a kind of horny excrescence, which cannot, in my view, be called either horn or “slug,” not being attached to the bones of the skull.

EATON, NORWICH; *June 18th, 1864.*

DEAR SIR,—In reply to the first query, in your letter of the 16th, received this morning, I cannot do better than send the pedigree of the bull in question.

His sire was out of a home-bred cow, descended from my late father's stock, and by a bull lent me for the season by H. Birkbeck, Esq., which he bought at Mr. Etheridge's sale, at Starston.

His dam, a cow descended also from my father's stock, and by a bull lent me by G. S. Kett, Esq., which he bought at the late Sir E. Kerrison's sale.

As far as my father's stock were bred, I know that he would not admit any cross-bred animal. And it was so much a difficulty with him to obtain strange and pure blood to satisfy him, that latterly he bred very close.

The father of your bull, of Mr. Etheridge's stock, I have now. He is a worker, very poor, and out of shape, but of very nice quality.

Sir E. Kerrison's bull, before-named, was a coarse-headed animal, with good back and frame, but much coarser than Mr. Etheridge's, and not so good in colour.

In reply to your second query, I wish to say that I never removed, or caused to be removed, or in any way interfered with the horns or excrescences you complain of; they were,

at the time you bought the bull, in the natural state of growth. You were aware of their existence, and I made no attempt to conceal them.

Hoping this explanation will be satisfactory,

I remain, dear Sir, yours faithfully,

T. W. GEORGE.

To Mr. THOMAS FULCHER,
Elmham.

CRINGLEFORD; *June 18th, 1864.*

DEAR SIR,—My brother has shown me your letter of this morning, and as far as his and my word may be relied on, the bull in question is descended from a line of ancestry of the most pure polled blood-red, free from all cross of horn or “slug,” for more than fifty years.

My father commenced the breeding of these blood-red home-breds at least for the length of time before-named, and I think they originally came from Mr. Reeve, of Wighton, and Mr. England, of Binham. During the life of my father, and more recently of my brother, I cannot call to mind more than two or three instances in which there was any infusion of fresh blood, and that always from pure polled bulls; and if I except the more recent instance of Mr. Birkbeck’s bull that he allowed my brother the use of, and I think he came from the herd of the late Sir E. Kerrison, Bart., we never considered we derived any benefit therefrom. I expect there was a deal of the stain of my father’s blood in the late Sir E. Kerrison’s and Mr. Badham’s stock, for I know that some bulls and heifers went formerly through Mr. Etheridge, of Starston, in that direction; but I have lost recollection, and I dare say Mr. Etheridge could tell you more than I can about it. Those of my brother’s have been bred very close in and in for the period before-named, for the reason, that bulls could not be obtained possessing all the characteristics of the pure polled breed. The bull in question, if he have any “slugs,” it must be by pure accident only, for a more pure-bred animal I imagine it would be difficult to trace out. We have heard of such things as the horns being taken off, but we know nothing of such practices here, and my brother has men on the farm who have been among the stock, and who must know if such there had been; and I know you are open to make the fullest inquiry.

I congratulate you on your general success at the Show.

I should be glad if I could have stood before you in the class of ewe lambs.

I am, dear Sir, yours truly,

GEO. GEORGE.

Mr. FULCHER.

ELMHAM, THETFORD; *June 17th, 1864.*

To PROFESSOR SIMONDS, *Veterinary Inspector to the Royal Agricultural Society.*

SIR,—I am directed by Lord Sondes to submit the following case to you.

The Norfolk Agricultural Association offers a prize of £10 for the “best Norfolk and Suffolk polled red bull;” a gentleman offers a silver cup also for the best bull, but with this condition, “Horns or Slugs to disqualify for this cup.”

The prize of £10 is awarded to, and the cup withheld from, the same animal, in consequence of a majority of the judges having decided that the bull has slug horns or slugs.

Your opinion is requested as to the literal meaning of the term “slug.” Can a horny excrescence in the skin, not attached to the bones of the skull, be called a slug?

I am, your obedient servant,

THOMAS FULCHER,
Steward to Lord Sondes.

ROYAL VETERINARY COLLEGE, GREAT COLLEGE STREET,
CAMDEN TOWN, LONDON, N. W.;
June 18th, 1864.

SIR,—I beg to inform you, in reply to your note, that the term “slug-horn,” or “slug,” is applied to a horny development, continuous with the skin covering of the frontal bone of the ox, but unconnected therewith by a bony base. This term is also used without reference to the length or shape of the horny production. Rudimentary horns are usually regarded as having a bony base. According to these definitions, any horny growth into which a projection from the frontal bone does not extend so as to constitute its base, is a “slug horn.” Although this is so, still I think that in such a case as the one in dispute, neither my opinion, nor that of any other person, should be regarded as final, until an examination had been made of the animal itself.

I am, Sir, your obedient servant,

JAS. B. SIMONDS.

Mr. T. FULCHER.

Subsequently to the receipt of this note, arrangements were made for Professor Simonds to visit Elmham and

examine the bull. This being done, he forwarded, a few days afterwards, the following report :

ROYAL VETERINARY COLLEGE;
June 29th, 1864.

IN accordance with instructions received from the Right Hon. Lord Sondes, Elmham Hall, Norfolk, I have examined a red, home-bred, polled bull, aged three years and eight months, which was shown at the meeting of the Norfolk Agricultural Society, held at Lynn, on the 15th inst., and awarded the first prize, as being the best animal in his class. My examination was made in consequence of an objection being raised against the bull being also awarded a silver cup, in addition to the prize which was given for the best animal, but with the proviso, that "*horns or slugs*," should disqualify; the objector alleging that the bull had "*slugs*," and, as such, he was not a pure-bred polled animal.

The term "*slugs or slug-horns*" is one which denotes the development of horny matter from the skin covering the frontal bone of the ox, which is usually short and pendulous, and unlike a true, or even a rudimentary horn, unconnected with the frontal bone by a continuous base. This term is also used without reference to the size or shape of the horny production.

I find in the bull, in question, that there are no such horny growths, but merely two oval-shaped, hairless spots, occupying the usual site of "*slugs*," and about an inch and a quarter in their long, and three quarters of an inch in their short diameter. These spots scarcely project from the plane of the forehead, and are covered with ordinary cuticle—the normal outer skin—which is so thin that it can be easily detached from the cutis—true skin—by friction or picking. At the very utmost, these hairless spots can only be regarded as *rudimentary "slugs."* In my opinion they are slight natural variations, and therefore no proofs of the animal being cross-bred, nor does he show by the form of his head, general development, or colour, that he is other than a pure-bred, polled bull. For breeding purposes, this deviation from the ordinary course of nature would appear to be a matter of no practical importance, as I find, on a close examination of his stock, consisting of four young bulls, and seven heifers in particular, there is not the slightest indication of the spots being hereditary.

It may be necessary to add, that a system has of late years been adopted of removing the horns of young cattle, so as to give them the appearance of being naturally polled animals,

and prevent them also from doing injury to others. I am, however, fully satisfied by my examination, that no such operation has ever been performed on this bull, either before or since he came into his lordship's possession; and therefore that these hairless spots are in their original and natural condition.

JAS. B. SIMONDS,
Professor of Cattle Pathology, &c.

ROYAL VETERINARY COLLEGE, GREAT COLLEGE STREET,
CAMDEN TOWN, LONDON, N.W.;

June 30th 1864.

DEAR SIR,—I send herewith the report relative to my examination of the bull. I am sorry that unforeseen circumstances connected with professional matters, have prevented my attending to this at an earlier date.

It required care and thought, which I could only give it to-day.

Yours, very truly,

JAS. B. SIMONDS.

Mr. FULCHER.

CORRESPONDENCE RESPECTING THE VACCINATION OF SHEEP.

THE following correspondence, arising out of a lecture recently delivered by me on the subject of the smallpox of sheep, is reproduced here, it being important that the fullest publicity should be given to the proceedings of the parties concerned in the important question of the vaccination of sheep.

J. B. S.

To the Editor of the Mark Lane Express.

SIR,—I feel that it is only due to the memory of my late father to contradict some statements made by Professor Simonds, in his address to the Royal Agricultural Society, in Hanover Square, on Smallpox in Sheep. I have no wish to enter into any discussion upon the subject of vaccination; but I cannot allow some remarks which he has made relative to my father to pass unnoticed, they being untrue.

First.—Mr. Simonds says, "he does not believe Mr. Overman's sheep were ever vaccinated." It is to be regretted that Mr. Simonds should have assailed the statement of one who, being gone, is unable himself to refute it; but I,

as Mr. Simonds justly observes, "knew all about it," and I equally maintain that my father's sheep were vaccinated.

Secondly.—Mr. Simonds says, "Mr. Overman sent two sheep, after being pressed to do so, to the farm of a neighbour, in whose flock the disease existed, and these two sheep were both inoculated on that farm; one of them by a farmer who, I do not hesitate to say, at that time performed the operation of inoculating far better than many so-called veterinary practitioners—I mean Mr. Cooke, of Litcham. Mr. Cooke inoculated one of the sheep of Mr. Overman, to which I have just alluded; and Mr. Baldwin, a veterinary surgeon of Fakenham, inoculated the other. Both sheep took the disease, and passed through its several stages, and the result was in no way different from what was observed in hundreds of other sheep that were unprotected or even those which were vaccinated. But Mr. Overman, in his letter to the *Norwich Mercury*, absolutely denied that these sheep did take the disease."

Now the real facts are these: my father, far from being *pressed* to send these sheep to his neighbour's flock, did it by his own particular wish, and, as he also most correctly stated in the *Norwich Mercury*, these sheep did NOT take the disease. One never ailed anything; the other died from gangrene in the wound made by that farmer in inoculating the sheep—who, according to Professor Simonds, performed the operation so well.

I wish to add, from my own experience, that this is no isolated case; for several rams were let by my father to those flock-masters who had smallpox in their flock. Of these he never lost one; but few of them took the disease, and those that did had it in the mildest form. I am only too glad that I am able to recollect these circumstances, and also to hold the letters which my father wrote at the time, and so refute the slur which Professor Simonds has thrown on my father, who was known and acknowledged as a man of strict truth and integrity, and one who, dealing with plain facts as they stood, was not a man to be "*pressed into a corner*" by the Professor.

I was glad to find that Government had determined to test vaccination and inoculation fairly, one against the other, but I was surprised that the trial should be entrusted to a person so prejudiced in favour of inoculation as Mr. Simonds. Before a just conclusion can be arrived at, men unbiassed towards either system should be selected for the task.

I remain, sir, yours obediently,

HENRY OVERMAN.

WEASENHAM, ROUGHAM, NORFOLK;
July 8th, 1864.

THE QUESTION OF VACCINATION OF SHEEP.

To the Editor of the Mark Lane Express.

SIR,—My attention has just been directed to a letter of Mr. Henry Overman, in your paper of this week, impugning the statements which I made in a recent lecture on the small-pox of sheep, relative to his late father's proceedings in the matter of the vaccination of sheep in the year 1848.

Before replying generally to Mr. Overman's criticisms, I must state that nothing could be more foreign to my mind than the wish to call in question the integrity of his late father, or to cast any reflections on his character; and, in making the statements which I did, I entirely disclaim having done anything of the kind. The question of the protective power of vaccination in arresting the progress of sheeppox is one of national importance; and, as such, it became necessary, on the occasion in question, that I should give the plain facts of the case relative to the so-called "West Norfolk vaccinations." This was made the more imperative in consequence of Mr. H. Overman *himself* having come publicly forward as the great advocate of vaccination during the late outbreak of sheeppox in Wiltshire.

In quoting from my lecture, Mr. H. Overman remarks, that "Mr. Simonds says he does not believe Mr. Overman's"—that is, his late father's—"sheep were ever vaccinated." Now, I will put this stronger, and say distinctly that, with the exception of about a dozen, which were done with points charged with vaccine lymph, not a single sheep of the whole 1260 were vaccinated; and I challenge Mr. H. Overman, or any one else, to prove that they were. That the whole 1260 sheep were operated upon by a Mr. Wells, surgeon, residing, at that time, at Swaffham, I admit; but, that he *vaccinated* the animals, I deny. The truth is, that Mr. Wells imposed on the credulity of the late Mr. Overman and other large flock-masters, whose names I could give, by pretending to vaccinate their sheep. For this purpose he supplied himself with a "sherry-coloured fluid," which he carried from farm to farm in small phials, nearly filled, for use on the sheep. In proof of this, I may say that some of the correspondents to the local papers, at the time, described it as probably consisting of an irritating agent mixed with "gum-water."* Thus much in reply to that part of Mr. H. Overman's

* See Mr. Edmund Oldfield's letter to the *Norwich Mercury*, Nov. 29th, 1848; and Mr. Wm. Smith's letter to the *Norfolk News*, Dec. 7th. 1848.

communication in which he asserts that his father's sheep were vaccinated, and that my statement to the contrary was "untrue."

With regard to the two sheep which I described as being *inoculated* with success, subsequent to Mr. Wells's operation, Mr. Henry Overman has evidently an imperfect knowledge respecting these animals; besides which he does not correctly quote his late father's statement in the *Norwich Mercury* of November 22nd, 1848. The words are: "One never took the disease, but died of gangrene, ensuing from the inoculation. The other is alive and well, and ailed *very little*" (not, "*never ailed anything*") "from the experiment." Had Mr. Overman any knowledge of the subject of vaccination, or of inoculation, we should not have found him adducing, as proof of the protecting influence of vaccination, that an animal had died from the local action of sheeppox virus artificially introduced into the system. The fact is, then, as I have before stated it, namely, that "both sheep took the disease from the inoculation," and that one died from gangrene of the wound, and the other "ailed very little."

It is apart, altogether from the main question, whether the late Mr. Overman was "pressed to send these two sheep to his neighbour's flock," or whether he "did it by his own particular wish," for I can show, by his letter to me, that, although "pressed," he did not fulfil all he had promised to do to test these so-called vaccinations. On October 20th, 1848, he wrote me as follows:

"WEASENHAM, ROUGHAM.

"SIR,—I have seen Mr. Muskett this morning; and he expresses his surprise that you should have told me, last Monday, that his lambs were suffering from the smallpox in the natural way. Mr. Cook, of Litcham, said the same to Mr. Muskett, on Tuesday last, at Lynn market. Mr. Muskett's statement, made to me this morning, is, 'My lambs have not ailed anything since they recovered from the inoculation several weeks since.' From the appearance of the lambs this morning, I have no hesitation in saying they have recovered; and, therefore, under these circumstances, it would be no test for me to send five lambs there; and, after reconsidering the subject of our conversation, I have determined not to send any of the sheep to the Veterinary College.

"I am, &c.,
"HENRY OVERMAN."

(Signed)

Much—very much—more might be said with reference to the course adopted by the late Mr. Overman in supporting Mr. Wells's extraordinary proceedings in the matter of the vaccination of sheep. I refrain, however, from adding to the length of this letter by further referring to it. I am desirous, above all things, while exposing an error, not to say one word which should offend those now most interested in the question. I can, therefore, but regret that Mr. H. Overman's enthusiasm should have carried him beyond the bounds of discretion, in attacking the statements made in my lecture.

I am, Sir, truly yours,
JAMES B. SIMONDS.

ROYAL VETERINARY COLLEGE;
July 14, 1864.

To the Editor of the Mark Lane Express.

SIR,—To go into all the minutæ of Professor Simonds' letter would take up more of my time than I care to give to the subject. I gave the plain facts in my last, in denial of statements made relative to my father, which was all I wished.

I now beg to state, in answer to Mr. Simonds' "challenge," that the sheep were vaccinated, not from Mr. Wells's so-called "sherry-coloured fluid," but from lymph taken from those sheep (which, by-the-bye, were many more than twelve), and which Mr. Simonds acknowledges were vaccinated with points.

"Much, very much," may indeed be said in reference to the vaccination of the West Norfolk sheep. Vaccination may prove wrong; but all that Professor Simonds can say will never alter the truth of the case, or persuade the West Norfolk farmers to pursue his system of inoculation, about which he has shown so much "enthusiasm" and so little "discretion."

I am, &c.,
HENRY OVERMAN.

WEASENHAM, ROUGHAM, NORFOLK;
July 21, 1864.

To the Editor of the Mark Lane Express.

SIR,—In consequence of my absence from town I have only just become acquainted with the circumstance that Mr. Henry Overman has published a rejoinder, in your paper of the 25th ult., to my reply to his former letter.

In this communication Mr. Overman is bold enough to assert that the 1260 sheep, belonging to his late father, were not operated upon by Mr. Wells with fluid from a bottle; but were vaccinated with lymph obtained from the sheep which had been vaccinated with "points."

Mr. Overman has evidently taken up this position, finding the other—"the bottle vaccinations"—untenable; but, most unfortunately for him, *sheep do not, when vaccinated, yield any lymph for further vaccinations*, as is the case with the human subject, and therefore it is impossible for the 1260 sheep to have been thus done.

Neither time nor inclination admits of my continuing a public correspondence with one who, like Mr. Overman, has shown himself so completely ignorant of the subject of vaccination of sheep, and at the same time so little scrupulous of dealing with assertions as if they were facts, thus misleading the flock-masters of this country on the important question of protecting their sheep against the ravages of smallpox.

I am, Sir, your obedient servant,

JAS. B. SIMONDS.

ROYAL VETERINARY COLLEGE;
Aug. 5, 1864.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF
THE LORDS OF THE COUNCIL AS TO THE VACCINATION
OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VAC-
CINATION IN PREVENTING SHEEP-POX.

By JAMES F. MARSON, Esq., F.R.C.S, Resident Surgeon
of the Smallpox Hospital, and

Professor SIMONDS, of the Royal Veterinary College.

IN the year 1842 an Act of Parliament was passed to allow the importation of foreign cattle and sheep into England upon the payment of 20s. per head for cattle, and 3s. per head for sheep; the importation of foreign cattle and sheep having previously been prohibited. As the numbers imported under this arrangement were found to be but comparatively small, the duty in 1846 was altogether removed. The immediate effect of this free importation was, that in one year the number of sheep sent in was more than four times as many as had been during the previous three years and eight months which directly succeeded the alteration of the law.

This otherwise beneficial measure received, however, a serious drawback in 1847, when some Saxony-Merino sheep exported from Hamburgh and Toning, the chief ports of the Elbe and the Eider, brought with them a disease which, from the close resemblance in its development, progress, and effects to the smallpox of man, has been called the smallpox of sheep. The disease being of an infectious nature subsequently spread among the English flocks, and caused serious losses to be sustained. It was confined, however, after its first introduction, for several weeks to the immediate neighbourhood of London; but by the purchase in Smithfield Market of other sheep in whose systems the disease was latent, the malady was early conveyed to many parts of the country, and chiefly into the eastern counties, through the medium of cattle dealers.

On this visitation the disease continued its ravages for about four years, when it entirely subsided.

After an interval of twelve years, it again appeared, namely, in 1862, and on this occasion it was first noticed in Wiltshire, to a small part of which county it was nearly confined, although by the sale of some lambs it subsequently extended to the county of Berkshire. It did not continue, however, for more than four months, and chiefly in consequence of the energetic measures which were adopted by the Government for its extermination.

The introduction of the disease on the latter occasion could not be traced with certainty, but it was nevertheless ascertained that it had an existence in a portion of Lauenburg and the adjacent states, from which places we had then been for some time importing sheep.

As it was positively stated by several persons that the vaccination of sheep could be beneficially employed to arrest the progress, and also to lessen the fatality of the malady, we undertook, at the request of the Privy Council, the task of proving the correctness or incorrectness of these opinions, and for this purpose we were furnished with 200 sheep by the Government. The sheep consisted of 50 Kents, 50 Exmoors and "half-breeds," and 100 Cheviots. We may here remark, that we found the latter were not quite so well suited for purposes of this kind as the others, in consequence of many of them having so much hair on the inner side of the thighs, the part generally selected for inoculation or vaccination, as being the least covered with wool or hair.

The sheep were at first branded on each side in consecutive numbers from 1 to 200, and for the better carrying out of the experiments they were divided into lots of 50. The

numbers were entered in a book, and against each sheep a record was kept of the effects produced from time to time by the several experiments to which the animals were subjected.

On the 24th of October, 1862, the vaccinations were commenced, and by the 14th of November the whole of the sheep had been vaccinated once over, six punctures being made in each case. Current vaccine lymph, obtained from three different sources, was used: Jennerian, that in use at the Smallpox and Vaccination Hospital, and some which had been originally procured by Mr. Badcock a few years before from inoculating the cow with the virus of human smallpox. No essential difference, however, was observed in the local action produced by these respective lymphs, either on this or any subsequent vaccination of the animals.

In the course of a few weeks we had had ample opportunities of satisfying ourselves of the comparative insusceptibility of sheep to the vaccine disease; for, on the first vaccination being completed, it was found that, out of the 200, effect had only been produced on 71 of the animals. This fact determined us to procure, if possible, some *primary* vaccine lymph from the cow, and for this purpose advertisements were inserted in the *Veterinarian*.

A small supply was obtained from three individuals, which, however, on trial proved to be quite inert. It is right that we should state we had great doubt as to whether any of this was true cowpox lymph, arising from the circumstance that there is a greater difficulty in obtaining genuine lymph from the cow than is generally supposed, and chiefly from the very rare occurrence of late years of the disease among these animals, as also from their being subject to other eruptive diseases which are liable to be mistaken for the true cowpox.

For the purpose also of endeavouring to obtain primary lymph, recourse was had to the inoculation of cows with the virus of human smallpox; a proceeding that has been occasionally resorted to with success. Seventy-two animals were inoculated between the beginning of November and the end of August of the following year, fifty of which were tried two or three times in succession. We were enabled, however, to charge only a few points from the whole of these inoculations, and the material thus obtained, when used on sheep, was found to have no greater effect than that produced by current vaccine lymph.

We next resorted to the vaccination of some calves, with the view of obtaining, if possible, a supply of lymph on the so-called principle of retro-vaccination, namely, the passing of current vaccine lymph through a bovine animal. A scanty

supply was thus procured, which, however, on trial was likewise found to be not more active than ordinary vaccine lymph. This point we shall have occasion hereafter to refer to again.

Finding such unsatisfactory results from these experiments, we determined to *ovinate* the cow, with a view of procuring, if possible, a lymph which would produce more decided action on the sheep on being returned to this animal, in a similar manner that the virus of human smallpox, after being passed through the cow, has been returned to man. For this purpose six cows were ovinated with lymph taken from a natural case of sheep-pox, eight punctures being made in the *perineum* or on the *labia pudendi* of each cow. No special results followed, but some of the same lymph, used at the same time on sheep, took readily. The experiments were repeated on these cows shortly afterwards with a like result. Within a few weeks of this time five other cows, a heifer, and a steer, were ovinated after the same manner from a natural case of sheep-pox, sets of scratches being used as well as punctures on the teats and other parts; but still no sufficient effect was produced to enable us to obtain lymph. These experiments, so far as they go, show the correctness of that which has been stated by several of the continental writers respecting the insusceptibility of the cow to take the sheep-pox, and they also confirm the experiments which were instituted by ourselves in 1848 to determine this same question.

Although scarcely anticipating any greater success, we nevertheless resolved to give trial to the vaccination of pigs, and also to the inoculation of them with the virus of human smallpox; these animals being omnivorous, and therefore, like man, living on a mixed animal and vegetable diet. Pigs varying in age from a few weeks to a year old were chosen for the purpose. The vaccinations, although several times repeated, produced no effect; and the inoculations but very slight; no vesication following from either.

We were thus thrown back upon current vaccine lymph for the completion of the experiments, and after a short interval the sheep not affected by any of the previous vaccinations were vaccinated again, but without any material alteration in the results being obtained. Fifty-six sheep were next selected for a repetition of the experiments, care being taken that some of them should be animals on which a former vaccination had had effect. Only 12 of the 56 sheep showed any result from the operation; and it is worthy of note that no less than 8 of these, or two-thirds, had been affected before. Another 50 were selected and vaccinated, and 29 of them took the disease; 17 of which, or nearly

two thirds again, had been influenced by a previous vaccination. The second action of the vaccine virus was found to be fully equal to the first, by which it appeared to be in no way influenced.

The fact of sheep being susceptible to the action of the vaccine virus a second and even a third time, as we proved by oft repeated experiments, is of itself sufficient to show the inutility of the vaccination of sheep. For if the first vaccination affected the system so as to be protective, the animal would not be susceptible to a second action of the same virus, until after a lapse of probably some years, instead of being acted upon by it a second time, almost immediately.

A slight difference only was observed in the action of the Jennerian, and Smallpox and Vaccination Hospital lymph, the two which were principally employed; 33 per cent. only of the whole of the vaccinations with Jennerian, and 38 per cent. of those done with the Smallpox and Vaccination Hospital lymph showing results.

(*To be continued.*)

THE PHOSPHATES USED IN AGRICULTURE.

By Dr. T. L. PHIPSON, F.C.S., London, &c.

It is now some twenty years since the great truth of the gradual exhaustion of soils by continual cultivation began to dawn vividly, and with all its force, upon the agricultural public of Great Britain. Numerous analyses of soils and plants, undertaken, in the first instance, to satisfy an ever-increasing curiosity, soon demonstrated, in a most forcible and practical manner, the nature of the ingredients which our crops take yearly from the soil, and which, in a country so thickly populated as England, it is indispensable to restore in some way or other to the soil, in order to keep up a proper degree of fertility.

The art of *manuring*, practised for centuries before, began to be understood within the last quarter of a century only; and though the labours of Liebig in Germany, and Boussingault in France, preceded by those of Sir Humphry Davy in this country, have contributed not a little to our present knowledge of the subject, yet in no country have the influences of science been so considerable, so gigantic, as in our own. The reason of this doubtless lies in the actual population of Great Britain, of which the average to the square mile is greater.

than that of any other country; consequently, the soil here is caused to do its utmost, and the effects of exhaustion have been sooner and more keenly felt. Although scientific agriculture, as regards its diffusion among the people, is still in a deplorable state on the continent of Europe, as may be seen by glancing from time to time at the periodical literature of Belgium, France, Germany, and Italy, the time will certainly come when the art of manufacturing and applying manures of all descriptions will be as actively pursued in these countries as in England at the present day.

Three of the more important ingredients which soils lose by cultivation, and which it is necessary to restore to them in greater or smaller quantities, are potash, nitrogen, and phosphate of lime. Nature herself supplies these substances to the soil in various ways, and in quantity sufficient for the growth of wild plants. Thus, potash is washed into the soil by the rain-waters which flow over granitic and felspar rocks, so that every little stream contains some of it; nitrogen, in the form of ammonia, is constantly present in the atmosphere, and phosphate of lime is very widely distributed over the globe. Moreover, the excrements of animals contain all three. Another ingredient very essential to vegetable life is carbonic acid, of which there is so large a supply in the atmosphere, in the streams, and rocks of the globe, that it is rarely necessary to supply it artificially to our cultivated crops.

I have said that nature supplies a sufficiency of these more important constituents of the fertile soil, to ensure the growth and luxuriance of wild plants. But in agriculture we are dealing with an artificial state of things, and the natural supply no longer suffices to maintain fertility in our cultivated soils. In our present system of manuring, potash is supplied by farm-yard manure, sometimes by wood-ashes, and by manures made by drying the excrements of animals (sewage, &c.). The first and last of these supply also ammonia and phosphates. Our chief sources of nitrogen are Peruvian guano, nitrate of soda, and sulphate of ammonia (from the gas-works). The first of these supplies, at the same time, phosphate of lime, and the last is sometimes introduced into artificial manures, such as the ammoniacal superphosphates.

Our sources of phosphate of lime are most numerous, and it is to these alone that I shall devote the present paper. A few years ago, all the phosphorus used for the manufacture of lucifer matches was extracted from bones, the phosphate of lime used in the various manufactories was likewise obtained from bones. These were principally collected in the streets

and waste places, at butchers' establishments, &c. Since the manufacture of *superphosphate of lime* began for the use of the farmer, not only immense quantities of ox bones have been imported yearly into England from South America and other countries, but a large number of natural deposits of phosphate of lime have been discovered and utilized without delay in the interests of agriculture and manufactures. It was shown by Liebig that it was of little use to supply ground bones to the soil in order to obtain a rapid result, for the bone earth takes a long time to become soluble by the action of the carbonic acid, and other vegetable acids of the soil, and cannot penetrate into the tissues of plants until it is so dissolved. In order, therefore, to furnish plants with phosphate of lime in a soluble state, Liebig proposed that bones or other phosphates should be treated with sulphuric acid. Hence arose the manufacture of superphosphate or soluble phosphate of lime, which has, of late years, taken such extension in England. It is to this manufacture principally that is owing the enormous importations of phosphate of lime in various forms which arrive in Great Britain from all parts of the globe.

It was probably the introduction of guano from South America that brought certain practical minds to consider more attentively the best means of restoring the fertility of exhausted soils, and of keeping up the fertility of those not yet exhausted. This extraordinary and powerful manure, the enormous supplies of which appear to have been stored up by Providence for the actual wants of agriculture, as the endless supplies of coal have accumulated in bygone ages to supply the wants of our manufactories, was brought to Europe in 1804, by Alexander von Humboldt, as a *scientific curiosity*. Its valuable nature was not entirely appreciated by the public at large until about 1838, when large quantities of it began to be imported into England as a manure. Two years later (1840), Liebig brought out his well-known work on agricultural chemistry, making known the principle of the manufacture of superphosphate of lime, and in 1842 Mr. Lawes began to manufacture this superphosphate manure.

Guano being, as is well known, the accumulated excrement of sea-fowl (and, consequently, having the same composition as the excrements of pigeons and other domestic birds), is abundant in many parts of the globe. In certain tropical regions (Peru, Chinca Isles, &c.), where it never rains, this guano is very rich in urate, oxalate, and phosphate of *ammonia*, besides containing about 22 or 23 per cent. of phosphate of lime. But in localities which are frequently visited by hurricanes and much rain, the *organic* constituents and

salts of ammonia are washed out, and the *mineral* constituents increase in proportion; the guano becomes less valuable as a manure, by loss of its ammoniacal compounds, but constitutes a plentiful source of phosphate of lime. Such are the phosphates known as "West India phosphate," "Bolivian guano," &c. These contain from 40 to 60 per cent. (and sometimes more) of ordinary phosphate of lime, whilst their per-centage of nitrogen (ammonia) dwindles down to 2, 1, or even 0.5 per cent., as the phosphate increases. Here, then, is an abundant source of phosphate of lime.

But several West India islands furnish a species of hard rock, of very peculiar aspect, consisting chiefly of phosphate of lime. Many persons consider that this rock has been derived from guano, supposing it to be the result of exposure to the atmosphere for thousands of years; others imagine it to be guano modified by volcanic action. I have examined this mineral phosphate,* and find that it contains not only phosphate of lime, but also a considerable proportion of phosphate of alumina—a substance not met with in guano; it is, in fact, a compound of phosphate of lime and phosphate of alumina, containing about 17 per cent. of the latter, and 65 per cent. of the former. As this rock is principally derived from the little island of Sombrero, I called it *Sombrierite*. This is another tolerably abundant source of phosphate of lime, much used in the manufacture of superphosphate manure.

Another hard phosphatic rock, of a similar description, is found upon Monk Island, in the Gulf of Venezuela. Although I have received for analysis in my laboratory many hundred specimens of the different phosphates mentioned in this paper, I have never yet met with this one from Monk Island; but I have reason to believe it is a substance similar in all respects to *Sombrierite*. Whether it be so or not cannot be determined by the few incomplete analyses that appear to have been made of it hitherto. However, it constitutes a cheap source of phosphate to manufacturers of superphosphate manure; and it appears to contain 78 to 80 per cent. of phosphate of lime.

Another, and most abundant source of phosphate of lime is, I am happy to say, an indigenous one, and one which is very extensively utilized in the manufacture of superphosphate. I allude to the Cambridge and Suffolk *coprolites*. These are hard nodules, somewhat cylindrical, and having rounded edges. The Cambridge coprolites are found in the Upper Green Sand, where they form extensive deposits, and are so intimately mixed, on their surface, with the green sand

* · Journal of the Chemical Society, 1862.

itself, that their true colour is only seen when they are broken. They contain 60 to 65 per cent. of phosphate of lime, sometimes rather more, and, when ground, form a yellowish-white powder. They are supposed to be the fossil excrement of extinct animals, hence their curious name, derived from the Greek; but we have not sufficient proof of this extraordinary supposition. However, the revelations of geology during the past twenty years have been so exceedingly wonderful, that one is readily tempted to admit that some of these coprolites are the fossil excrement of certain extinct animals, probably reptiles, and therefore correspond somewhat in their chemical composition to guano which has been deprived of its organic matter by atmospheric influences. Specimens of such guano have given me, upon analysis, from 15 to 30 per cent. of *carbonate* of lime, which resembles the proportion of carbonate of lime invariably present in every description of coprolites.

The main thing that regards the agriculturist or manure manufacturer, however, is their chemical composition, by which these Cambridge coprolites appear to be the cheapest source of phosphate of lime at present known. The Suffolk coprolites are dark-brown nodules, some of which have very much the appearance of fossil bones rounded by the action of the sea. They always contain a certain amount of red oxide of iron, and about 56 per cent. of phosphate of lime; they are consequently rather less valuable than the pure Cambridge coprolites; moreover, they appear to belong to the tertiary formations.

All these coprolites, and, indeed, all natural phosphates used in agriculture, except apatite (see further) contain a certain amount of carbonate of lime and insoluble silicious matter, and it is important to manufacturers and agriculturists to have the proportions of these determined accurately, otherwise they have no control over adulteration, and no basis to work upon in the manufacture of artificial manures.

Along with Cambridge coprolites I have found fragments of fossil bone—bones of reptiles, probably—showing the same chemical composition as the rounded nodules or coprolites themselves. The Suffolk coprolites appear to be chiefly fossil bone, more or less impregnated with phosphate of iron, &c.

But the whole of the Upper Green Sand formation of England is characterised by a wide diffusion of phosphoric acid in the shape of phosphate of lime. My attention was called to this some years ago, by a relation, who forwarded to me a very large specimen of fossil wood from the Green Sand of the Isle of Wight, which, upon being submitted to

analysis, gave me an enormous proportion of phosphate of lime—in fact, it was chiefly formed of this substance and fluorspar—though it was not apatite;* and I learned afterwards that Mr. Thomas Way had formerly examined several fossil polyyps, sponges, &c., from the Green Sand, which gave a very large per-centage of phosphate of lime.

This proves to us that a great amount of phosphates has been diffused through the Upper Green Sand formations, may-be by the accumulated excrement of myriads of fish and large reptiles which inhabited this country at the remote geological periods to which these formations belong.

I have since analysed many other sedimentary rocks and fossils, in order to discover whether they contained any notable quantity of phosphate of lime, but rarely found more than one or two per cent., frequently a mere trace only. However, there exist, doubtless, other sources of phosphate yet to be discovered.

If we admit that the mineral phosphate Sombrerite and that of Monk Island be similar minerals, and have been derived, by some unknown geological process, from guano; if we admit, moreover, that the coprolites found in Cambridge and Suffolk are, like those of the Coal and Lias formations, true fossil excrements, mixed here and there with bone; and, thirdly, if we admit that the other numerous and above-named fossils (wood, sponges, polyyps, &c.) fossilized by phosphate of lime, be the result of an impregnation of organic substances by the excrementitious matter of animals now extinct, what a splendid example we have here of *applied palæontology*. For since agricultural chemistry began its rapid development, all these “fossil excrements” have become valuable as a means of aiding us to keep up the fertility of our soils, to increase our wheat crops, and to have an abundant and cheap supply of bread. We are thus tempted to class all phosphates used in agriculture, including bones, bone-ash, &c., as derived from organized beings that have once flourished upon our globe.

But we have another source of phosphate of lime in the coarse variety of apatite of Estremadura, which appears to have had no connection with organized beings of any description, and cannot be considered as a fossil. The Estremadura phosphate met with in commerce is the mineral apatite in the massive form; it is abundant in Spain, and may be in other countries also, but up to the present time it does not appear to be so plentiful as the other phosphates mentioned

* See ‘Report of British Association,’ 1861, and ‘Chemical News,’ 1861.

in this paper. However, it is of all known substances found in nature that which contains the most phosphate of lime, the per-centage of which in the commercial specimens averages from 85 to 87 per cent., and in absolutely pure specimens as much as 92.

The remaining phosphates used in agriculture are bones, bone-ash, and animal charcoal; the two latter are merely burnt bone. Bones contain the peculiar phosphate known as "bone-earth," equivalent to about 56 per cent. of ordinary tribasic phosphate of lime. When ground, they often become mixed with silica and other impurities. Enormous cargoes of ox-bone, either sun-dried or in the shape of bone-ash, are imported from South America into England.

Bone-ash is bone burnt *in contact with the air* until its organic matter is destroyed; it yields a quantity of bone phosphate equivalent to 70 or 90 per cent. of ordinary phosphate of lime, according to its degree of purity. When burnt *without contact of air*, animal charcoal is obtained; this is used to clarify sugar, juice, &c., and when spent is burnt over again. After being thus burnt twice or thrice, it becomes comparatively useless to the sugar-refiners, and is sold to manufacturers of superphosphate. According to a number of analyses made of this substance in my laboratory, it may be said to average from 70 to 80 per cent. of phosphate of lime.

Such, then, are the substances which furnish our agriculturists, our lucifer-match manufacturers, our colour-makers, &c., with their supplies of phosphate of lime. It is needless, perhaps, to add that agriculture absorbs by far the greatest portion of this phosphate, and we may be thankful that there exists so plentiful a supply of it. In a future paper I will consider our present sources of ammonia.

ON THE IDENTITY OF PLEURO-PNEUMONIA AND RUBEOLA.

By W. THOMSON, M.R.C.S., &c.

(*Read before the Medical Society of Victoria.*)

(*Continued from p. 547.*)

BUT we never speak of the group by the terms applicable to or descriptive of anything connected with their secondary, yet not less exact, states, not of any of them individually in this way, unless it be of typhoid fever, although even in that case we never say enteritic ulceration to signify typhoid or pythogenic fever. It belongs also to these fevers, as a character-

istic, that they never occur in isolated cases, nor ever fall upon a whole community suddenly and simultaneously. They are always epidemic. But epidemics are of two kinds—the non-infecting and the infecting. The former happens when, as is supposed from some unknown change in the air, or in the magnetism of the earth, a morbid influence suddenly seizes a large proportion of the inhabitants, laying them for a time prostrate in sickness, and then with the cessation of general exciting cause as suddenly and simultaneously disappearing. A good example of this form of epidemic is seen in any ordinary invasion of influenza. It is not infectious, and one attack gives no security against any number of subsequent attacks, when exposed to the same causes. The second form of epidemic is that in which an equally unknown morbid element is brought amongst a people by some person under its influence, from whom it is transferred to others, and from them propagated over all who are susceptible, until the whole are infected. This form of epidemic rages irrespective of season or of atmospheric or telluric conditions, until all suffer who come within its influence, when it dies out, for want of *pabulum*, as it were. Examples are too well-known in the histories of epidemics of measles, scarlatina, smallpox, &c. Cases do sometimes appear apparently sporadic, just as the epidemics themselves are often apparently capricious; but these instances are so exceptional as to leave doubt of authenticity, and, under any circumstances, do not invalidate the rule. It is unnecessary to add that affections of this form of epidemic rarely occur more than once in the same individual; or that one, if not two, of them may be induced artificially in a modified form, giving equal security against the spontaneous occurrence of the severe form or type of the natural disease. If the experience and knowledge, now ample, acquired relative to these facts by long study of them, as they occur in the human body, be transferred to observation of and for comparison with the various forms of disease occurring among the lower animals, they will be found equally applicable in many cases, and inferentially in all. As animals have a physiology in common with the human race, so have they a pathology. The unity of design in structure and function is equally manifested in health and in disease. What is true of epidemics is, *mutatis mutandis*, equally true of epizootics; what of endemics, of enzootics. The diseases are not only closely allied, they are identical—“*Mutato nomine de te fabula narratur.*” All the fevers incidental to humanity are reproduced, not only in the equine and bovine, but in all other species brought under the same physical conditions. The dis-

covery which perhaps most redounds to the credit of medicine as a science, or as the healing art, was in the linking together of separate orders of creation through the bond of disease. The same bovine herd which changes grass into flesh and milk for man's sustenance, also prepares an antidote to the direst ill that befalls his humanity. It will equally redound to its honour if our profession can find out a prophylactic, and pay back the boon, if not in kind, at least by intelligence, and rescue a race from a pest as dire to it as smallpox once was to us. Whether from motives of ideal gratitude to these bovine benefactors, or from veriest self-interest, an active spirit of inquiry is prompted which cannot let the secret which has so long baffled and eluded us lie much longer hidden. The similarity or identity of the diseases of man and of animals is now so fully recognised that to trace a new affinity is nothing very wonderful. If, however, it be useful in removing a source of error in diagnosis or practice, it will be none the less important. To trace the identity of pleuro-pneumonia and rubeola may be nothing remarkable, but exceedingly desirable to do in consequence of its probable practical utility. Both diseases are so prevalent, and so fully comprehended in many respects, that it may seem strange why the analogy should not have before been detected. Two circumstances seem to explain this oversight—1st. The obscurity of the first stage of pleuro-pneumonia as contrasted with the well marked conditions of the second stage. 2nd. The well-marked characters of the first stage of rubeola, and the comparative infrequency of the second stage. Remembering that it is by tracing the analogies of these stages respectively, and that the most prominent features are reversed in the two species of patients, it is easily understood how observation missed tracing the affinity. The symptoms of the first stage of rubeola in the human subject are familiar to all; but close watching is required to note the corresponding symptoms in the brute. The description given by systematic writers, and the observations which any one may make for himself, prove that these symptoms correspond in every particular. There is a period of incubation of variable length; the onset in both is by the shiver characteristic of approaching febrile disorder, which soon follows. In both, the symptoms are at first those common to other affections, and which at any other time than that of an epidemic or epizootic would hardly attract attention. In both it is, after some days of indefinite illness, that cough begins, as of a common cold; with coryza, puffy features, watering of the eyes, which are blood-shot; the mouth is clammy, and the secretions, as of

milk, are diminished as the fever increases. The skin of the lower animal about this period becomes dry, and tightly bound down to the subcutaneous textures. It is not merely the staring coat usual in cattle in most illnesses; but it is a peculiar dry, hard, wiry state, and has been noticed by some to be so in blotches. This condition or symptom is noticed at the same period as would correspond to the appearance of the eruption in man. At this time red spots or patches may be often perceived on the mucous surfaces of the mouth and nostrils, as is not uncommonly witnessed in rubeola; and an offensive odour comes from the mouth, precisely alike in both cases. The cutaneous rash has often been noticed, and it was at one time supposed to be a form of eczema, of which the pleuro-pneumonia was a sequela. At this early period of the fever, neither auscultation nor percussion is of much avail. By the former the dry sonorous râle of ordinary bronchitis may be detected along the windpipe and in the bronchial tubes. Every medical man knows how closely these agree as among the general symptoms of rubeola. I am aware that the distinctness of the eruption is not mentioned by several systematic writers, who seem to include it under the ordinary account of the coat; and if we bear in mind the thickness of this hairy covering, we readily understand how a mere efflorescence of the cutis passed unnoticed, for it is not like varicella, or variola, while in scarlatina the intense redness of the mouth and fauces could not fail to be seen, and to lead to the detection of the rash in that fever. But the strongest proof of the presence of an eruption is the copious furfuraceous, or bran-like, dust in the coat, owing to the desquamation of cuticle. In this the diseases strongly correspond. The state is not seen in every case, certainly, neither of rubeola nor of pleuro-pneumonia, because the rash must be very freely out in the first instance, or the noticeable desquamation does not take place. Again, the disease in animals is often very mild; just as in cases of rubeola the symptoms may be so moderate, as not to attract much notice. Some animals suffer very slightly, and it is only when the disease runs on to the formidable second stage with severity that it arrests attention. Thus it was ascertained, by one inquiry in France that eighty-three per cent. recovered, and seventeen per cent. died, of all taken ill, and that of the former proportion some were very little affected. I cannot tell whether this bears any proportion to the mortality from rubeola, nor whether it corresponds to the fatality of pleuro-pneumonia in this colony; but I may remark that it proves that the latter disease is not always so terribly fatal in propor-

tion to the number affected as is very generally believed ; and must also add that neither is rubeola in the human subject the harmless, mild, safe malady it is often supposed, fit only to be treated by mothers and nurses. In England 7000 people die on an average every year from it ; and in Victoria 250 died in 1861, and in 1860 as many as 250 died from it in Melbourne alone. What ratio these numbers bear to the numbers who suffered from the disease it is quite impossible even to guess at ; but it proves a closer resemblance between the severity of rubeola in the human subject and the severity of the so-called pleuro-pneumonia in cattle than many might at first suspect. Thus far then for a hasty comparison of the two affections in the earlier stages, and the next thing to note is whether the parallel holds equally in the later. Whatever may be thought as to the asserted correspondence of symptoms of the earlier period, those of the second are even more definite. The catarrhal affection is the most important, and always determines the prognosis. The most common cause of death in both is inflammation of some one or more of the pulmonary textures ; and when not fatal, both diseases leave chronic pulmonary mischief behind. In both, treatment is determined almost solely by the condition of the lungs, which, it is needless to repeat, is in both at first bronchitis, merging into vesicular and lobular pneumonia, and eventually pleuritis, with hydrothorax, and the usual exudations and results. The inflammation is apt to spread insidiously from the mucous surfaces of the air passages to subjacent tissues, and after death from rubeola, as from pleuro-pneumonia, portions of the lungs are hepatized in larger or smaller pieces. Although the pulmonary affection is that proper to both, yet the mucous surface of the bowels is apt to be also affected, and there is then a peculiarly fetid diarrhoea in either case in the later stages. The expectoration in both passes through similar changes during the progress of the disease, from thin whitish fluid to tenacious, viscid, muco-purulent matter. In comparing the *post-mortem* appearances there is one remarkable point of resemblance, the more so as it differs from any appearance of the lungs in ordinary hepatization. In rubeola this hepatization is usually in distinctly separate portions, sometimes even in small patches, as if the inflammatory or congestive action had been limited to isolated lobules or to clusters of lobules. At other times these small pieces may co-exist with the condensation of a large portion of one lung, or of a whole lobe. The condensed piece may even lie like a ball the size of the fist in the centre of an otherwise sound lung. In ordinary hepatization from

active congestion, or sthenic inflammation, or even from the hypostatic inflammation in adynamic fever, the hepatization is more uniform, being deep-coloured and dense at the lower portions, lessening as it ascends to the upper. In rubeola and in pleuro-pneumonia, it is quite different. The congestion, or condensation, whether it be from inflammatory action proper; or merely congestion *per se*, is patchy. A section of a lung, or lobe, shows this singularity, and partly gives rise to that marbled or mottled appearance so well known to those who have inspected them. It was not inaptly likened to a piece of brawn by one observer. To this aspect the interlobular areolar tissues, loaded with fibrin, and so rendered thicker, and in colour more yellowish and distinct from the red, or brown, or pink vesicular portions; contribute. As there may be co-existing all degrees of congestion, of inflammation, and of hepatization, so are there all shades of resulting colour, from reddish yellow to deep brown. But these colours never merge into one another; they are all bounded by the bands or septa alluded to. The grand thing to note in this parallel is the isolated portions of the lungs thus separately congested in both diseases, evidently from the same form of morbid action going on during the progress of the disease. The exudation exudes in the same manner as in ordinary cases of inflammation. There are the processes of resorption of serum, and organization of fibrin into false membranes, causing adhesions between the naturally free surfaces of the pleura. It is often correctly stated that adhesions rarely form in the exudation upon the pleura in pleuro-pneumonia, and in this character also the complaint agrees with rubeola. For this reason loose flocculi of lymph float in the fluid of the exudation. As other terminations or results of inflammation there are gangrene and abscesses, according to the degree of intensity, of which pathologists do not require particular description. When an affected lung recovers tone, and is restored to healthy function, it is accomplished by the same reparative actions as are known to take place in the human body. In cattle, as in man, it often happens that there is neither death nor absolute recovery. The lungs remain permanently impaired; hectic supervenes, and long after the first attack may have been forgotten, the animal sinks under the inroads of consumption. In such cases it is occasionally spoken of by those who are observant and skilful, yet not pathologists, as a recurrence of the original disease lasting through many months—as a re-wakening up of the symptoms after they had been lying for a time dormant. But it would be just as correct to speak of a man's dying of rubeola, who sinks from phthisis, induced in a lung weakened by the sequelæ of a

long-previous attack. In both the disease attacks the foetus *in utero*, and in both causes a tendency to abort. The excitement of an animal at the onset of pleuro-pneumonia, as shown by the proneness to rush, and other signs, is but a manifestation of delirium, such as always attends, more or less, the beginning of measles; while the arched back, tender spine, and heaving flanks of the later periods would not be so observable in measles, owing to the different posture of the patient. Thus we find that in every essential particular the signs are alike. To no other disease incident to man will this one correspond, while rubeola alone answers to the descriptions of pleuro-pneumonia among cattle. The two dovetail and fill a gap in the respective nosologies. There is another circumstance which seems something more than a coincidence, and contributes no small amount of corroborative evidence. It is this. The last epidemic of rubeola which visited this colony came simultaneously with the epizootic pleuro-pneumonia. In 1859-60 this happened, and rubeola, scarlatina, and diphtheria raged concurrently with the rapid spread of the formerly unheard of disease among cattle. If those affections of the human family have subsided—died out, as it were—it is because there are no more materials, no more subjects, no more pure blood left liable to their infection; and so will they slumber, apparently extinguished, until a fresh generation grow up in pristine susceptibility. In the same way will it be with pleuro-pneumonia, unless, which is at least as yet unproven, inoculation prove a perfect prophylactic. In this also is there, by the way, another point of affinity, for inoculation was long ago proposed and practised as a preventive of rubeola. Succeed or not, there is, however, no analogy between it and vaccination, for there are not, as in that case, two distinct species of animals to modify the virus, it being thus more like smallpox inoculation, known to be so hurtful. Possibly, if the latter virus were diluted, as the lymph is in the other process, it might be less virulent locally, yet equally efficacious. The pathological principle, although not precisely Jennerian, may nevertheless be fundamentally the same, the virus repeating itself by catalysis; but upon such points much is as yet conjecture, as is the question of the suitability for human food of animals thus naturally or artificially infected. Those beasts would at least be most agreeable to think of for this purpose which suffered neither; and the hope of helping to get them yet all into this normal condition has prompted this analogy, which, although it asserts no panacea, may, if confirmed, perhaps suggest what is far better—the means of absolute prevention, both of the typical disease and of its bovine analogue.

THE CROONIAN LECTURE ON THE COAGULATION OF THE
BLOOD, DELIVERED BEFORE THE ROYAL SOCIETY
JUNE 11, 1863.

By JOSEPH LISTER, Esq., F.R.S., F.R.C.S.

(Continued from p. 550.)

VARIOUS dropsical effusions have been lately investigated with reference to their coagulability on the addition of blood-corpuscles by Dr. Schmidt, of Dorpat, who finds that while they differ from one another in the amount of water they contain (just as is the case with serum filtered artificially through animal membranes under different degrees of pressure), yet they are all but universally coagulable. Schmidt has also carried the investigation further. He has found that by chemical means he can extract from the red corpuscles a soluble material which, when added to these exudations, leads to coagulation. In other words, he shows that the corpuscles do not act as living cells, but by virtue of a chemical material which they contain, which can be used in the state of solution, free from any solid particles whatever. He found, also, that the aqueous humour made a dropsical effusion coagulate, and that the same effect was produced by a material extracted from the non-vascular part of the cornea. Hence he regards the blood-corpuscles as only resembling other forms of tissue in possessing this property. These observations are extremely interesting, if trustworthy; and that they are so, I do not at all doubt; but having only read Schmidt's papers within the last day or two, I have not yet had opportunity of verifying his statements.*

It remains to be ascertained what share the material derived from the corpuscles has in the composition of the fibrin. Schmidt inclines to the opinion that the fibrin is probably composed, in about equal proportions, of a substance furnished by them and one present in the liquor sanguinis. If this be true, the action of an ordinary solid in determining the union of the components of the fibrin may be compared

* Since this lecture was delivered I have verified an important observation made by Schmidt—viz., that a given amount of corpuscles causes complete coagulation of only a limited quantity of hydrocele fluid. From this he draws the inference that the action of the corpuscles cannot be of the nature of fermentation, the coagulative efficacy of the corpuscles being not continued indefinitely, but becoming exhausted in the process of coagulation. For Schmidt's papers, see 'Arch. für Anat. Phys.,' &c., 1861 and 1862.

to the operation of spongy platinum in promoting the combination of oxygen and hydrogen.

It may be asked, how comes it that when the blood of a horse is shed into a cup, the buffy layer coagulates as rapidly, or nearly so, as the lower parts rich in corpuscles?

This is indeed a question well worthy of careful study. We know that the liquor sanguinis left by the subsidence of the red corpuscles within a healthy vein is incapable of coagulating when shed, except in a slow manner, which is accounted for by the corpuscles that remain behind in it. Hence it appears that when the blood as a whole is shed into a glass, the agency of the ordinary solid leads the corpuscles to communicate to the liquor sanguinis, before they subside, a material, or at least an influence, which confers upon it a disposition to coagulate, though it still remains fluid for some time after they have left it. Just as we have seen that a very short time of action of the ordinary solid upon the blood, as a whole, is sufficient to give rise to coagulation, so we now see that, provided an ordinary solid be in operation, the presence of the corpuscles for but a little while is enough to make the liquor sanguinis spontaneously coagulable, though not immediately solidified. We shall see before concluding an illustration of the importance of this fact to pathology.

It remains to be added, that serous membranes resemble the lining membrane of the blood-vessels in their relations to the blood, as is implied by John Hunter's observation that blood, which had lain for several days in a hydrocele, coagulated when let out. The same thing is well illustrated in a frog prepared like this I now exhibit. About four hours ago, a knife having been passed between the brain and cord to deprive the creature of voluntary motion in the limbs and trunk, the peritoneal cavity was laid open in the middle line, and its edges being kept raised and drawn aside by pins, I seized the apex of the ventricle of the heart with forceps, and removed it with scissors. In a short time the whole of the animal's blood was in the peritoneum, and it may be seen that it is still fluid, in spite of this long-continued exposure. When I first performed the experiment, three years and a half ago, the weather being cool (about 45° Fahr.), and a piece of damp lint being kept suspended above the frog to prevent evaporation and access of dust, I found that the blood remained fluid in the peritoneal cavity for four days, except a thin film on the surface, and a crust of clot on the wounded part of the heart; but a piece of clean glass placed in the blood in the peritoneum became speedily coated with coagulum. Here it will be observed, not merely the liquor

sanguinis, but the corpuscles also were present in the serous cavity, yet no coagulation took place in contact with its walls.

I think it probable, though not yet proved, that all living tissues have these properties with reference to the blood. We know that the interstices of the cellular tissue contain coagulable fluid, and I have seen anasarcaous liquid coagulate after emission; but this, indeed, may possibly have been merely liquor sanguinis, coagulating in consequence of slight admixture of blood-corpuscles from the wounds made in obtaining it.

Looking now at the principal results which we have arrived at, it must, in the first place, be admitted that the ammonia theory is to be discarded as entirely fallacious. The fact that this theory is exceedingly plausible, and has been supported by many ingenious arguments and experiments, is of course no reason why we should retain it if unsound. On the contrary, the more specious it is, the more necessary is it that it should be effectually cleared away; for it mystifies the subject of coagulation most seriously; and I may say, for my own part, that it has cost me an amount of experimental labour of which the illustrations brought forward this evening convey but little idea. Still these have been, I trust, sufficient to show that the coagulation of the blood is in no degree connected with the evolution of ammonia, any more than with the influence of oxygen or of rest. The real cause of the coagulation of the blood, when shed from the body, is the influence exerted upon it by ordinary matter, the contact of which for a very brief period effects a change in the blood, inducing a mutual reaction between its solid and fluid constituents, in which the corpuscles impart to the liquor sanguinis a disposition to coagulate. This reaction is probably simply chemical in its nature; yet its product, the fibrin, when mixed with blood-corpuscles in the form of an undisturbed coagulum, resembles healthy living tissues in being incapable of that catalytic action upon the blood which is effected by all ordinary solids, and also by the tissues themselves when deprived of their vital properties.

These principles have, of course, very extensive applications to the study of disease; but I must content myself with alluding very briefly to inflammation, the most important of all pathological conditions.

If we inquire what is the great peculiarity of inflamed parts in relation to the blood as examined by the naked eye, we see that it consists in a tendency to induce coagulation in their vicinity; implying, according to the conclusions just stated, that the affected tissues have lost, for the time being, their

vital properties, and comport themselves like ordinary solids. Thus, when an artery or vein is inflamed, coagulation occurs upon its interior, in spite of the current of blood, precisely as would take place if it had been artificially deprived of its vital properties. On one occasion I simulated the characteristic adherent clot of phlebitis by treating the jugular vein of a living sheep with caustic ammonia, and then allowing the circulation to go on through the vessel for a while, when, on slitting it up, I found its lining membrane studded with grains of pink fibrin, which could be detached only by scraping firmly with the edge of a knife. Again, comparing an inflammatory exudation into the pericardium or into the interstices of the cellular tissue with dropsical effusions into the same situations, we are struck with the fact that, while the liquor sanguinis effused in dropsy remains fluid, the inflammatory product coagulates. Now we know that in intense inflammation the capillaries are choked, more or less, with accumulated blood-corpuscles, which must cause great increase in the pressure of the blood upon their walls; and from what we know of the effect of venous obstruction in causing dropsical effusion of liquor sanguinis through increased pressure, we are sure that we have in the inflammatory state the physical conditions for a similar transudation of fluid through the walls of the capillaries. And the natural interpretation of the difference in the two cases as regards coagulation seems to be, that whereas in dropsy the fluid is forced through the pores of healthy vessels, in inflammation the capillary parietes have lost their healthy condition, and act like ordinary matter; so that the liquor sanguinis, having been subjected, immediately before effusion, to the combined influence of the injured tissue and the blood-corpuscles, has acquired a disposition to coagulate, just like the buffy coat of horses' blood shed into a glass, or like the frog's liquor sanguinis filtered by Müller from its corpuscles, the injured vessels acting upon the blood like the filter.

This view of the condition of intensely inflamed parts is exactly that to which I was led some years ago by a microscopic investigation, the results of which were detailed in a paper* that received the honour of a place in the 'Philosophical Transactions.' It was there shown, as I think I may venture to say, that the tissues generally are capable of being reduced, under the action of irritants, to a state quite distinct from death, but in which they are nevertheless temporarily deprived of all vital power; and that inflamma-

* "On the Early Stages of Inflammation," 'Phil. Trans.,' for 1858.

tory congestion is due to the blood-corpuscles acquiring adhesiveness such as they have outside the body, in consequence of the irritated tissues acting towards them like ordinary solids.

I cannot avoid expressing my satisfaction that this inquiry into the coagulation of the blood has furnished independent confirmation of my previous conclusions regarding the nature of inflammation.

THE PROGRESS OF ZOOLOGY.

By SHIRLEY HIBBERD.

(Continued from p. 348.)

IN the Biblical narrative there are numerous evidences of the abundance of beasts of prey in Palestine and Phœnicia, where there is now scarce anything more rapacious than a fox to be found. David's adventure with the lion and bear could not now be repeated by any brave shepherd within a hundred miles of Jerusalem, and the traveller on the Euphrates and Tigris need entertain but little fear of those hungry lions which figure so conspicuously on the hunting freizes of Nineveh. Man not only lays the whole animal kingdom under tribute to furnish him with meat and labour, and entertainment and knowledge, but he busies himself to disturb the balances, and the gamekeepers of this country might be collectively described as destroyers of the British fauna. The relations of Sir Emerson Tennent and Dr. Livingstone make it pretty evident that the "half-reasoning elephant" is fast passing from the face of the earth to be numbered among the extinct animals by the naturalists of a century hence. When we read of the wanton slaughter of thousands of elephants, with no object but the gratification of the passion for destruction, we are tempted to lament that man possesses such complete dominion to subjugate, and such unlimited power to destroy. "Had the motive," says Sir Emerson Tennent, "that invites to the destruction of the elephant in Africa and India prevailed in Ceylon,—that is, had the elephants there been provided with tusks,—they would long since have been annihilated for the sake of their ivory. But it is a curious fact that, whilst in Africa and India both sexes have tusks, with some slight disproportion in the size of those of the females, not one elephant in a hundred is found with tusks in Ceylon, and the few that

possess them are exclusively males.”* In Africa the hunger for meat and ivory causes the destruction of the elephant to an extent which threatens soon to extinguish the large-eared species altogether; but with neither of these incitements, it is perhaps being extinguished with still greater speed in Ceylon and India. There is a saving clause in the fact now established, that elephants will breed in captivity, but against it must be set the fact that in captivity it does not pay for its keep, and is scarcely worth the attention of those who employ it either for burden or draught. The elephant has too much character, too high a reasoning faculty, to be perfect as a servant; it has too many whims, too many eccentricities of temper, and consumes far more food than it earns in harness. Thus, economically regarded, everything is against its preservation, and when the wild herds disappear there will probably remain but few in a domesticated state, for unlike the horse, ox, ass, and sheep, it is both unprofitable and unmanageable.

Zoology has been somewhat restricted in aim, spite of its own breadth as a science and the liberality of its leading cultivators. It owes most of its advance in recent times in the absorption into its circle of the facts of past biological history, to Professor Owen, whose ‘Palæontology’ is a sort of panorama of extinct forms, placed side by side with their existing congeners and representatives. Australia and New Zealand have not only furnished innumerable subjects of anomalous kinds for the consideration of system makers, but they have opened the way for rays of light to fall on the present direct from the past, by their illustrations of geological eras. Nothing more strikingly exemplifies the relationship that subsists between all departments of knowledge than the aid which zoology and geology respectively offer to each other. The existing fauna of Ceylon, as analysed by Sir Emerson Tennent, affords very satisfactory indications that the island is, in no geological or zoological sense, an outlier of the vast Indian continent, but a site, *sui generis*, like Australia, detached not only in its geography from the neighbouring continent, but in its chronology also, and in all its organic productions. On the other hand, geology does more than whisper of the connection that once subsisted between England and the continent of Europe by way of the straits of Dover, for it furnishes all the evidence requisite to establish the conclusion that the separation was

* ‘Sketches of the Natural History of Ceylon, with Narratives and Anecdotes,’ &c. &c. By Sir J. Emerson Tennent, K.C.B., LL.D., &c. Longmans and Co.

effected not very long antecedent to the commencement of the historic era. Zoology does not touch the chronology of the question, but it affixes the general conclusion; and we begin to discover that, however valuable are the floras and faunas of Britain, they tell but half their proper story unless considered in connection with the floras and faunas of the Continent.

Two admirable works have recently been published, with the object of indicating the relations of British and Continental zoology. That by Lord Clermont is a compilation, but it is accomplished with so much skill and good taste, that it acquires a character of originality both by its purpose and its merit.* The British fauna is a part of the fauna of Europe, just as the fauna of a county is a part of the fauna of the country at large; and Lord Clermont's work will tend to widen the range of the British naturalist, by showing that many of his subjects have an extensive area, and must be studied under all their several geographical conditions for a full knowledge of their habits and physiology. Dr. Bree,† though working in another direction, points to the same lesson. By registering the birds of Europe *not* found in Britain, he enables us to estimate the close connection by reason of community of species which exists between the aves of Britain and the Continent, so that we can lay claim to but very few as exclusively British.

The great scientific question of the day is, What is a species? We shall not attempt to offer a reply. Mr. Darwin has made as great an agitation in the world of science as the 'Essays and Reviews' have in theology, but there is no process of excommunication known in the zoological establishment; and those who differ from Mr. Darwin can heartily thank him for having put their accepted formulæ to a severe test, and opened an almost new channel of inquiry. If there is a vagueness about the characters of species, there is still more about the meaning of varieties. Has it never occurred to the reader that every animal is, in a certain sense, a variety; that every individual creature has a distinctive character of its own; so that our so-called varieties are such only by reason of a greater departure from type than usual, the fact of departure being itself so universal that type is almost undiscoverable.

(To be continued.)

* 'A Guide to the Quadrupeds and Reptiles of Europe.' By Lord Clermont. London: John Van Voorst.

† 'Birds of Europe not observed in the British Isle.' By Dr. C. R. Bree. London: Groombridge.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JULY 6, 1864.

PRESENT:—The President, Professor Simonds, and Messrs. Braby, Brown, Dickens, Ellis, Greaves, Harpley, Harrison, Helmore, Lawson, Moon, Wilkinson, Withers, and the Secretary.

The President in the chair.

The minutes of the preceding meeting were read and confirmed.

Communications were read from the several gentlemen who had accepted the office of Vice-Presidents, to which they had been elected at a former meeting of the Council.

The Secretary reported that at the meeting of the Court of Examiners, held on April 21st, a discussion took place relative to the time of holding the Meetings of the Court in London. It was suggested by the Chairman—*Professor Brande*—that in future the examinations should take place after the annual meetings of the profession in May, as the present arrangement had proved extremely inconvenient to some of the Members of the Court.

The Secretary also reported that at the several Meetings of the Court of Examiners, held in London, April 21st, 22nd, and 25th, thirty-seven pupils were admitted Members of the Body Corporate, and two were rejected. He further reported that at the meetings in Scotland, held April 27th, 28th, and 29th, thirty-four pupils were admitted members, and three were rejected. Likewise that three pupils were re-examined before the whole Board, and that Mr. Robert Burnett, who had paid his fees, did not appear before the Examiners. He also reported that, on referring to the certificates it was found that Mr. James Taylor's examination was irregular, his certificate, bearing date April 25th, and his examination taking place on the 29th. Four days' notice having only been given instead of seven, which was an infringement of the "By-laws" of the College.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Lawson*:

“That the Report be entered on the Minutes, and that the Secretary of the Scotch Board be requested to give such explanation as is within his power in reference to the irregularity,

which took place in the examination of Mr. James Taylor.”—Carried.

The Registrar reported the death of Mr. Phillip Hempson, London, who obtained his diploma, May 24, 1855, also of Mr. William Mavor, London, lately a Member of the Council, whose diploma is dated July 28th, 1829, and likewise of Mr. Richard Strickland, Newport, Isle of Wight, diploma dated June 29, 1816. Eighteen copies of the Register had been sold during the past quarter, and ten distributed gratuitously.

The attention of the Council was next called to the increased number of Members admitted to the Body Corporate, viz., one hundred and sixty-one since the last issue of the Register by the Registration Committee.

It was suggested that an *addendum* be made to the present Register.

It was moved by *Professor Simonds*, and seconded by *Mr. Ellis*—

“That an *addendum* be prepared for publication on the same plan as the present Register.”—Carried.

The Report from the Finance Committee, and the Quarterly Balance Sheet of the Treasurer’s account were submitted. The current expenses for the quarter amounted to £76 13s. 11*d.*, which the Committee recommend should be discharged. They also recommend that the sum of £10 be advanced to the Secretary for petty cash to meet incidental expenses.

The report was received and adopted, and cheques were ordered to be drawn for the amount required.

The appointment of Committees for the year was then proceeded with, viz., The Finance Committee to consist of Messrs. Braby, Ellis, Harpley, Moon, Simonds, and Wilkinson.

The House Committee to consist of Messrs. Harrison, Mavor, Spooner, and Withers.

The Parliamentary Committee to consist of Messrs. Ernes, Goodwin, Harpley, Harrison, Mavor, Moon, Secker, and Varnell.

A question having been raised as to what had been done by the Select Committee of the House of Commons in reference to the “Cattle Diseases Prevention Bill.”

Professor Simonds explained that the Committee had amended the Bill in many respects, and that certain contagious diseases were provided against by the infliction of a penalty of not more than £20. As to Veterinary Surgeons being appointed Cattle Inspectors, he had urged the propriety of this

being done, but as the bills stood, any person in authority in local districts could appoint whom they pleased.

The President announced to the Meeting that the profession had sustained a great loss by the death of Professor Miller, who had so ably filled the chair to the Scotch section of the Court of Examiners.

It was resolved that a letter of condolence be forwarded to the widow of the late Professor Miller.

A letter was read from Dr. Struthers, announcing that he had tendered his resignation as Secretary to the Scottish section of the Board of Examiners, and expressing his opinion that the office should be a remunerative one.

After some discussion as to what should be considered a sufficient remuneration for Dr. Struther's services, and also whether he could efficiently perform the duties of the office now that he was resident in Aberdeen, Mr. Lawson, one of the Board of Examiners, undertook to ascertain from Dr. Struthers his views of the question.

The election of a Chairman and Secretary to the Scotch Board of Examiners was deferred for future consideration.

SPECIAL MEETING.

The business of the Quarterly Meeting having terminated, a Special Meeting was convened, the same members being present, to consider the alteration of "Bye-law 21," which was to the following effect, viz. :—

"Each section of the Court of Examiners shall have a Chairman and a Secretary. The Chairman of each division of the Court shall be elected by and from amongst its members. The Secretaries shall be appointed by the Council."

The new law having been proposed by *Mr. Wilkinson*, and seconded by *Mr. Ellis*, was carried.

The original Bye-law was to the following effect :—

"Each Court of Examiners shall select a Chairman and a Secretary from amongst their body."

By order of the Council,

W. H. COATES, *Secretary*.

SPECIAL MEETING OF THE COUNCIL, HELD JULY 13, 1864,

For the purpose of confirming the alteration of Bye-law 21.

PRESENT :—Messrs. Braby, Brown, Harpley, Harrison, Thacker, Wilkinson, and the Secretary.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Braby*—

“That *Mr. Harpley*, Vice-President, take the chair.”

The Minutes of the Quarterly and Special Meeting, at which the said Bye-law was adopted, were read and confirmed.

The new Bye-law having been read and submitted, It was moved by *Mr. Braby*, and seconded by *Mr. Brown*—

“That the alteration of Bye-law No. 21, made at a Special Meeting of the Council, held July 6th, 1864, be now duly confirmed.”—Carried.

It was then moved by *Mr. Harrison*, and seconded by *Mr. Thacker*—

“That the new Bye-law be duly signed and sealed in accordance with the provisions of the Charter.”—Carried.

By order of the Council,

W. H. COATES, *Secretary*.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

QUARTERLY MEETING, AND DINNER TO PROFESSORS SIMONDS AND VARNELL.

THE usual Quarterly Meeting of this Society was held on Thursday, July 21st, at two o'clock, at the Neville Hotel, Newcastle-on-Tyne. There was a good attendance both of members and persons interested in the proceedings. Among those present were—

The President, *Mr. C. HUNTING*, South Hetton; Messrs. *H. E. Wilkinson*, Newcastle, and *Thomas Thompson*, Sunderland, Vice-Presidents; *C. Stephenson* and *H. Hunter*, Newcastle; *W. J. Moore*, Gateshead; *J. Hutchinson*, South Shields; *Thomas Foreman*, Shotley Bridge; *Luke Scott*, Hetton; *D. M'Gregor*, Seaton Delavel; *William Hunting*, South Hetton; *D. Dudgeon*, Sunderland, Treasurer; *G. Armatage*, Pensher, Hon. Sec.; *R. Hall*, Sedgefield; *John Fairburn*, Alnwick; *A. Mann* and *A. Mann, junior*, Lambton; *Professor John Gamgee*, New Veterinary College, Edinburgh; Messrs. *E. C. Dray*, President of Yorkshire Veterinary Medical Association, Leeds; *Thomas Greaves*, President of Lancashire Veterinary Medical Association, Manchester; *W. M'Kenna*, Belfast; *W. E. Naylor*, Wakefield; *W. Edmundson*, Harnby, Bedale,

Yorkshire; J. James Turner, Northumberland; T. A. Clarke, Horncastle; J. Hunting, London; Proud, South Hetton, and W. Cubitt, North Washam, Norfolk, &c., &c.

The President opened the proceedings by stating that Mr. H. E. Wilkinson would introduce a paper on "The Applicability of Legislative Measures for the Prevention of Contagious Diseases," a subject which not only had occupied the attention of Government, as being a most important one to the country at large, but, as it concerned the veterinary surgeon, one which deserves his greatest consideration and attention.

Mr. Wilkinson then read the following paper:

MR. PRESIDENT AND GENTLEMEN,—One pleasant duty at the outset of my observations is, on behalf of our young association, to bid a cordial welcome to those distinguished strangers—members of our profession—whom I see before me. Much as we have to thank the Royal Agricultural Society of England for again honoring our smoky town with the splendid exhibition which they have brought; for the pecuniary assistance and countenance accorded to our profession and its college, still I feel that on the present occasion we have more especially to thank them for the opportunity of meeting with those gentlemen who are in attendance here to-day, and giving us an opportunity of exchanging ideas with them on the progress of our profession.

Not long ago, much the same question of veterinary inspection as that which we are now met to discuss, agitated the legislature of the Royal Agricultural Society,—the only difference being that in one case the diseases were of a hereditary character, whilst now they are of a contagious order.

To the credit of that enlightened body it was decided to retain veterinary inspection; had they not done so I feel assured from an experience gained during the past two months in particular, they would on the present occasion have admitted many horses, the object of whose owners was not the improvement of the breed, but to get rid of their individual specimens.

The applicability of legislative measures for the prevention of contagious diseases in cattle is a subject that cannot be indifferent to the veterinary surgeon, since, whether we consider measures present, past, or to come, it is through his instrumentality the desired object is sought to be gained; and in him, as a rule, rests the success or failure of the scheme.

With the habits and tendencies of professional men, I believe many of my brethren have waited to be consulted rather than take the initiative in the matter; another reason for apparent apathy may be found in the want of conveniences for discussion, such as the meeting-rooms of our local veterinary medical associations will for the future afford us. Suffice to say, I have not heard of any discussion on the subject amongst the veterinarians of the north of England.

The Newcastle Agricultural Club, formed for the purpose of looking after agricultural interests in Parliament, held a lengthened meeting on the subject in this town; the result of their deliberations, so far as I could gather, was that they deprecated any interference with the right of circulating disease amongst themselves; but strongly objected to having any imposed upon them by the foreigner.

An act passed in the 12th year of the present reign, entitled, "An Act to prohibit the importation of sheep, cattle, or other animals, for the purpose of preventing the introduction of contagious or infectious diseases;"

is the first active parliamentary interference with the subject. The same sort of quarantine is ordered as in cases of cholera in the human subject; animals imported from suspected districts are alone inspected; the detection of disease rested with the officer of customs, and if he deemed it necessary, a veterinary surgeon—not necessarily a member of the college—could be employed, and an order in Council obtained for the destruction of the cargo. So imperfect and routine a measure, was only interfered with in 1848, when a special order was obtained referring specially to sheep and lambs, and again in July, 1856, when the detection still rested with the Custom House Officers, the proof with the veterinary surgeon, and the disposal of the suspected stock with the Commissioners of Customs.

About that time, or shortly afterwards, the proximity of a fearful and fatal murrain in Mecklenburgh, called the “steppe-murrain,” created much alarm both there and here, and at once aroused the attention of our Government. An order in Council was issued, bearing date, September 6th, 1856, which is still unrevoked, and is the law upon which the examination of imported cattle is conducted.

I have made certain extracts from it, and I think you will agree with me that its provisions are at once ample and decisive, and so far as our profession is concerned—had the diploma been recognised—complete in the highest degree.

“1st. On the arrival of a vessel with cattle, sheep, lambs, or pigs, the attendance of the veterinary surgeon is to be obtained as soon as possible.

“2nd. After the cattle, sheep, lambs, or pigs have been landed, they are to be kept in charge until each animal has undergone a careful examination, and if found free from disease, the whole are to be passed immediately; but in the event of any disease being found to exist, such of them as may be so diseased are to immediately killed, if the same be considered necessary by the veterinary surgeon; and if upon a post-mortem examination of such cattle, sheep, lambs, or pigs, the same be found fit for human consumption, they, and the rest of the importation are to be delivered to the owner or owners thereof; but should [any of those so examined be unfit for such purpose, and the disease be of an epidemic or contagious character, they are to be buried, or effectually destroyed in the presence of an officer, and the remainder of the importation detained for further examination, so long as the veterinary surgeon may deem necessary, and dealt with as before directed.

“The expenses incurred in detaining the whole or part of any importation, or in killing and destroying those unfit for human food, to be defrayed by the owner or owners.

“3rd. Sheep and lambs are not to be examined after dark, daylight being absolutely necessary for the detection of certain diseases.

“Lastly. The veterinary surgeon is to be required to keep a record of the particulars of each transaction agreeably with the annexed form.”

Here follows a lengthened and very minute list of the various signs by which the diseases “steppe-murrain and “pulmonary murrain” are invariably recognised; and however culpable our Government may be for the apparent apathy which is considered to characterise their movements in any particular, no one can doubt the complete and most elaborate system developed in this one at least. Then follows equally as complete

“precautionary measures” to be adopted for the purpose of stopping the spread of the diseases, such as burning the bodies, hides, &c., or otherwise thrown into deep pits dug for the purpose.

This, gentlemen, is the law as it at present exists for preventing the importation of cattle affected with contagious or infectious diseases.

At the port of London, where the largest importations arrive, a staff of veterinary officers and quarantine sheds and killing shops are provided, the latter at the expense of the Steam Navigation Company owning the cattle boats. At the outports where cattle are imported, veterinary inspectors, *now*, I am informed, necessarily members of one of the recognised Colleges, are appointed by the Board of Trade. All cattle, irrespective of numbers or the port of embarkation, are examined, the fee for such being 10s. 6d. per cargo; in London, however, the inspectors are paid one guinea for every day they are employed.

From my experience of the system during the time I have acted as inspector at this port, I am perfectly satisfied that the system works well. Every advantage is attempted to be taken by the foreign cattle dealers, and by their agents, the English cattle salesmen; but, as on the other hand, every assistance and support is rendered by the Custom House, and by its officers, it is the inspector's fault if his authority is not properly recognised.

When first appointed here I had several importations of foot and mouth diseases, and threats, entreaties, veterinary tribunals, and law suits were alike pointed at my devoted head, and with the like result, viz., increased obstinacy on my part not to allow any addition to the already overstocked market of murrained animals. A more pitiable and loathsome sight than the crippled, slavering wretches presented, it is difficult to imagine, and my qualms of conscience never ceased until I saw the carcasses in the killing shop. Never under any circumstances have I objected to the sale of the meat from these animals, indeed, it is surprising to find what is so foul without so fair within.

This is the law, gentlemen, and its present working, so far as the importation of foreign cattle is concerned; and, as in my opinion, febrile diseases of a contagious and infectious type, affecting our domesticated animals, are on the increase both here and abroad, I, for one, am anxious to see this law, however imperfect it may be, fully carried out until a better is substituted; and if we are to retain the right of freely circulating those infectious ailments we at present possess, do not let us fly to those we know not of, and whilst we open our ports to the free trade of the foreigner—whose presence has become, I regret to say, almost a necessity—let us at least require that he visit us with clean hands.

And now, gentlemen, I turn to the recent attempts at legislation on this subject, the results of which, I fear, like Mahomet's coffin, are in a state of indescribable suspension.

During the past Session a Bill was brought into Parliament, which after being referred to a Select Committee for amendment, presented the following title, viz., “A Bill to make further Provisions for the Prevention of Infectious Diseases amongst Cattle;” and its preamble states that “It is expedient to consolidate and amend the law for the prevention of the spread of contagious or infectious diseases amongst cattle in the United Kingdom of Great Britain and Ireland.”

Most of my hearers, doubtless, are as conversant with the provisions of the Bill as myself, I shall therefore allude only to some of the leading points.

1st. It proposes to take cognizance of horses, mules, asses, neat cattle of every description, sheep, goats, and swine.

2nd. The terms “infectious” and “contagious diseases,” are intended

only to apply to such as are specially named in the schedules, viz., Schedule 1st comprises glanders, sheep-pox, or variola ovina, and steppe-murrain. Schedule 2nd, pleuro-pneumonia and scab.

After dealing with the public exposure of diseased cattle in such places as roads, woods, forests, &c., and the penalties to be enforced, a special provision is made for the exposure for sale of such animals that are diseased, apart from those deemed healthy.

It also prohibits the giving of uncooked flesh to swine, under certain penalties, and provides for the appointment of officers, inspectors, and so forth.

The deficiencies of the Bill, as a legislative enactment, appear to be briefly these. While it makes provisions for the recognition of certain diseases as being contagious or infectious, no notice is made of, or provision for, such diseases that may in future arise of either character, or diseases which may take on a contagious or infectious nature; also, while it prohibits the exposure of diseased cattle on roads, commons, or in woods, fields, stables, railway trucks and stations, &c., and open markets, it legalises the sale of the same in markets or places which are set apart for the purpose; and lastly, it wholly exempts from its supervision that fearful scourge, foot-and-mouth disease. As far as I may judge, this is a great omission, believing that the losses which accrue to the owner from its effects, are scarcely paralleled by any other—even pleuro-pneumonia itself. True it is, the owner in the latter case invariably loses the animal, while in the former diseases a death is a rare occurrence; but there are losses of this kind:

- The loss of sale, which is a loss of money;
- A loss of condition, which is a loss of money;
- A loss of season, which is a loss of money;
- A loss of grass, which is a loss of money;
- A loss of time, which is a loss of money;

Besides there is a great liability of all others, which are brought afterwards, being rendered similarly unprofitable; and together with the natural suspicion which prevails for some time afterwards with respect to his stock, adds considerably to the owner's losses from the causes mentioned.

I am indebted to my friend Mr. Hunting for the following facts in relation to this fearful disease:

“DEAR WILKINSON,—Herewith I send you a short account of a few cases of “murrain,” which have occurred in my practice this year. Appended to each is an approximation of the loss, by expenses, &c., it entails upon the owners of the affected stock.

“CASE 1.—Mr. Ora Wood, Seaham, a tenant of Lady Londonderry, keeps about thirty cows, all in high condition, being a new-milk seller. Average worth of each animal £20.

“This farmer bought a new calving cow at Newcastle market, which showed symptoms of the disease on the sixth day after coming home. This was not a very severe case; but one of the quarters became affected, being inflamed and indurated, causing much loss, not only of milk, but condition. Within a week eight others contracted the disease, two of which were very severe cases, one suffering mostly from the feet and irritative fever; the other from feet and udder also, two quarters of which became indurated. The disease went through all the stock on the farm, including several steers and queys. One of the steers, a two-year-old died, the hoofs separating from the vascular structures.

“Mr. Wood estimated his loss from this attack of murrain at not less than £70 or £80.

"CASE 2.—Mr. Errington, of South Hetton, bought a cow at Durham fortnightly fair. A week after coming home she became affected with 'murrain.'

"Several cases in the same byre soon happened in addition. One cow, of a delicate constitution, has never been well since, now four months ago.

"The loss to this farmer, a new-milk seller, was very considerable, certainly not less than £25.

"CASE 3.—Mr. John Willis, Seaham, keeps twenty-eight cows. Bought a cow at Darlington market, which brought the disease in the byre. At this farm the cases were not severe, but four cows had very bad udders, but no quarters indurated. The loss of milk and condition, &c., could not have been less than £20.

"CASE 4.—Mr. Errington, Stony Gate, Houghton-le-Spring, keeps twelve cows. The disease was brought into this byre by a cow bought at Newcastle market. All the other cows took it; one proved a very bad case. The pigs on the same farm also became affected, two of which died. Even some hens were attacked.

"Estimated loss about £25.

"CASE 5.—Mr. Sanderson, of Low Grounds, Seaham Harbour, also got the disease among his stock, numbering about twenty head, and by condition and milk being thereby sacrificed estimates a loss of £20.

"There are many similar cases I could give you, but time will not allow me; suffice it to say that few men can take a cow into any of our cattle fairs and bring it out again without contracting the disease. As a proof of this, I may say that in this district the disease is always much more prevalent for a month or five weeks after Durham and Newcastle Cattle fairs, than at any other time, certainly in the ratio of ten to two.

"My own opinion is, and has long been, that the annual losses to the farmers and dairymen of Britain is enormous from this disease alone; in my own practice certainly not less than £1000 per annum, which I calculate as follows:—one hundred customers at £10 each—£1000.

"I remain, &c.,

"C. HUNTING."

And now, gentlemen, having reviewed the various agents by which cattle traffic is governed, let me as briefly as possible state a few reasons why I think legislative interference, if properly carried out, would be useful at least to the agricultural interest of my own district. In this locality the heart of the coal trade, and birth-place—if I may so call it—of that vast railway system, which of itself has done more to revolutionise our social system, its agriculture, manufacture, and commerce, than any other means. In this district agriculture gives place, and is quite subservient to, the large mining and manufacturing establishments with which it is studded.

Our farm holdings are small, averaging barely 200 to 250 acres. The whole of the produce is sold on the spot, or in the neighbouring market, and what store cattle are needed, or milch cows required, are purchased, as a rule, in Newcastle or similar public markets, and the animals so purchased run a gauntlet with the infectious diseases of a market never clear from them; the cows are seldom bred from, and the bringing fat ones to market and purchasing in calves is a matter of constant recurrence.

The President took occasion to remark that as doubtless there would be the expression of various opinions on such an important subject as that which was embodied in the paper, in order to afford every person an

opportunity of giving his opinion, he would ask the gentlemen to confine their remarks to the space of five minutes if possible.

Mr. Thos. Thompson, Sunderland, said he thought no one would deny the great necessity which existed for legislative interference, and would ask what means should be suggested for preventing the spread of contagious diseases.

Professor John Gamgee congratulated the gentlemen of the North of England Veterinary Medical Association on their career, and for the successful state to which they had arrived; also the gentlemen from Yorkshire and Lancashire—presidents of the respective Veterinary Medical Associations—whom he had the pleasure in meeting on this occasion. He would take the hint from the President, and not occupy too much of the time of the meeting, and in reply to one question put by Mr. Thompson, said it was not possible to give an exact outline of the principles by which total prevention of contagious diseases could be secured. It was clear and patent to all that very little had been really done towards suppressing these evils, even by the profession itself; veterinary surgeons had not studied the subjects sufficiently, and the question which had been just propounded went far to prove the correctness of what he was saying. One great principle to carry out is to stop the sale and dissemination of diseased stock by unprincipled persons, also to prevent the recurrence of disease in byres by instituting a system of thorough cleanliness and proper ventilation; it is always a much wiser and creditable mode of proceeding to prevent the spreading of devastating diseases than to attempt the cure by the use of drugs, &c. He would propose that the Society or Mr. Wilkinson should forward his paper to Government, and thus show up a few facts as to the amount of losses which arise from the prevalence of foot-and-mouth disease; facts which the country at the present time is loth to believe; because animals suffering from that disease seldom die, the amount of loss depending upon it is as seldom accounted; and besides there are impediments in the way of such—vested interests—which are brought to bear upon it, and thus prevent legislation in a subject so lucrative to some parties; but Government is satisfied that the veterinary profession needs improvement, and that one plan is to call in its aid to such important matters as these. Government is also satisfied that legislature is needed, and should be strictly carried out; but there are Irishmen who love a scabby sheep; Scotchmen who love the foot-and-mouth complaint; and Englishmen who do not object to a piece from an ox affected with pleuro-pneumonia. In consequence of his having entertained such ideas with regard to the cattle disease question, he had been closely identified with the movement, but he would state he was not, nor had he been connected with the preparing of bills for Parliament.

Legislation should not interfere with cattle traffic, only in reference to those affected with disease, such as foot-and-mouth complaint, &c., and these should be slaughtered at once, and not allowed to go from fair to fair, and from market to market, contaminating all with which they come in contact, and leaving the disease in all the places they visit. What applies to epizootic apthæ applies also to pleuro-pneumonia. We should follow out the rules of the great European authorities, and legislate for special disease as well as for general disease.

The losses from the vesicular epizootic, it is well-known exceeds all others, not even excepting pleuro-pneumonia; they had been computed at six millions; he could state on authority, and after a careful study of the affair, that they reached much nearer to fifteen millions. The best way would be to institute a means of paying the farmer for his losses by

slaughtering diseased animals, and let him be shewn the necessity of keeping a strict watch over his stock to prevent the spread of disease, and to assist in the furnishing of statistics, whereby an accurate result could be obtained. As a rule he does not place the value upon, nor attach sufficient importance to the amount of loss which by indirect means he suffers; he forgets the calf which he lost; the "auld coo," which died; "ah, she was not worth much," and thus he palliates the nature of the loss of which he does not know, or care how to estimate.

A proper record of all cases should be kept, with the name of the owner, colour of the animal's skin, nature of its breed, name of the butcher, inspector or veterinary surgeon, &c., and thus facilitate a return of the actual extent to which these diseases prevail, as by no other means will any reliable information be collected.

Mr. Thompson thought the most advisable course would be to follow out a definite plan of inspection, so as to arrive at some data on which to base our calculations of the extent to which these diseases prevail; and the first essential point he thought to be obtained is the confidence of the employer.

Mr. Gudgeon thought the foot-and-mouth disease should be included in the Bill to be brought before Parliament next year, for he was convinced that, from experience which he had gained in the matter, the losses were far more considerable from it than any other cause.

Mr. H. E. Wilkinson considered the only effective check which could be brought to bear upon the present traffic in diseased animals would be to organize at once a body of efficient inspectors, who should be thoroughly qualified veterinary surgeons of well-tried skill, and well-known for probity and firmness of principle, receiving their power from Government, and devoting their whole time and scrutiny to public markets in order to detect diseased cattle, and make a public example of unprincipled salesmen; to begin at the byres is to begin at the wrong end; the markets afford the principal scope to a properly qualified inspector.

Professor John Gamgee suggested that veterinary medical associations, such as this, should set about collecting all the information possible on this subject, in order to furnish statistics of the ravages of contagious diseases; they should also report on the same, petition Government, and also co-operate with Government in order to bring about that state of security and exemption from the effects of those diseases. It is a work in which veterinary surgeons should engage themselves; and a work which should also be done apart from veterinary colleges.

Mr. E. C. Dray, Leeds, said, as President of the Yorkshire Veterinary Medical Association, he should feel a great pleasure in doing all that laid in his power in order to collect information, and had no doubt the members of the Society would also render efficient aid; but as far as his means were concerned—his practice lying chiefly among horses,—he felt they were considerably limited, nevertheless some useful information might be gained by a firm co-operation in each Society.

Mr. Greaves, Manchester, fully indorsed all that had been stated by Mr. Dray, and would use his best efforts to collect information. He might also say with Mr. Dray that the diseases of cattle almost formed with him the exception; but through his brethren of the Lancashire Society much might be obtained; veterinary surgeons, if desirous, can furnish more valuable information than any other class of men.

Mr. W. E. Naylor, Wakefield, said he wished to make a few observations, not that he felt that he could throw any particular light upon the subject, but more especially with reference to the aspect in which the foot-and-mouth disease was viewed in his immediate neighbourhood. He

thought there existed a policy in courting the complaint, and practice appeared to confirm the view.

Dairymen who possessed a number of cattle which were coming on for the purpose of milking, being turned out in large straw-yards, &c., had an infected beast turned among them, and thus the disease was communicated to the whole herd, and the effects completely got rid of before the period of their profitableness and utility had arrived. If they became affected apart from these circumstances they cast their calf, lost their milk and condition, &c., and proved a very serious loss and inconvenience to the owner.

Milksellers, as a rule, object to the use of caustic applications to the feet, as they give rise to much pain and irritative fever, and hasten on the loss of both milk and condition. The worst cases occur when the teats are affected and the calf is suckled, the diseases being communicated to the young animal. Bullocks bought at Darlington Market in September or October, frequently are affected with it, and even those which have never been near a market also take it; but no real objection appears to be held against it as they are supposed to fatten more quickly afterwards.

He (Mr. Naylor) had his doubts about its contagious nature, having known byres in which the cattle had been tied up for months eventually to take the disease, but not then even going through without exception. He had heard of exaggerated cases of aphtha in the human subject, in which it was stated the mouth was severely affected, and finger nails come off; but he looked upon these statements as on many others in regard to contagious diseases generally. Young animals and milch cows suffer considerably, older animals not so much. In many cases which occurred among two-year-old bullocks, first one hoof dropped off, and afterwards another, but with care and attention all went on well.

The worst cases with which he had to deal were those in which large abscesses subsequently formed in various parts of the body; in many instances he had liberated as much as three or four quarts of matter at once,—of course the formation of such occupy a great length of time, and leave a very great space or vacant part in the muscles, requiring, however, only ordinary attention afterwards.

It is the province of the veterinary surgeon to point out and remedy defects in ventilation, and give proper directions to owners for the domestic treatment of live stock, especially with the view of preventing the spread of disease when the animals are first attacked and found to be affected; he knew that there was some amount of difficulty in this, as it was almost impossible for a veterinary surgeon to state under some circumstances whether the animals had the disease or not, and therefore he felt it all the more necessary that he (the veterinary surgeon) should be more watchful and eager for the first signs by which he can accurately judge.

He (Mr. Naylor) did not object to the flesh of such animals; in fact, in most instances, he considered it as good as that of healthy ones, that is, if the beast is in good condition at the time of being slaughtered. The contagiousness of this complaint is overrated, similarly with that equally baneful disease splenic apoplexy, which foreigners state they can produce by giving the infusoria of hay, which had been allowed to stand to develop the infusoria which are supposed to produce that malady. He had tried it himself, but having failed in several instances, was undecided as to what the cause could be.

Mr. Hunting gave the details of a case at South Hetton, where among a quantity of cattle put up to feed, and by the introduction of diseased

animals, a loss of upwards of £200 occurred to the owner by the great impediment to fattening, &c. In fact, he remarked, the consequences of such a disaster are very considerable, even without the loss of the animal, and it becomes a question whether, in these serious attacks by "murrain," the loss would not be less if the animal died at the outset. What is wanted are effective measures to put a stop to the unprincipled practice of disposing of stock which are known to be unsound from infectious or contagious diseases; and also to prevent the farmer taking his diseased animals to market for the same purpose. As a rule, a farmer is afraid to let any one know that he has the disease among his stock, and, therefore, he keeps them on for some time without medical treatment, or means being adopted for having them slaughtered when in a condition in which no objection could be raised of their fitness for human consumption; but when he thinks a suitable opportunity has arrived, they are sent off to market and sold.

A man of his (Mr. Hunting's) acquaintance sold his diseased stock in Newcastle Market: a poor farmer living five miles from him purchased one, he kept sixteen cows, all of which took pleuro-pneumonia from the beast recently introduced, and he lost thirteen of the number.

Mr. H. E. Wilkinson asked Professor Gamgee whether in his opinion an action at common law could not, in such a case as that recorded by Mr. Hunting, be instituted, and damages claimed for injury inflicted, it being well known the animals were diseased at the time of sale.

Professor Gamgee said a great deal would depend upon the nature of the transaction, and question of warranty; but in all cases where such had been instituted the termination had been successful, and he considered it a proper course to operate strongly against the traffic in diseased animals. Before he concluded, seeing that the time was rapidly flying, when they must adjourn, he begged to propose a vote of thanks to the President, whom he had the pleasure of having known for some considerable time, for whose attainments he had the greatest regard. He considered him a type of the best kind of country members of his profession.

Mr. Thomas Greaves had great pleasure in seconding the proposition, and heartily endorsed all which had fallen from Professor Gamgee.

Mr. E. C. Dray rose to propose a vote of thanks to Mr. H. E. Wilkinson, for his instructive paper, and felt that it was almost impossible to thank him sufficiently for laying before the meeting such an array of facts in connection with the sale of diseased cattle and meat, &c., and he hoped to see societies of this nature turning their attention towards the means for suppressing the evil. Much might be done by a well-timed and spirited co-operation in this as well as other matters of interest to the profession. In their own (the Yorkshire) Society the subject of mal-practice and alleged want of skill, in which Mr. Forbes, of Reigate, Surrey, had been mulcted in heavy damages, had been considered at some length, and terminated in a resolution being passed, requesting the Hon. Sec. to write for further particulars of the case. Such matters were of the deepest importance to the profession, and he would be glad to see its members alive to their interests and protection. Societies of veterinary surgeons should take cognisance of them for mutual good.

The Hon. Sec., Mr. G. Armatage, had great pleasure in according his support to a vote of thanks to Mr. H. E. Wilkinson, for the paper which he had brought forward. He felt it had been duly appreciated by all present; as for himself, he was glad to have the opportunity of hearing the subject of legislative interference, with regard to diseased cattle, so thoroughly gone into. That there is a great necessity for legislation there is no doubt; but he, for one, felt a great difficulty in thoroughly and effectively putting a stop to the evils which existed, and thought it a

subject which the veterinary surgeon in practice should approach very cautiously. Farmers are proverbial grumblers, and any embargo placed upon one would render him the more tenacious, and particularly if his own veterinary surgeon had the power of placing the stock on his farm in quarantine would his utmost vengeance fall upon him, and to the cost of the practitioner, however just he might be. Undoubtedly the most suitable persons for inspectors are qualified veterinary surgeons, a staff of which, with powers from Government, would render efficient aid, but only when the whole of their time was given up to the duties.

In his opinion the foot-and-mouth disease possessed remarkable powers and eccentric characters, but, nevertheless, it was very destructive to the profits of the owner. Out of upwards of one hundred feeding cattle belonging to his employer, the Marchioness of Londonderry, very few escaped the complaint. In one large byre five or six standing next to others badly affected never took the disease; one, however, of the worst died from extreme prostration, arising in consequence of profuse salivation. When the time arrived, in May last, for the sale of the whole, no difference could be detected in their condition; but it must be remarked the feet were but slightly affected, and never required dressing. The treatment adopted was the administration of two drachms of Ferri Sulphas, once or twice a day in water, which acted as a good wash to the mouth as well as a tonic.

At this stage dinner was announced, when the company adjourned, and were joined by Professors Simonds and Varnell, R. L. Hunt, Esq., President of the Royal College of Veterinary Surgeons, &c.

THE DINNER

was served up in the large dining-hall of the hotel. On the right of the President were seated Professor Simonds, R. L. Hunt, and E. C. Dray, Esqs.; and on the left Professors Varnell and John Gamgee, and Thos. Greaves, Esq. Mr. Thos. Thompson, Sunderland, occupied the vice-chair.

On the removal of the cloth,

The President proposed "The Queen," the pattern of sovereigns, and brightest example to the mothers of England. (Cheers.)

He next gave the "Prince of Wales, Princess of Wales, and the rest of the Royal Family." The Princess, although but recently become one of us, possessed the love and sympathy of the whole nation; for while she, as it were, was compelled to wear a smile of satisfaction and happiness, as becoming her position here, no one could estimate the harrowing sensations which were doubtless gnawing at the heart, in consideration for her father, mother, brothers, and sisters, and friends at home, and her country, now mixed up in the horrors of war and bloodshed. (Cheers.)

The President afterwards proposed "The Army, Navy, and Rifle Volunteers."

Mr. C. Stephenson briefly responded.

Then followed from the Chair the toast of the evening—"The Veterinary Professors of the Royal Agricultural Society of England."

The President reviewed, in most glowing terms, the career of Professor Simonds, as the senior professor, and in connection with works which had become an authority in veterinary matters, such as his treatises on 'The Teeth,' 'Variola Ovina,' 'The Rot of Sheep,' &c., together with the valuable assistance he had rendered in regard to the late outbreak of smallpox among the sheep of the southern counties. No matter whether we regarded him as a teacher in the occupation of the professional chair, or as a friend

and guide to the young and inexperienced, he might say the sterling characters of Professor Simonds were as great as his professional qualities (cheers.) What he might say of Professor Simonds he could also say of Professor Varnell. Both were ever ready to help when required, lavish in their encouragement, and complete analysts of the characters of those with whom they were called upon to deal, qualities which eminently fitted them for the high position which they occupy as the heads of their profession. (Cheers.)

Professor Simonds said,—A man must be made of sterner stuff than he was to be unmoved by the high eulogiums which the President had been pleased to make. If there was one point in which it seemed to him justice was done, it was the remark which had been made as to his onward progress with the profession. He had been in connection with it since boyhood, and, if old age and gray hairs permit, the members would see him in it for many years to come. (Cheers.) He had been compelled to look upon this meeting with a great amount of pleasure and pride, as an effort springing from the professional body. The honour done to himself and colleague by the “North of England Veterinary Medical Association” that day was unprecedented in the annals of veterinary medicine, for, as far as he was aware, such an honour had never before been done to any two members of the profession, and for such a special mark of esteem he could not but feel thankful. As connected with the Royal Agricultural Society of England, he could express the satisfaction he felt in seeing the great good which accrued to the profession from its operations; it had been of immense benefit, and doubtless would continue to be so. Going no farther than the prizes which were annually distributed for subjects proposed as essays, the successful competitors, as members of the profession, had derived the greatest benefit, for invariably they received a greater share of patronage in their locality than before, in consequence of the value placed upon their opinions and ideas. No matter whether they came from this side of the Tweed or the other side of the Tweed, all, if successful, reaped a profitable share of the reward afterwards.

He was glad to see that his northern friends had not been slow to take advantage of the prizes offered, and he would give them every encouragement to proceed in the work before them. He had no feeling of jealousy towards them; on the contrary, he looked upon the graduates of the Scotch schools with respect and admiration, in having made choice of a high calling, and also as friends and honorable men joined together in one common profession. The formation of local veterinary medical associations was a source of great satisfaction to him. As they spring up in different parts of the kingdom, so the effects of great good would be apparent. The meeting together of the members as one body was calculated to advance their common interests, as well as social and professional standing. Had it not been for the existence of the “North of England Veterinary Medical Association,” such a meeting as the present, and in such numbers, could not have taken place. He could not understand how it was that this and similar institutions had been commenced in the north, and that in the south scarcely any steps had been taken towards effecting the establishment of such societies. He could not estimate their qualifications too highly, nor overrate the importance of veterinary surgeons becoming members, and he hoped that no person present who was not already a member would leave the room without enrolling himself as one. (Cheers.) It is as necessary for the veterinary surgeon to keep pace with the tide of progression and development in his profession, and with as much eagerness, as when he was a student. In fact, he is, or should be, a student the whole of his life, and would ever find a valuable source of information in meeting with his brother practitioners.

The Professor again returned thanks for the honour done to himself and colleague, and sat down amidst great applause.

Professor Varnell said he felt that he could not express in words the sentiments which he entertained towards the members of the North of England Veterinary Medical Association for their great and honorable notice of himself and colleague, but he could feel how much he valued the kind reception which the veterinary surgeons of the North of England had, doubtless at some trouble and inconvenience, resolved to give them. It is highly gratifying to see such an amalgamation in a border town, and near where there are already three schools of veterinary medicine. Although he might wish to see these schools more united, nevertheless he felt highly gratified at the signs of cordial good-fellowship (cheers) which existed among their several members. It was a mark of onward progress in the common cause of the profession. He certainly did not anticipate meeting with such numbers when the invitation was received by him, and he considered it a manifestation of a general desire for union.

The existence of such local societies is a great benefit to the community, as well as highly creditable to their promoters in these northern counties. Although carried out in the north, the idea was first promulgated in the south, by Mr. Raddall, of Plymouth; but how it was that the suggestions and ideas in connection therewith had not been acted upon by the southern veterinary surgeons he was not aware. The influence of these societies is great, as well as varied, and they may be looked upon as lights diffused throughout the profession. I can understand that they may have a salutary effect upon the schools. It would perhaps be well for these associations to keep this in view, for they (the teachers) were not perfect, nor did they ever expect to be. (Applause.) Professor Varnell again returned thanks for the very kind reception afforded by the Society.

SONG:—*Mr. E. C. Dray*—"This day a Stag must die."

The Vice-President, Mr. Thompson, in proposing "The Veterinary Profession," said—My impression is, gentlemen, that the veterinary profession is rising in importance, and gradually, though slowly, taking its place side by side with other scientific and liberal professions. I think in one particular you will agree with me, that we have represented here a fair specimen of its importance, when the North of England Veterinary Medical Association has seated around its festive board the *élite* of the profession, which body I feel is at present represented by men of ability, energy, and industry.

I, for one, believe that if the working members of the veterinary profession, in the daily business and cares of life, remain true to each other (cheers), while the professors, teachers, and presidents, are all harmoniously cemented together in one grand principle of professional development, a glorious future is in the prospect; and I would venture to predict that the time is not far distant when each member, in his turn, shall take his stand in the elevated social position to which, as a professional gentleman, he is entitled. (Applause.) He (Mr. Thompson) would not say more, but give the "Veterinary Profession," and unite with it the name of Mr. Hunt, the President of the Royal College of Veterinary Surgeons.

Mr. Hunt thanked the Vice-President and gentlemen of the Society for the marked attention which he had received at their hands. The prosperity of the veterinary profession was a subject dear to all, and claims from its individual members their entire regard. Much also depends upon their individual as well as united action. No matter to what extent we legislate, the point desired will not be attained until the profession

values and preserves its own respectability; each member should watch over his own actions with a very jealous eye, and be determined to fulfil, to the letter, the duties required from him as a brother practitioner.

As provincial veterinary medical associations are originated and carried out immense good will result. The meeting of man with his fellow will tend to bring about a generalisation of feeling, and more definite action in the whole body. At present there is too much apathy, too much laxness in the profession, and little, if any, real interest taken in matters affecting the community at large, and in consequence few members attend the meetings in Red Lion Square. Members do not come up as they should do. If matters of such weighty importance, which are to be discussed at the general annual meetings of the corporate body—are to be thus slighted and neglected, how can it be expected that the general working of its individual parts should preserve that order and arrangement as might be expected if a proper amount of enthusiasm and genuine spirit was brought to bear. The profession must bear in mind that these meetings are open to all connected with the corporate body, and were for no party purposes, but for the proper administration of the requirements of the profession; there all political questions are open for ventilation and discussion; in fact, there was every opportunity afforded to those whose wishes are for the improvement and elevation of the profession. This repeated absence from the meetings, and constant inattention to the interests of the whole body, is a complete injustice to the profession, and much amelioration cannot be expected where so little interest is displayed. As President of the Royal College of Veterinary Surgeons, he felt a great pleasure in representing that body at this meeting, and he begged that in future, as a step towards rendering effective aid in the general progression and advancement, the members should present themselves yearly in the month of May, in each year, at Red Lion Square, and testify, by their presence and voice, &c., the real interest which they felt for the welfare of the whole profession. Unless some trouble is taken in such matters there will be no signs of improvement. (Hear, hear, and cheers.) He begged also to thank the members for the most flattering reception which they, as officers of the Royal Agricultural Society, had met with from them and from the inhabitants of Newcastle generally. From first to last the kindness on all hands was extreme, and almost embarrassing.

SONG:—*Mr. H. Hunter.* “Nihil Desperandum.”

Mr. Armitage, Hon. Sec., in proposing the next toast, said:—I rise with a full conviction of the importance of the task which has been delegated to me, and have to regret that it demands greater justice than is comprised within the capabilities of an individual like myself. It has been frequently said, and, doubtless, with some amount of truth, that the veterinary profession was never higher than at the present moment; but it cannot be denied at the same time, that if the hand of improvement has passed over it, a much greater change for the better might be judiciously effected. Talent, as a rule, is not so much encouraged and patronized in our body as it should be. No matter where we look, the well-being of our valuable domestic animals in many instances is entrusted to the care of persons without a particle of either respectability or understanding to recommend them; and not in every one by the poor owner, but in far too many by the rich landed proprietor. In this immediate neighbourhood, although there are qualified veterinary surgeons who, in my opinion, are second to none in the kingdom; there are, nevertheless, hundreds of horses and ponies, especially below ground, left to the merciless judgment of the blacksmith or horsekeeper. (Hear,

hear.) Surely, if the racer, the hunter, carriage horse, or hackney, require the best and most perfect treatment in their more advantageous position, the poor pit horse or putting pony—under every disadvantage—should have the best of skill displayed for his well-being and security. (Cheers.) If the science of chemistry is available for the ends of the “viewer” of the colliery, are there not half a dozen others which, in addition, are needed to be thoroughly understood by the veterinary surgeon in his attendance upon his patients. Surely, if the man without education and qualification is worth employing for the treatment of their ailments, it must be worth infinitely more to the owner to engage a thoroughly educated man, whose efforts would be naturally directed towards the preventing of those diseases; at all times a more profitable proceeding than the cure of them. (Hear, hear.)

I look upon these provincial veterinary medical associations, gentlemen, as one of those great beacons which has been ignited, and is now indicating by its powerful flame that eminence to which we as a body are wending our way. They are also to be viewed as a distinguishing mark by which the profession may be known. Young as this association is, its origin and purposes have not been without effect.

The public, that far-seeing and discriminate body, have, throughout, looked upon the veterinary community as a disunited class of men; if one has not given satisfaction, they immediately call in another, and in this manner the self-respect of an individual has often been sacrificed by a supposed honour in the preference and attention; he shows there is no confidence between himself and brother practitioner, and the selfish employee turns it to his own account. Let the veterinary surgeon testify to his having a respect for himself and brother practitioner, and the public will find beneath his acts, motives which must claim for him the greatest consideration.

I have frequently witnessed the good effects of that union, so much desired in other parts, which exists in the flourishing city of Manchester. We see it manifesting itself, and nestling as it were under the wings of the veterinary medical associations of that place and Leeds; and I am proud to say we have not been insensible to its invigorating influences in the town and district of Newcastle-on-Tyne. (Cheers.) Of Manchester I have often heard it remarked, “If you get one of the ‘vets’ there to make any proposition, depend upon it not only will it be on the strongest reasonable foundation, but to a man will they carry it out.” (Cheers.) This is the sort of union we want—unity of heart, of purpose, and design; not unity of opinion merely, but unity of principle. Men accomplish the same ends by a variety of ways; let the veterinary surgeon look to this principle, and be “A man for a’ that.” (Cheers.) Diversity of opinion will occur, but it is only by contact of man with his fellow, that its proper tendency will be observed; and association acts as the leading principle to the veterinary surgeon; its tendency is to show up a man in his true colours, to cause him to extend the right hand of fellowship, and no longer go on hating or envying his neighbour without knowing why. Association also stimulates the operations of the mind, and develops ideas which otherwise would be lost or never arrive at maturity. Although I look upon the aged and practical man with a kind of innate reverence, yet I value the principles of sound science and correct investigation; the mere practical man waits for results, whilst the well balanced mind, thoroughly trained in the process of events, their nature and bearings, acts by anticipation and induction, which with practical details, are the hand-book and guide to future honour and emolument. (Hear, hear.)

I will not detain you longer, gentlemen, but propose the "Provincial Veterinary Medical Associations," coupling with the toast the names of those gentlemen whose eminence in the professional community fully entitle them to the distinguished position which they now hold as Presidents of the respective societies in Yorkshire and Lancashire, Messrs. Dray and Greaves. (Loud applause.)

Mr. E. C. Dray, Leeds, in the course of his well-timed remarks, said he valued the principles of veterinary medical associations, and felt more and more the necessity for a perfect unity in the bond of brotherhood; if the veterinary surgeon will but render that effective assistance in carrying out their design, their influence must inevitably be that of mutual good; the necessity of a spirit of co-operation always exists, and the more the practitioner applies to that necessity, the more effective a member of the profession will he become, and the greater will be the impetus with which he must urge on the machine of science. In his dealings with the public there exists a necessity for each practitioner, not only to be on "good terms" with his brother, but also that mutual good feeling and desire for each other's welfare and benefit should exist, so that, when a misunderstanding takes place between a client and himself, he can call in the aid of his friend to smooth down the path of difficulties. Mr. Dray then gave the details of a case in which he was called in to endeavour to maintain the standing of a brother practitioner against a client who had resolved to enter an action for alleged want of skill in treating his horse which had died, and stated that after a *post-mortem* examination had been made, the owner, who before was all storm and passion, now became convinced of his mistake, and not only offered the most ample and sincere apologies, but, sensible of the respect and good understanding which existed between the professional friends, insisted upon their accepting of the best his house could afford. (Cheers.) He (Mr. Dray) felt sorry there was not more of this co-operation amongst them; it is a result of great apathy and sluggishness of action. Many there are in the profession who are entirely ignorant of what passes in the veterinary world; he knew a veterinary surgeon at the present time, in one of the largest towns in Yorkshire, who is neither a member of a veterinary medical association, nor does he take in a periodical in connection with his profession.

He (Mr. Dray) had a great desire to see the advancement of the profession and promotion of the veterinary surgeon,—that is, necessary promotion, for such might go too far; his ideas were not so extensive as to create nobility from the ranks of the profession. This reminded him of a saying reported of George IV, who never was remarkable for having said many witty things, but on this occasion, when asked to make Sir Astley Cooper a lord, replied, "Why then we shall have all the ladies crying, good lord deliver us." (Cheers and laughter.) The veterinary surgeon in every respect fills a most responsible position, and his office and the nature of the calling he follows are quite incompatible with apathy and indifference.

Mr. Thomas Greaves, Manchester, said, Mr. President and Gentlemen,—If there be one circumstance in connection with this my visit to your town and association that is not wholly destitute of a particle of regret, it is this simple incident, that the responding to this most interesting toast, viz., "The Provincial Veterinary Medical Associations," should not have fallen into the hands of a better and abler man, to have done full justice to so important and interesting a subject. (Cheers.) The veterinary profession, headed as it is by colleges which are the pride and glory of the land—colleges conducted by professors who are an

honour to the exalted positions they occupy—must, by the movement that has recently taken place in the provinces, and also by the deep interest that has been excited throughout the length and breadth of the land, be stimulated to advance. By these associations, I say, and with a full knowledge of all these facts before us, who can doubt the great good that must result, not only to our own profession specially, but to society at large? It is a simple rule-of-three question; when we have a greater number of intellects at work, we must have greater results; and let me ask, can there be anything more grand or noble than the spectacle of a great intellect grappling with a great difficulty? We have heard a great deal said about manly occupations: can there be (I would ask again) anything more truly manly than in associating together, and exercising the best abilities God has given us in mitigating the ills that flesh is heir to, in ameliorating and circumscribing the evils engendered by civilization? (Hear, hear.) What nobler occupation can be conceived than in employing our best abilities in tasks such as have been laid before us this afternoon, viz., checking the ravages and limiting the area of various contagious and destructive pestilences? Meetings of these kinds must have their effect. They give us a feeling like unto giants refreshed with wine, and an increased determination to go forth and to do something worthy of the noble profession to which we belong. (Cheers.) In my own city, one of our ablest and most experienced men, Mr. Lawson, has in a most laudable manner undertaken to bring into our association the subject Tetanus. He has devoted much of his time and mind to it, and now adopts a method that has *cured eight out of ten cases*. His son, too, has devoted much of his time and mind to another disease considered hitherto all but incurable—I allude to cancer. He has cured two out of three cases; they were cases amongst the worst I have ever seen, and the third is on the high way to recovery. I allude to these things in order to illustrate the great value of associations. I have no doubt but they have stimulated thought and contributed to results such as I have named. Then as to contagious diseases, I am apprehensive that I shall be unable to contribute any knowledge upon this great and important subject, perhaps the most important veterinary question that can engage the mind of man. Situated as I am in one of the largest cities in the kingdom, where rot in sheep is unknown, where pleuro-pneumonia is only occasionally seen, my opportunities have been limited; but limited as have been my means of observation, I have nevertheless paid some attention to this class of diseases, and I am rejoiced to see so many practical men met together to make a collective effort to devise some means whereby their dreadful effects may be in some measure, at least, mitigated. The question is no fiction, although it may have been somewhat over-coloured in some quarters; it is, nevertheless, a very weighty and important one to study. It is the duty of every man to do all he can to circumscribe the area of contagion as much as possible. If some historian or romance writer, some man of a high order of intellect, were to take it into his head to make this subject the theme for his pen, I can easily conceive him drawing something like the following picture:—“At a certain period in the history of a great nation, in the midst of its greatest state of prosperity, it was visited with a most destructive pestilence, which smote its flocks and herds. So wide-spread were the ravages of this pestilence, that not only were the agricultural classes of that but every surrounding nation reduced in numberless instances to penury and ruin. Everything that science and skill could suggest was done to check its fatal progress; the government and many scientific bodies in each nation strained every nerve in vain; the disease went on with more or less malignity for twenty

years or more. Mankind mourned at this state of things, and seemed disposed to murmur, but about this time certain bodies of daring, earnest men, conceiving it to be their peculiar province, and goaded on by the pressing emergency of the case, and stimulated by public opinion, collected all the knowledge and skill possible upon the point from past experience; they took council together, their understandings were greatly enlightened, and they devised certain methods which led to a better means of preventing all contagious diseases, and which in the end resulted in entire success, by which not only the agricultural classes, but the entire nation, was benefited in a degree that was wholly unprecedented." Gentlemen, one portion of this picture is already distinct before our eyes, and it is for us to fill in the remainder of it. The essay we have heard read has very greatly advanced our means. The remarks that have been so well made by other eminent and able speakers bring the picture still nearer to perfection. I would it was in my power that any remarks of mine could put the finishing touches to it, so that it could stand out conspicuously before us, and we could say, it is finished, the task is accomplished, and we can now limit and circumscribe all contagious diseases. But, gentlemen, if we have not yet achieved this, one thing is certain, viz., that this meeting and this discussion cannot fail to awaken deep thought in the breasts of all men concerned, and I hope and trust they will produce a great improvement in our knowledge and management of these perplexing and dangerous diseases, and especially advance that kind of knowledge necessary for controlling and confining their subtle and dangerous disseminating tendencies. (Cheers, and hear, hear.)

SONG:—*Mr. G. Armatage*. "Trouble your heads with your own affairs."

Mr. Dudgeon, Sunderland, proposed "The Veterinary Colleges north of the Tweed," and in eulogistic terms spoke of the valued assistance which had been rendered to the profession by the exertions of Professor Dick, whom he was sorry was not present, and the influences of the Clyde Street School as emanating through the teachers. He also touchingly alluded to the loss which had been sustained by the profession in the death of Mr. Barlow, one of its brightest ornaments. To the student a father, friend, and teacher; to the world a philosopher. To have passed one's noviciate under him was alike an honour and a privilege, and he would exclaim with Byron—

"Oh! what a noble heart was here undone,
When Science self destroyed her favourite son!
Yes; she too much indulged thy fond pursuit,
She sowed the seeds, but death has reaped the fruits."

Of Professor Gamgee he (*Mr. Dudgeon*) knew but little personally, but felt he had one grand object in view, viz., the elevation and advancement of the profession. (Hear, hear.) He read his writings, and looked upon them with great consideration; although not always thinking alike with the Professor, he was still of opinion that no one could deny those writings emanated from a scholar and gentleman. (Cheers.)

Professor John Gamgee returned thanks, and on reviewing the history of veterinary medicine north of the Tweed, said he looked back with much pride and satisfaction upon the great work which had been accomplished in so short a time; but the consideration of it should by no means weigh against that which in future must be effected, when the interests of the general body of the profession is concerned. Much has doubtless been done, but more has yet to be done, and it would be his (*Professor Gamgee's*)

high aim to watch over the peculiar interests of the profession. His motto is, "Forwards and onwards;" and if in the interests of the profession he were called upon to do anything, he would be no obstruction or hindrance, but rather a helpmate and assistance. As we take our stand in the order of changes and events, his school might be second, but we shall endeavour to be first; and such is our desire for the welfare of all concerned that at any time, if any member can point out any method by which an improvement can be made in the present curriculum, with a view of turning out improved veterinary surgeons, they will not have a deaf ear at the new Veterinary College, Edinburgh. He felt that it was highly necessary that something should be done in the shape of improvement in the system of remuneration, so as to secure the admission of first-class men into the profession. It could not be expected that great men would enter a community whose services were so poorly requited. It is a disgrace to the profession; and so long as men are so poorly recognised and valued in one of the noblest pursuits, we cannot expect that talent will be on the increase. What can be said of the remuneration to practitioners can also be said of teachers; and with shame be it said, one of the greatest lights and ornaments in the profession,—now no more,—an authority in all scientific matters, was in receipt of only one hundred pounds a year.

One other point which deserved attention, he thought, was that of College fees. He had often heard it remarked that those of the London College were too large; for his own part, he (Professor Gamgee) would double them, and have them 50 guineas, and thus secure the entry of persons of a superior class. (Hear, hear.)

Mr. H. E. Wilkinson next proposed, "The Editors of the Veterinary Journals," and observed that he considered the sentiments of the profession were well represented in the recognised journals of the body. Were it not for those journals, we should not have the glowing elocution of Professor Gamgee, the calm logic of his old teacher, Professor Simonds, or those scientific emanations from the pen of Professor Varnell. (Cheers.)

Professor Simonds said—The interests of the journals were vested as much in the contributors as in the editors, and their value depended as much, if not more, upon the former as upon the latter. They are mainly and essentially the journals of the profession, not the journals of the editors. He (Professor Simonds) thought, with Professor Morton, that if veterinary surgeons would write essays on given subjects, it would enhance the position of the profession. Mere details of cases are often not sufficient, but the ideas and opinions of persons in reference to disease, &c., are to be courted. All should endeavour, however, to contribute something to the common stock, no matter if their subject occupied but six lines. So long as it consisted of purity of thought, and was in accordance with strict principles of science, whether it came north or south of the Tweed, equal attention should be paid to it for furtherance of veterinary knowledge. He could only add that their journal was at the service of the profession, which they can use as they like, without minding the space. They (the editors of the *Veterinarian*) were in a position to afford additional space, without additional cost in the price of publication. The *Veterinarian* now finds its way to India, China, America, and most of the colonies, to distant friends in the profession. It had proved a valuable medium for the preservation of the transactions of such societies as the North of England Veterinary Medical Association, as well as a record of cases of interest. He would give his contributors—many of whom he could recognise present—every encouragement to forward all they could, and thus add to the general stock of information upon the science of veterinary medicine.

Professor John Gamgee also urged upon the members the great importance of contributions being forwarded for publication after the manner of "Youatt." Veterinary surgeons should write more upon subjects of a special character, and work into the hands of those connected with the press, as by its influence much good can be accomplished. He valued the powerful influence of the press, and its connection with the compilation of veterinary literature. Well might we profit by the acts of Professor Morton, who had done more than any other man for the profession in that respect: He (Professor Gamgee) would call upon all present to drink a bumper to the health of Professor Morton. (Cheers.)

Professor Simonds briefly, but eloquently, returned thanks on behalf of Professor Morton.

Mr. John Fairbairn, Alnwick, proposed "The Visitors," and said—However much they might be gratified in meeting with their professional brethren at these times, it was a matter for rejoicing when gentlemen—distinguished strangers from great distances—did them the honour of attending their meetings; it was satisfactory to know there were gentlemen who took an interest in the profession and its advancement. (Loud cheers.)

Mr. McKenna, Belfast, replied—If he had come for no other purpose than to meet his friends on this occasion, he could not receive a greater honour than the privilege of meeting with them under such very favorable circumstances. He certainly did not consider that there would be such a meeting when he received the invitation, and he scarcely believed the profession could have been drawn together in such numbers. When his friend and old pupil, Mr. Wilkinson, wrote to him, he declined on the score of business; however, a second letter came, stating in peremptory terms, "You must come, for Simonds is coming, Varnell is coming, and a first-rate meeting is expected." At the moment he received this intimation his horse and gig were at the door, and a steamer was ready to sail; so he at once ordered back the former, and took the latter for England, saying within himself he should be proud to meet such persons. He felt there was need for many meetings of this kind, and their influence was needed also in bringing about a state of unity in the profession, especially with reference to those instances where a practitioner felt his reputation to be at stake.

Mr. McKenna detailed one or two instances where the character of a veterinary surgeon would have been ruined and his future prospects blighted, had it not been for the friendly assistance of professional neighbours. (Hear, hear.)

Mr. Cubitt, Bacton Abbey, Norfolk, said—He should be wanting in courtesy not to return thanks for the compliment paid him as one of the visitors, and for the kind welcome received. He was not a member of the veterinary profession, but as a practical farmer he felt a deep interest in all that appertained to it, more especially with regard to its future progress and development. He had listened with pleasure to what had fallen from preceding speakers. All seemed to agree that the Veterinary profession did not take that eminent standing to which it was entitled, nor did he consider so desirable an object could be attained till a higher standard of education was introduced, and the College examinations embraced a wider range. In looking over the registered list of the members of the Royal College of Veterinary Surgeons, he was surprised to find so important a county as Northumberland so badly represented. It did not say much for the general intelligence of its farmers to find them entrusting the lives of their valuable animals in the hands of *farriers, cow leeches*, or other unqualified men, who generally managed to

kill more animals than they cured. He knew a case in point, in which the lives of some valuable draught horses were destroyed by one of these quacks. The animals were suffering from an unusually severe attack of influenza. The *old remedy*—bleeding and purging—was resorted to, followed, as might be expected, by utter prostration, and ultimate death. No doubt many valuable animals were still destroyed by unskilful and injudicious treatment. This class of men are happily disappearing from the southern counties, and when farmers really know the importance of veterinary science as applied to pathology, they will cease to employ these cow leeches or *veterinary quacks*.

There is a wide field open to the educated and skilled veterinary surgeon. One important subject to which he might with profit direct his attention is that of cattle food. The ever-increasing demand for meat necessitates an enormous consumption of artificial food. The farmer is subject to the greatest fraud; indeed, too often he becomes the victim of unprincipled men. How great would be the advantage to have within his reach the scientific veterinary practitioner, who could analyse that food, and direct him in its proper application. Their chairman (Mr. Hunting) had published a valuable pamphlet on the principles and economy of horse-feeding. It should be read by all interested in cattle-feeding. He (Mr. Cubitt) had, as an individual, profited by its perusal, and he thought this a fitting opportunity to thank Mr. Hunting for such valuable information. He agreed with the professors, that these matters were not sufficiently ventilated. It was a pity that men so advanced in their profession should hide their light under a bushel. It could only be from a comparing of notes and from a well-kept record of what was passing in the veterinary sphere, that the profession could hope to reach that pinnacle of success they were now somewhat tardily approaching. He could not resume his seat without a passing remark on what had fallen from Mr. Stephenson, who expressed a hope that the strangers visiting their town had been treated with kindness, and been gratified with what they saw. For his own part, he must beg to say that he had met with the greatest civility; all seemed to vie with each other, from the gentleman at the head of those vast factories to the humbler mechanic, in their desire to show and to explain those wonderful engineering sights on the banks of the Tyne. In going over such works as Stephenson's and Hawthorn's, as also Palmer Brothers' at Jarrow, he could not but feel a wish that those people bred and born (in the more isolated districts of the kingdom) with cramped views and narrow minds could come here and see what was going on *in the world and for the world*. Who could witness the progress of those beautiful engines—many to go abroad, destined to open out the resources of foreign lands—and the building of those magnificent iron ships, without contemplating the probable great and noble results, as tending to the spread of civilisation, and adding to the happiness of the human race?

Mr. Cubitt concluded by again thanking Mr. Fairbairn for the honour of having his name coupled with the toast of the visitors, and trusted such meetings of the profession would become more frequent, and not fail to have the desired effect.

Professor Gamgee proposed "The President," and spoke of him not only as a gentleman, but as a successful practitioner; one who tested men by a peculiar gauge, and in proportion to their willingness and capabilities for good works. He had known him for many years as a friend and brother professional, and considered him, from his high professional attainments, eminently calculated to fill the honourable post of President of the North of England Veterinary Medical Association. (Applause.)

Mr. Hunting, in reply, stated that nothing inspired him with greater delight than to meet his friends in the profession; he had a great desire for the mutual good of the body, and entertained a high respect and admiration for all who had the courage to make sacrifices for it. (Hear, hear.) He had the greatest satisfaction in being able to recognise in his immediate professional neighbours friends of upright, honest, firm principles; men of unflinching zeal, hard workers in their professional avocations; men of determined purpose and scientific ability. He had known some of them for a considerable period, and felt that in Wilkinson, Scott, Thompson, and others, he was as well positioned for sincere attachment as man could boast of. (Cheers.)

He had always been a hard worker himself, and his paramount object was to make himself generally useful to all in the profession, and render himself worthy of his employers' notice and esteem. He had met with many friends, and had very great reason to value their assistance, and hoped never to forfeit their good opinions.

As for the post he occupied of President of the Society, no one knew his own failings better than himself, and he felt convinced that others more qualified (No, no,) could have been found to fulfil those important duties. However feeble his efforts may have been, they cannot have been exceeded in sincerity. (Hear, hear.) *Mr. Hunting* begged to thank all present for the honour which had been conferred upon him, and he assured the Society that during the tenure of his office, and in whatever other capacity he might stand in relation to it, so impressed had he been of its real value to the profession, that it would always receive his first and most important consideration. (Cheers.)

Professor Varnell next proposed "The Vice-Presidents," whom he stated to be men of well-known ability and usefulness in their professional capacity, and in their private sphere possessed of the confidence of all who had the pleasure of their acquaintance. They did honour to the Society to which they are connected. (Loud applause.)

Mr. Thompson said he felt at a loss how to shape his course of reply under such flattering eulogisms which had fallen from Professor Varnell. If he was useful in his profession, he felt he was pursuing a path of duty which should be the first thought of the veterinary surgeon towards his employer. If his private worth was such as to merit for him the good feelings and opinions of those around him, he might say he had accomplished much, of which he might be proud. So far as his humble assistance was concerned, and as one of the Vice-Presidents of the Society, he should never be found wanting when the call of duty sounded on behalf of his brother practitioners. (Cheers, and hear, hear.)

Mr. H. E. Wilkinson, with much brevity and neatness of speech, said he felt the proudest satisfaction in being one of the vice-presidents of such a useful Society, and that, in countenancing the efforts of the general body, a noble result must be expected. (Loud cheering.) As an inhabitant of Newcastle, he begged to offer a cordial welcome to all who had been induced to visit that town by the meeting of the Royal Agricultural Society. Probably they would not find the district equal to theirs of the South, or the mannerisms of the Northerners so easy and refined; but under all there is a cordial hospitality which flows from hearts sincere, enveloped as they are in such a rough exterior. He begged that when his friends were tired of the sun and heat of the South, they would again pay a visit to the pitmen of the North. (Loud laughter and cheers.)

The President said he should feel he was neglecting an important duty if

he did not endeavour to pay some tribute of regard for the exertions of their Hon. Sec. Mr. G. Armatage.

Societies of a public and private character have great need of a prime agent, one upon whom can rest the responsibilities of the whole concern, and one capable of taking upon himself duties of a most arduous character. The energy and clearness which Mr. Armatage had displayed not only in carrying out the wishes and objects of the society, but the principles of its formation, for it must be known its origin is entirely due to him, eminently characterised him as a most efficient officer, and one calculated to do honour to the profession to which he belonged.

He—*Mr. Hunting*—must confess that when Mr. Armatage first intimated to him his desire for the formation of the society, he saw no great probability of its establishment; but Mr. Armatage, nothing daunted, pursued his course, and wrote letter after letter, to many of which he never received replies. Still, however, he went on, and not satisfied with negative replies or silence, he next travelled miles to pay a personal visit and win over by his persuasive eloquence. Such is the character for perseverance of the Hon. Sec., and to him alone must be awarded the merit of having successfully carried out the formation and working of the society, and to him must all feel indebted for the present meeting. If the society had not been in existence, it is very doubtful if this dinner had taken place. (Great applause.)

Mr. Armatage, in reply, said:—If there were some circumstances of greater embarrassment than others, they are those in which one is called upon to make a response to such flattering sentiments which had fallen from the respected President, in recognition of his services as Hon. Sec. of the Society. True, he had been conspicuous in its formation; for he felt the establishment of such a society would fulfil an important omission in the profession, and perform a means of public good. He was desirous of seeing his brethren upon a different footing, consistent with education, standing, and the spread of knowledge. Then he had met with obstacles in his progress, and the President had presented himself as one at the first interview. He was determined, however, not to allow the opinions even of Mr. Hunting or any one else to weigh against the necessity of doing good, for he felt like Napoleon, and would not believe in failures. “Impossible,” cried that great general, “I have no such word in *my* dictionary.”

He felt also there was a great deal to be accomplished by promptitude of action. When Sir Colin Campbell was asked when he could set out to take charge of the Indian army? he replied, “to-morrow.” This was an earnest of his future success; and to these principles alone did he attribute the success of the society. Dawdling will not do in such matters; if you cannot be received at the front door, you must attack your man through the back; for determination of purpose must not be overlooked.

The only thing which gives him (Mr. Armatage) annoyance, is the great neglect and apathy which exists among his professional friends, especially towards a letter. Many of the members in various parts of Durham and Northumberland, &c., to whom he had written half a dozen letters each, had not yet deigned a reply, a fact which did not weigh much in favour of their general business habits. If they are so slow at letter writing, their means of obtaining further improvement would probably be as limited. While he felt the proudest satisfaction in the numerical strength of the meeting, he was conscious that some degree of sluggishness existed among the members of the neighbouring districts. When the various towns adjoining are considered, and the number of practitioners who are not present, it must be apparent that a defect exists in the state of things which should

characterise the general body. When such towns as Durham, Bishop-Auckland, Stockton-on-Tees, Hartlepool, &c., &c., are not represented on this important occasion, and we have gentlemen present who have thought it no trouble, nor grudged the expense of coming 200 miles and more, we cannot say that the pluck of the veterinary community lies in these northern regions so much as it should.

Mr. Armatage thanked the President and gentlemen present for the great honour conferred upon him, and assured the Society that his utmost endeavours for its promotion and welfare should always be exercised. It was a labour of love, and he felt delighted to be of service to his profession. (Hear, hear, and cheers.)

Mr. E. C. Dray next proposed, in a very neat speech, "The Ladies!" quoting the lines of Sir Walter Scott:—

" Oh, woman! in our hours of ease,
Uncertain, coy, and ill to please;
And variable as the shade,
By the light quivering aspen made:
When pain and anguish wring the brow,
A ministering angel thou."

Mr. Henry Hunter briefly replied.

And thus ended one of the most interesting and agreeable gatherings of the veterinary profession that ever was known.

The North of England Veterinary Medical Association has instituted a precedent which the profession will do well to follow. When practicable, and under similar available circumstances, it must give a great impetus to our social and moral standing if the members are called together for the purpose of taking up subjects of interest connected with their general welfare as a profession. Such societies have great influence, and by their united exertions they may accomplish much for general good.

PARLIAMENT OF VICTORIA.

LEGISLATIVE ASSEMBLY.

THURSDAY, 19TH MAY.

The *Speaker* took the chair at half-past four o'clock.

NOTICES OF MOTION.

Mr. L. L. Smith gave notice that on Tuesday next he would ask the hon. the Chief Secretary if it was a fact that Mr. Miscamble had sent in his account for £1500 for two years' unpaid services as pleuro-pneumonia commissioner; whether the Government had refused to acknowledge the same; and, if such was not the case, would the Government at once liquidate the amount; and, if not, why not?

ARMY APPOINTMENTS.

WAR OFFICE, PALL MALL, *Aug 5, 1864.*

11th Hussars.—Veterinary-Surgeon David Paley, from the Royal Artillery, to be Veterinary-Surgeon, *vice* Ferris, who exchanges.

Royal Artillery.—Veterinary-Surgeon John Ferris, from the 11th Hussars, to be Veterinary-Surgeon, *vice* Paley.

MISCELLANEA.

SEPARATION OF SMALL QUANTITIES OF LIME AND
MAGNESIA.

THE method of separating lime and magnesia by means of oxalate of ammonia does not succeed when the lime present in the mixture is a very small amount. In such a case the lime is either not precipitated at all or but very incompletely. Free ammonia assists in hindering the precipitation, and when it has evaporated crystals are obtained, which consist of oxalate of lime with oxalate of magnesia, and the liquid still contains lime. A better result, Scheerer says, is obtained by converting the alkaline earths into neutral sulphates, and adding alcohol to the aqueous solution until a persistent cloudiness is produced. After some hours all the sulphate of lime is deposited. When too much alcohol has been used, some of the sulphate of magnesia is deposited as well; it is sufficient then to redissolve the sulphates in water and precipitate a second time with alcohol; or the lime may now be thrown down by the oxalate of ammonia. The magnesia not being in excess, no longer hinders the precipitation.

OBITUARY.

DIED recently, Thomas Burton, M.R.C.V.S. London. His diploma bears date, July 7th, 1843.

Also John Brown, M.R.C.V.S., Warwick. His diploma bears date May 31, 1843.

ERRATA IN NO. 440.

Page 503, line 14 from the bottom, *for* "lacerated," *read* "lacerable."

„ 534, *for* "Mr. Wm. Cattell," *read* "Mr. Wm. Chattell;" *for* "Wickworth," *read* "Wirksworth."

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Communications and Cases.

A REMARKABLE CASE OF OSSIFICATION OF
MUSCLE.

By Professor VARNELL, Royal Veterinary College.

THE pages of the *Veterinarian* are already indebted to Mr. Clement Stephenson, M.R.C.V.S., of Newcastle-on-Tyne, for some very valuable contributions; but the morbid specimen to which the following observations refer is certainly the most remarkable of its kind that has ever come under my notice. It consists, as will be seen by a perusal of the subjoined letter, of the *flexor brachii*, the upper part of the *radius*, and a portion of the *ulna*, the former being completely transformed into osseous tissue, a circumstance, as far as I am aware, of very rare occurrence. Mr. Stephenson writes as follows:

NEWCASTLE-ON-TYNE; *Aug.* 19, 1864.

DEAR SIR,—I have just sent you by rail the pathological specimen which I showed you on your recent visit to Newcastle. I am sorry to say I cannot give you the history of the animal from which it was taken. It is about six months since that a horse-slaughterer in this town brought me what he called a “double bone;” but which I found to be the humerus, radius, and the flexor brachii muscle, the muscular fibre of which had been completely removed and replaced by bone. A space, however, existed between the posterior surface of the flexor and the anterior surface of the humerus, and also a free motion to the shoulder- and elbow-joints. The

superior attachment was not much altered, but its inferior was ossified and fixed to the radius. Half an inch from this part was a short tendinous portion, which served as a false joint, and allowed the radius to be flexed on the humerus.

I was informed that the animal, an old worn-out cart-horse, was brought to be destroyed. No lameness was observed to be present by the slaughterman, nor was anything said about the animal being lame; and it was only upon taking the flesh off the bones that he observed something that he had never seen before.

This is all I know of the case. I had jotted down a few remarks about it, and other allied cases which I have met with, but I withhold them, so as to allow you to make such comments on the case as you may deem proper.

Yours truly,

CLEMENT STEPHENSON.

To PROFESSOR VARNELL.

In my introductory remarks I have stated that ossification of muscle is very unusual; such a change, however, does occasionally occur; but, as far as my experience goes, it more frequently takes place in the involuntary muscles than in those that are under the control of the will. Why it should be so, I will not now venture an opinion. In the museum of the Royal Veterinary College, there are numerous specimens of this peculiar transformation of involuntary muscles. There are several cases in which the walls of the auricle of the heart of the horse are so affected, wholly or partially; and another very fine specimen of the kind has lately been added to the collection, but there is not one in which this change of tissue has taken place in a voluntary muscle. We are therefore the more indebted to Mr. Stephenson for a case wherewith to enrich the records of pathological anatomy, and also the shelves of the museum of the College.

So completely had this muscle undergone change in structure, that only a small portion of the upper tendon retained its normal character; the rest of it, including the lower tendon, being completely transformed into osseous tissue, although possessing as near as possible its original form. Mr. Stephenson states that the horse had been used for slow work, and was not observed to have been actually lame. This I can conceive to be true if the horse was made to travel no faster than a walk. The upper tendon was nearly normal, and its under surface played over the trochlea of the humerus without any impediment to its motion. The ossified muscle, although apparently one continuous bone, was nevertheless,

on a close investigation, found to be composed of three segments closely connected together by fibrous tissue, thus forming several pseudo joints where motion could take place during progression. Had this not been the case, the movements of the limb must have been most defective, even in the walk.

The practical anatomist is well aware that the muscle in question contains only a small amount of contractile or muscular tissue as compared with any other muscle in the body; its bulk, consequently, consists chiefly of white fibrous tissue. Both in structure and function the flexor brachii therefore resembles a ligament, and ligaments are well known to the pathologist to be particularly prone to take on the ossifying process; indeed, this is the case with all organs composed of white fibrous tissue, and especially those that are exposed to injury or over-tension, which disposition is much greater in old animals than in young ones.

This case is well worth recording, as it, above all others that I have met with of this class of disease, beautifully illustrates the morbid changes that often take place in the tissues composing the animal body.

I regret Mr. Stephenson did not give the cases he alludes to of a similar nature to the above, as I have no doubt but they would have been interesting. On some future occasion I hope to be favoured with them.

LARGE ABDOMINAL TUMOUR AND RUPTURE OF THE COLON.

By R. S. HARDY, M.R.C.V.S., Sleaford.

DEAR SIR,—I have forwarded to you a large tumour taken from a gray horse, four years old, that was found dead on the 10th ult. The particulars of the case are as follows. The animal was the property of H. Bissell, Esq., surgeon, of this town.

My attention was first called to the horse on the 5th of July. On my arrival I found him showing symptoms of abdominal pain, frequently lying down, rolling on his back, turning his head to the left side and pawing. Pulse 70 and weak; respiration increased; visible mucous membranes injected; ears and extremities cold; no action of the bowels, he having passed no fæces since the day previous. Upon inquiry I found that he had been living upon green food up to within

three days of being thus attacked, when dry food was substituted. Considering the case to be one of constipation of the bowels, caused by the sudden change of food, I administered purgatives, followed by sedatives, and applied fomentations to the abdomen, threw up enemata, and had him well clothed, and the legs bandaged. He was then placed in a loose box, with a pail of gruel by him, and quietude enjoined.

6th.—My patient is much worse. Pulse 90; breathing accelerated; membranes injected; no action of the bowels; violent abdominal pain. He is frequently pawing, lying down, rolling upon his back, and continually turning his head to the left side. I repeated the medicine, and ordered enemata every three hours. In the evening he was easier, but still in pain. Gave instructions for the enemata to be continued.

7th.—A great improvement has taken place. All the symptoms are more favorable, and the bowels are acting nicely. The horse has drunk a little gruel, and stands in his natural position.

Up to the 11th he continued to improve, when I administered tonic agents, and ordered soft diet, such as mashes, &c.

On the 16th my attention was again called to him, when I found a recurrence of the symptoms, which were precisely the same as before existed, with the exception of the abdominal pain being more acute and tympanitis being present. He still kept his head to the left side, and sometimes he would stand for ten or fifteen minutes perfectly quiet, and then suddenly throw himself down in violent pain. I adopted the same treatment as before.

On the 17th the patient was much worse, and I then gave it as my opinion that some lesion existed, the precise nature of which it was difficult to determine, but I thought it might be either a tumour or a calculus, and that there was very little hope of recovery.

18th.—Animal better; all the symptoms more favorable, the bowels responding to the action of the medicine. Gave tonic agents up to the 24th, and ordered him to be kept entirely upon soft diet.

On the 30th my patient had another attack, though not so severe as the last. The treatment adopted was the same as before, and in the course of two or three days the bowels were excited into action, and the animal seemed to be better.

On August the 4th and 8th he had two more attacks. The treatment resorted to again relieved him.

On the 10th, the owner proposed turning him out, and on the morning of the 11th he was found dead in the field.

I may add that three weeks previously to the first attack I fired him on both hocks. He was then living on green food, was slightly relaxed in his bowels, and rather reduced in condition.

With much interest I proceeded to make a *post-mortem* examination, as I was anxious to learn the nature of the disease and cause of the poor animal's death. Upon opening the abdominal cavity an extensive rupture of the colon presented itself, through which a large quantity of fæces had passed into the cavity. Where the rupture had taken place the coats of the intestine were very much ulcerated and easily broken down by the finger. The other portions of the intestines, and also the stomach, presented no marked abnormal change. The tumour, weighing seventy pounds, was situated principally in the left hypochondriac region. It was attached closely to the colon, and slightly to the ileum.

The animal had been in Mr. Bissell's possession eighteen months, was regularly worked and always appeared to be healthy. I shall be happy to have your remarks as to the nature and cause of the tumour, also the time you suppose it would require for its formation.

I remain,
Yours respectfully.

To PROFESSOR VARNELL.

REMARKS ON THE ABOVE BY PROFESSOR VARNELL.

The tumour referred to in the above communication was globular in form and slightly nodulated on its surface. From its great size it must not only have occupied a large space in the abdominal cavity, but also have mechanically interfered with the function of the viscera. It is very seldom that we meet with so large a specimen of the kind.

In attempting to diagnose cases of this description we labour under great difficulties; in fact, it is often not until we have had the patient some few days under treatment that we are led to suspect the existence of an abdominal tumour, and even then its precise situation is doubtful, and its nature even more so. This difficulty Mr. Hardy no doubt experienced; nevertheless, on the 17th day of July, twelve days after he was first called in to see his patient, he gave it as his opinion that a tumour existed in the abdomen, or a calculus in some part of the intestines, which was the probable cause of the animal's illness, and that there was very little hope of recovery. Such was Mr. Hardy's *prognosis*, based upon the best *diagnosis* he could make; and under the

circumstances which then existed, the most experienced member of our profession would scarcely have ventured to have given a more definite opinion. The human surgeon has great advantage over us in diagnosing such cases. He can with great facility place his patient in a position the most convenient for the purpose of manipulating the abdominal walls, and of judging of any deviation from their natural form when in such a position. If, however, we do accomplish this at all, it is always far from being satisfactory. In the first place, the uncontrollable nature of our patient, and secondly, the usually thick parietes of this cavity, render a delicate manipulation impossible. Still, if the symptoms are such as to suggest the existence of an abdominal tumour, these means may be resorted to so as to assist us in diagnosing the case; and should it happen that the walls of the cavity are moderately thin, which they will be if the animal is much emaciated and the tumour large, a tolerably correct opinion may be formed. Percussion will also materially assist us; but, as we lose the aid of the organs of vision, we can only judge of the character of these growths by learning the history of the case, and even this may shed a doubtful light upon it. I am not attempting a dissertation on abdominal tumours, or the mode of diagnosing their presence and nature; nevertheless, I venture to make this remark—based on my own experience—that there are very few instances in which their positive existence can be determined with that certainty which would warrant the practitioner in advising that the horse be destroyed. He will doubtlessly take a far safer course by continuing to treat the case until the general symptoms are such that he is persuaded it is a hopeless one. Such is the course which Mr. Hardy seems to have adopted in this instance, and to my mind it was a very proper one.

I have before stated that the tumour was globular in form. Its weight is given by Mr. Hardy, and its bulk, therefore, can be readily imagined, particularly by those who are familiar with morbid growths of this description. In colour it was of a grayish-pink, mottled, here and there, by ecchymosed spots; and, when pressed upon, it was found to be moderately firm in consistence. In order to examine its interior I made a section through it in two different directions, and upon looking to the cut surfaces I found them to vary both in colour and density. The greater part of each exposed surface was of a pinkish-straw colour, darkened here and there by effused blood, or engorged blood-vessels. Some places near to the outer margin of each section were much lighter in colour,

and also firmer to the feel, but the dark-coloured parts were soft, and easily broken down by pressure. There were also several cysts, which were chiefly situated near the root of the tumour; some of these were larger than others. They all contained a glairy kind of fluid, which in some instances was of a deep-straw colour, and in others of a much darker colour. The outline of enlarged mesenteric lymphatic glands could be distinctly traced, the centre of each being dark in colour and easily broken down, while their margins presented the same aspect as the greater part of the tumour. The spaces between these bodies, the blood-vessels, and other organs, were filled up by effused material which had become partially converted into structure. Blood-vessels, lymphatics, and nerves, could without difficulty be traced from the root of the tumour throughout the greater part of its substance. The large arteries and veins were not visibly diseased, but the smaller vessels, with their capillaries, were in many places enlarged and engorged with blood.

Such was the general character of the tumour. It must have been situated at the root of the anterior mesenteric artery, which, with its numerous branches, it surrounded, and, by these going from that vessel direct to the colon, it became firmly attached, as Mr. Hardy describes it to have been. We can thus very easily understand how the tumour mechanically interfered with the function of that intestine, by arresting the passage of the ingesta.

The symptoms described by Mr. Hardy correspond with this idea, and I further believe that the rupture of the colon with the consequent death of the horse was due to this mechanical interference, and not wholly to a weakened condition of the coats of the intestine from ulceration.

I have thus briefly described the appearance of the tumour as far as the unaided eye enabled me to do. I have not investigated any part of it microscopically, although it would have been extremely interesting as well as instructive to have done so; but, judging from the physical appearance of the whole mass, and the history connected with the case, I am inclined to think it is scrofulous in its nature, and that it did not depend, as is sometimes the case, upon entozoa located in the mesenteric artery and its divisions.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor BROWN, M.R.C.V.S., London.

(Continued from p. 514.)

SOUNDS PRODUCED DURING RESPIRATION, CONSEQUENT UPON HABIT, OR UNDER THE INFLUENCE OF THE ANIMAL'S WILL.

OUR last observations referred to those peculiar cases of unsoundness in which the sounds emitted by the animal during respiration, were either occasional, or otherwise required some peculiar movements to be made before they could be elicited.

In one instance it will be remembered, the horse gave evidence of being a "roarer," only after being ridden over a fence; and in the other case, the very decided "whistler" or "roarer" of one day was sound the next, unsound again a few days afterwards, and so on repeatedly.

However remarkable and obscure these cases may be deemed, and whatever explanation may be given of the circumstances, there was nothing to lead to the belief that the noise produced resulted from the exercise of the horse's will in either instance; nor could habit be considered to have anything to do with the peculiarities evinced by both the animals. Frequently, however, certain sounds are produced during respiration, of such a nature, and attended with such circumstances as to lead to the impression that they are voluntarily made, or at least are the result of habit.

First, the noise known as "fluttering" is most palpably of this kind. The horse addicted to the habit is usually, indeed invariably, of high courage, in horse language "hot," and in his trot or canter seems to manifest his impatience by blowing the air through his nostrils in such a manner, that the false-nostrils are caused to vibrate rapidly, and a very curious fluttering and blowing sound results, precisely similar to what may be produced by blowing through the mouth and causing the lips to vibrate quickly at the same time; such a movement will soon become habitual, and as a proof we may advert to what doubtless most persons have noticed, viz. a tendency among bipeds to emit peculiar sounds when their attention happens to be concentrated on some

work in hand. The strapper for instance, during the time he is dressing his horse, or cleaning his own boots, gives utterance to the habitual hissing, occasionally varied by a modification of sound very nearly allied to "fluttering," the man all the time being evidently unconscious that he is doing anything peculiar.

Horses that are addicted to the habit of "fluttering" are occasionally in dispute. The noise is sometimes so excessively loud as to excite attention to an inconvenient degree, and suspicion of unsoundness being aroused, the veterinary surgeon is called upon to decide.

In most cases there will be no difficulty in forming an opinion of the nature and cause of the alledged defect. First, the sound is very characteristic, and quite unlike roaring or whistling, or other sound consequent upon disease of the air passages. Secondly, the "false nostrils" may be *seen* to vibrate while the noise continues, and to become quiet as soon as it ceases. Thirdly, the sound is occasionally interrupted while the animal continues to maintain the same speed, or even to increase it, rendering it evident that the will has some influence over the production of the noise, which certainly would not be the case were it the result of disease.

An extended examination would show that pace has little or nothing to do with the matter. In his quiet humour the horse may be trotted, cantered, or galloped without any occurrence of the sound, while at other times when excited he will emit it most energetically in his walk, or rather that uneasy jolting pace which is his substitute for a walk under such circumstances.

Unsoundness cannot of course be alledged against an animal addicted to this habit; it is certainly an annoying circumstance to the owner, and to a nervous man it would be intolerable, but it does not interfere with the respiratory capabilities, it in no way diminishes the horse's usefulness, and is not the result of disease, therefore, while it might be deemed by the examiner of sufficient importance to justify an allusion to its existence, and might probably disqualify the animal in the mind of the intending purchaser, it could not be construed into an unsoundness.

Sounds of a more equivocal character, whose origin is not so apparent, are often produced by the horse under such circumstances as to leave no room for doubting their voluntary character. A very peculiar instance happened a few years back. A valuable hunter was sold, and soon afterwards returned as a roarer; no professional opinion had been sought, because it was considered that such was unnecessary

on account of the very decided character of the noise made by the animal in the field. The seller, who had himself ridden the horse for some time, having formed a different opinion about the matter, sent the animal to be examined. On submitting him to the usual test, a very loud, roaring sound was emitted during a canter across a ploughed field, it presently, however, ceased, the animal still continuing the pace; then again it occurred, and again ceased when the horse was compelled to gallop.

Considerable time was devoted to the examination on more than one occasion, in order to ascertain if possible, whether the sound was in any way connected with a diseased condition of the respiratory organs. And the result was the establishment of a conviction of the animal's soundness.

The noise emitted could not be distinguished from that produced by a very bad "roarer;" but there was this very important difference in the circumstances under which it occurred; viz. it was entirely independent of pace. Sometimes the horse would gallop half through a long run without giving utterance to the least noise; then again during a canter or quiet trot, the sound would suddenly become audible; and on several occasions it was produced in the course of a walk; but usually the animal would start off in a canter, roaring loudly for a few seconds, then breathe quite calmly for some time, and again indulge in a repetition of the noise, and again discontinue it according to his fancy; although it happened occasionally in his adverse mood he would sustain the character of an inveterate "roarer" during the whole time he was in the field, whether walking, trotting, or galloping.

In this very remarkable case the opinion sent back with the animal, was to the effect that the "roaring" was a voluntary act, unconnected with disease of the respiratory organs, and that consequently the horse was not unsound.

It is worthy of remark, that all voluntary sounds seem to be produced during the expiration, just as all vocal sounds are produced naturally, while on the other hand, abnormal sounds invariably occur during inspiration, not necessarily being confined to that act, as they may sometimes be distinguished during expiration also; but the sounds voluntarily emitted have always been audible, so far as we have observe them, only during expiration.

Many varieties of sounds belonging to the voluntary class, will be noticed in different animals; some evidently are produced by movements of the nostrils, others seem to arise from some action of the velum palati; and many, doubtless,

are consequent upon laryngeal action; but all of them are distinguished by certain general characters, or produced under such conditions that they are not likely, excepting from a very superficial examination, to be confounded with abnormal noises.

In obscure cases the patience of the examiner will often be severely taxed, the more so as the animals in question seem to possess the inconvenient faculty of knowing when they are particularly required to make the sounds, and steadily refusing to utter them accordingly. Several examinations may be necessary before the noise complained of can be elicited at all. The matter is meanwhile often rendered more unpleasant by the fact of the owner not comprehending that his horse may behave differently under different circumstances, and being, therefore, dreadfully disgusted that the professional examiner fails to detect what he had previously discovered without difficulty. All these disagreeables, and many more, are incidental to that most unthankful and unsatisfactory business of the veterinary surgeon, the examination of horses as to soundness; but as "Argus" very justly says, "if people will submit their horses to our examination, and purchasers will not buy without it, what can we do?"

(To be continued.)

OBSERVATIONS ON "SOUNDNESS."

By R. H. DYER, M.R.C.V.S., Waterford.

(Continued from p. 455.)

Most of the horses brought to us for inspection are the property of the breeder, who is, in nine cases out of ten, a farmer. When we bear this fact in mind, we can readily understand how it is so few feet are in a healthy state, so far as regards the outer or horny parts.

The wall is found in one instance perfectly smooth; in another, roughened and full of ridges; in which latter case some agency has been in operation to produce them. Counter irritation, wet, soft, and boggy places, will assist in promoting the growth of horn, and we are all aware how common it is to turn out a horse into some soft land when there is want of development in the horny structures of the feet. This, then, as well as some other things, will produce the kind of hoof

we so often meet with in our examinations. Formerly it was considered a suspicious affair when rings were observed upon the wall of the foot. It was supposed, the subject of it had been recently recovered from an attack of *laminitis*. At the present day, I think, we have become wiser, and have almost, if not entirely, dropped the suspicion. This has, however, given place in some minds to another and graver affair. It has been said that horses found to have rings upon the hoof are suffering from navicular-thritis, or some other severe affection, and that laminitis has no existence at all, except, as the result or consequence of some other complaint. If this be true, there has been a large amount of *malpractice* during the last half century. Doubtless this is to be found in some cases, indeed, we know it to be so. There is one particular form of foot I frequently see at the breeders' homesteads; the upper two thirds of the hoof apparently well formed and well developed, and the lower third, and sometimes more, turned upwards from the ground surface. I am now referring to feet without shoes, and more particularly to unshod feet. A little management would prevent all this. We occasionally find breeders' colts so far neglected up to two years old, that the growth of horn on one side has so outgrown the other that malformation of limb is the consequence, and much time, trouble, and expense, are necessary before the parts interfered with have assumed their perfect form; and in some cases the feet never regain their original shape.

Thrush or Frush.

By some writers the latter term is employed for this disease, which is of frequent occurrence, and as there is such a diversity of opinions with reference thereto, it may be advisable to dwell a little upon the consideration of the nature of the disease and its tendencies. Markham, and most of the ancient writers, have named the disease "Frush." Percivall has also given to it the same appellation, and moreover, he has advanced an authority for using that term in preference to the word "Thrush."

I have before had occasion to remark, it matters but little as to terms employed by us so long as we understand each other. At the same time, it is well to make a proper application of all terms.

Smart gives "Frush" as the English of the German "Frosch;" a sort of tender horn that grows in the middle of the sole of a horse's foot; the same as *frog*. 2nd. A discharge of a fetid or ichorous matter from the frog of a

horse's foot; also called *thrush*. Good gives the following explanation of the word "*Thrush*;" "An affection of the inflammatory and suppurating kind in the feet of the horse, and some other animals." Oliphant writes as follows; "Thrush is the inflammation of the lower surface of the inner or sensible frog, and the secretion or throwing out of *pus*, is almost invariably accompanied by a slight degree of tenderness of the frog itself, or of the heel a little above it, and if neglected, leading to diminution of the substance of the frog, and separation of the horn from the parts beneath, and the production of fungus and canker, and ultimately a diseased state of the foot, destructive of the present, and dangerous to the future usefulness of the horse. *A thrush is an unsoundness.*" In page 430, Percivall's 'Hippopathology,' article "Frush," that author states, "Everybody's horse has a frush, and yet nobody appears to be concerned about the matter. Horses, in general, seem to go as well with frushes as without them; hence the reason of so little or no notice being taken of their presence; added to which, the circumstance affords a pretty convincing proof that the judge in a court of law, who, in former times, pronounced frush to constitute unsoundness, erred most egregiously in his *fiat justitia.*" Again, in same page, "A Frush is not to be accounted unsoundness unless it produce lameness, which it rarely does. . . . Were a frush to be viewed as unsoundness, there would be found perhaps more unsound than sound horses in the country; in fact, according to such a notion, hardly anybody would possess a sound horse."

I think, then, we may make use of the term *frush* in reference to the diseased state of the horse's frog which has heretofore in vulgar parlance borne the name of thrush. One good and valid reason for employing the term frush will be found in the fact of the ignorant not being misled to the belief that the bird of that name, *thrush*, could in any way be understood to be alluded to as the source from whence the term was derived.

The opinions advanced in Mr. Percivall's book are those I am anxious to guard against. He distinctly states that frush must *not* be regarded as unsoundness.

Such an opinion as this becomes very dangerous, and is likely to lead to disputes. If one disease is unsoundness, and another must not be considered so; how are we, or the public to reconcile such opinions? Indeed, it is difficult under any circumstances to know how to receive them. It is just this sort of thing which causes the opinions of the members of our profession to be questioned. There are, I

believe, about 1500 members of the Royal College of Veterinary Surgeons ; each and every one of whom, according to Mr. Percivall's theory, has a right to act in the capacity of a judge. Now suppose all the attorneys and barristers in Great Britain had the same privilege, that is to say of giving their opinions as legal men, and those opinions not to be questioned ; I am inclined to think the law, and those who put their trust in lawyers, would be thrown into a fix very frequently. The members of the legal profession are certainly far in advance of us ; the legislature has provided them with laws by which they must be guided, although various are the views taken by them as to the translation or interpretation of some of them ; still, they can easily be understood as a general rule. We have no code of laws to guide us in our decisions ; every examiner as to soundness has an opportunity of offering an opinion in every case he is called upon to look at. If our profession possessed a set of laws as to what constituted soundness and unsoundness, it would to a man be relieved of many a difficulty.

Mr. Percivall declares positively that frush is not an unsoundness, except under certain circumstances. Mr. Oliphant, on the other hand, makes no distinction whatsoever ; but places the word unsoundness unqualifiedly against the name of the disease. This state of things is perplexing in the extreme, and must sooner or later be amended.

I cannot fix the date when Mr. Percivall penned his remarks upon this disease. Were he now living, I have no doubt he would materially alter the opinion expressed by him in the page above alluded to ; I mean as to the number of unsound animals to be met with in the present age. It is, I believe, very generally remarked that the greater number of horses in existence now are unsound in some way or another. This will refer more particularly to legal soundness. If this be true, it will be obvious how necessary it is for us to be able to classify our definitions as to soundness ; and by so doing we shall in all probability remove much that is objectionable. It is no uncommon remark to hear that Mr. So-and-so never takes notice of such trifles. The courts of law afford much information in these matters, and it would benefit all those members of our profession who are in active practice if they would study these recorded cases, and write their views with regard to the fiat of the judge. It is by knowing the opinions of the multitude that the few are enabled to form properly digested codes of laws. There are few acts of parliament but will, and do admit of alteration and improvement, and so will it be in regard to the law as to soundness, unless the profession

agree to constitute, and the legislature to accept the two modes of examination referred to in some of these papers, which, if adopted, would be the means of preventing much of the unpleasantness to which many persons are now liable. One veterinary surgeon will pass a horse as a sound one with frushes in all his four feet, a second declares the horse unsound. Again, a man exercising his calling as a member of the profession will state a horse to be sound with ossified lateral cartilages, and so on. These things should not be, it is high time a change was effected in some way; and, until some decided step is taken, we shall not—as a profession—be found to keep pace with the times.

(To be continued.)

PROVINCIAL VETERINARY MEDICAL ASSOCIATIONS.

Letter from J. MITCHELL, M.R.C.V.S., Leeds.

GENTLEMEN,—I observe in your number for the present month (September) that Mr. Dray, in a post-prandial speech at Newcastle, made use of words to the following effect:—“He knew a veterinary surgeon at the present time, in one of the largest towns in Yorkshire, who is not a member of a veterinary medical association.” As I do not belong to any existing veterinary medical association, and as probably the remarks were intended to apply to me, may I beg of you space in your forthcoming number to explain how it is that I am in such a position. It is well known to the members of the Yorkshire Veterinary Medical Society, and to none better than to its president, that I objected *ab initio*, and do still object, to its being constituted as it is. I contended that gentlemen who had not conformed to the requirements of the Charter of Incorporation—which was obtained at considerable expenditure of time and money, and was looked upon as the first step towards obtaining for the qualified veterinary surgeon his proper status in society, but which I fear is not appreciated as it should be—were not, and ought not to be admitted into any veterinary medical society upon an equality with those who had so conformed. Therefore I ceased to take any part in the so-called preliminary meeting the moment the proposition “admitting as members veterinary surgeons holding the diploma of *any* recognised

veterinary college" was carried, and I declined membership solely on that account.

Anxiety is expressed on all sides for the advancement of the veterinary profession; and as "a house divided against itself cannot stand," I do hope that veterinary surgeons, who have not already done so, will, so soon as may be, become members of the corporate body; for, as the leader in the *Veterinarian* expresses it, "their abilities having been tested, why should they not become members of the Royal College of Veterinary Surgeons?" Why not? indeed, say I.

I have felt it my duty to make the above remarks, and I assure you that no one is more anxious for the well-being and the proper position of the veterinary profession than,

Gentlemen,

Yours respectfully.

To the Editors of 'The Veterinarian.'

LAMINITIS AND NAVICULAR DISEASE.

Reply to Mr. GREAVES'S Letter on "Laminitis and Navicular Disease," in the last number of the Veterinarian, p. 573.

By Mr. W. WILLIAMS, V.S., Bradford.

MY DEAR SIR,—I think that the morbid condition of the feet termed laminitis may with safety, and with advantage to the illustration of its pathology, be studied under two distinct heads, viz., the *acute*, and that which is developed by a slower process, or is the result of an acute attack, and called *chronic*.

Acute laminitis may occur to an animal with almost any form of foot. I do not think that the shape has much to do with it. It arises from some well-defined and understood cause. Speaking from my own experience, I have seen it result generally from over-exertion, and from what is called metastasis. I maintain that there is no hereditary tendency to this form; in fact, I discuss it apart from the question of hereditary taint in the economy. Here we find that the soft parts only are affected, the morbid action very often passing off without the bony structure being at all involved. Can you not bring to your recollection many a case that threatened to be a most severe one of laminitis, after a few hours of suffering pass off, and the animal become quite well again? This

is congestion of the feet—a state that I often meet with associated with an unhealthy condition of mucous membrane, most generally that of the intestinal canal. Are we to think, for a moment, that what is plainly the result of accidental error, perhaps in the feeding, is due to something undefined and obscure in its nature, as you describe in the first part of your letter? You know my views upon what is termed metastasis—that such an occurrence as a translation or transference of *this* disease from one part to another does not take place. In my opinion it is simply an extension of diseased action; that the skin and mucous membrane, being continuous and analogous, and the laminæ of the feet are folds of the derma, and these folds participate in the general irritation of the mucous membrane through the medium of the skin, and being confined within the horny box of the feet, this confinement prevents swelling, and pain, most violent and acute, is the result. Let the mucous membrane primarily affected be restored to its healthy state, and you sometimes have a removal of the morbid action from the feet; but from the injury done to the laminæ and sensitive sole, by the pressure of the horn, this does not always follow. Congestion of the feet arising from this cause must be treated as an effect of a cause existing in the mucous membrane; that from severe over-exertion, or some abuse of the foot itself in shoeing, as a disease *sui generis*. If congestion does not pass off it runs on to inflammation, and this characterised by its true character, that of exudation of liquor sanguinis, thrown out from the surface of the sensitive laminæ and sensitive sole, giving rise to that form of foot termed pumice. You will generally find this to occur in about three days from the attack, and by carefully cutting down through the sole this exudation will escape. It will be found most abundantly at the toe, which is due to the greater vascularity of this part, and to gravitation. In consequence, the sensitive and insensitive laminæ are separated from each other, and the os pedis is pressed downwards and backwards, and the crust upwards and forwards, causing the concave appearance of the front part of the wall; you have a displacement of the pedal bone, an altered condition of parts leading to important and grave pathological alterations in the osseous structure, and true ostitis now sets in. Let me be understood: whatever changes take place in the bony structure is a result of disease of the soft parts, resulting in exudation, in forcible displacement of the os pedis, by this exudation separating it from its attachments with the horny laminæ, particularly at the toe; pressure

upon it when the foot is on the ground from this change of situation, and absorption of its most prominent inferior margins; nature evidently removing what is a cause of violent pain.

We have now the same condition of parts resulting from acute laminitis, or more accurately peditis, as we find to be present in the second form, viz., chronic laminitis, or peditis, or that resulting from a gradual alteration of the feet without at first severe lameness. The feet become gradually flat-soled, slightly convex, increase of convexity, and appearance of decided and generally incurable lameness, or, as you describe in your excellent letter, "this tendency has been gradually assuming a condition more and more favorable to lameness for some time before actual lameness has shown itself." I agree with you in this matter of everyday observation, but when you go on and state "that the economy and condition of the bony structures have been undergoing a certain change, and that in the absence of any active inflammation, a sort of atrophy," I am at issue with you, and think you are not using a correct term when you call it *mollities ossium*. In order to arrive at correct ideas we must inquire what are the causes leading on to this state of parts, and what kind of animal is the most subject. The most prominent causes are, weakening of the hoof by undue paring, or by rasping of its wall; standing for a long time idle in the stable often is a cause of non-secretion of horn; thus the feet become weak, and do not afford sufficient support to the weight of the animal. As to what breed of horse is most liable, I must say that although I have found it in Welsh ponies that had never been worked, and in animals of all breeds, the heavy Lincolnshire dray-horse, with naturally broad flat feet, is most subject; but generally, in whatever kind of animal it has existed that I have observed, it is associated with a very obese condition; the horses have been loaded with fat. In the case of Welsh ponies, they were actually one mass of fat, and when this condition was taken away, the feet more or less regained their pristine form, and they became serviceable. Now, after careful observation, seeing this state generally present, and the absence of other causes, I can arrive at no other conclusion than that the alteration of the feet is simply due to the great weight they have to bear (there is another class of horse very liable, viz., the animal that has been bred for harness or saddle purposes, and has become too heavy for his breeding—here the feet often give way); this great weight, not, as you suppose, causing direct alteration of the bony structure, but a gradual

separation of the sensitive and horny laminae, a slight exudation filling up the spaces so caused, descent of the os pedis at the toe, flatness and convexity of the sole, lameness, inflammation of the bone, osteitis, absorption of the margins of the bone, and, as the disease advances, extension of the absorption over the whole plantar surface. That undue weight will cause this, is borne out by the fact that in cases where one foot or limb is violently injured, and the animal compelled to bear his weight upon the opposite foot; you have laminitis, more or less severe, often as a result. The bone now participating in the morbid action, we find that the cancellated tissue—and we have little else in the coffin-bone—undergoes a great change; the Haversian canals dilate or become opened up, and the result of this enlargement is the conversion of the contiguous canals into one cavity, hence the increased porous appearance of the os pedis in chronic laminitis, an appearance which you evidently think gives the disease the characteristics of mollities ossium. I maintain that this is not at all analogous to degeneration of organs from malnutrition, or from any undefined change within the bony tissue itself primarily, but simply through an alteration of the structure of the soft parts from the causes above described, viz., great weight of carcass, over-exertion, want of exercise, undue paring or rasping weakening the horny support of the animal; for in reality the horn and laminae are the true weight-supporters. The coffin-bone cannot bear any direct weight upon itself.

You state that the subject of laminitis is almost certain to be exempt from any tendency to formation of bone-spavin, sidebones, ringbones, splint, &c. I can only state that your experience and observations are different to mine, as I find it associated with all sorts of exostoses, and the specimens I have that show the most extraordinary changes in the os pedis through absorption, are combined with very large sidebones.

NAVICULAR DISEASE.

I think that the pathology of this lameness is easily understood. Professor Dick has taught, and still teaches, what I conceive is the simplest yet grandest solution of a problem that has puzzled many earnest and able inquirers. His teaching is indelibly impressed upon my mind, and had he done no more toward the advancement of veterinary surgical pathology than investigating this disease alone, the profession is under a heavy tribute of gratitude to him. He says,

and I unhesitatingly endorse his opinion, that navicular lameness is due solely to a strain of the flexor pedis as it passes over the navicular bone, and that all the changes of structure that follow are due simply to this lesion. You state that there is a congenital tendency in the majority of these cases. This is undeniably true, but I think that this tendency depends more upon conformation than upon any talent. It is the animal with upright pastern and strong stumpy lower articulations and foot. An upright pastern should be always looked upon with distrust in all horses required for speed, and this because, in a leg of this description, the flexor pedis forms a much more acute angle in its course from the pastern over the navicular bone to its insertion into the os pedis, than in a leg with sloping pastern; this acuteness of angle being the reason why it presses more violently in its upward movement on the navicular bone, as the foot is lifted off the ground, and hence its liability to strain or laceration of its fibres. I maintain that this may occur instantaneously, but sometimes distinct lameness does not become apparent until after repeated slight abrasion of the surface of the tendon. Inflammation of all the tissues forming the navicular capsule or bursa is the consequence, and now a train of processes are set up, leading on unfortunately to destruction of the integrity of parts. The lacerated ends of the tendinous fibres rub against the articular cartilage of the navicular bone, ulceration of the cartilage is the result, or the cartilage is merely rubbed off, and the articular laminae of the bone itself are exposed. Sometimes the progress of the disease is stopped at this stage by a deposit of bone being thrown out in its stead. This deposit is found to consist of small nodules of bone, varying in size from a pin's point to a millet seed, and sometimes larger. Although the animal is permanently lame, this lameness is not always excessive, and does not increase, if he be carefully used. I have proven this point to my own satisfaction by *post-mortem* examinations of cases that I had known for years before death. Supposing the disease advances, ulceration of the bone is found to exist: this morbid process goes on *within* the bone, from inflammation of its structure having been excited by injury from without; ulceration of the bone commences within its cancellated structure, and extends to the articular surface by removal from within of the hard outer covering of bone which closes the cancelli on the surface covered by cartilage. I maintain that you interpreted wrongly this morbid process when you state that ulceration of the bone takes place without active inflammation of the articulation. I agree with you when

you state that it is notorious that a horse shall show lameness for the first time a day or two after he has been new-shod, he having been standing idle some time previously, though no fault can in any way be attached to the shoeing. The very fact of the horse having been new-shod strengthens my argument that it is a strain, more particularly if he has been resting. During rest there is a want of sufficient secretion of synovia in the joints and bursæ; this dry condition renders the parts liable to give way to injuries from causes that are trivial in themselves. Now, how does the shoe produce this? Simply because a new shoe has a sharp edge to its ground surface at the toe, and this by increasing, however so little, the resistance to the action of the flexor muscles to raise the foot from the ground, this increase of resistance is fatal to the integrity of the flexor tendon at its weakest part, and this is where it passes over the navicular bone.

I remain, my dear sir,

Yours most sincerely,

W. WILLIAMS,

Hon. Sec. Yorkshire Veterinary Medical Society.

THOS. GREAVES, Esq.,

President of Lancashire Veterinary Medical Association, Manchester.

COMMUNICATION FROM B. CARTLEDGE,
M.R.C.V.S., SHEFFIELD.

MARKET STREET;
Sept. 23, 1864.

GENTLEMEN,—Mr. Henry Jackson, F.R.C.S., to whom I showed the ivory tumour, an account of which appeared in the *Veterinarian* for February last, p. 81, writes the enclosed. You are at liberty to make what use of it you think proper.

I may add that Mr. Jackson takes great interest in pathological specimens of all kinds, and he has frequently done me the pleasure of seeing cases of peculiarity with me.

I am, Gentlemen,

Very faithfully yours,

B. CARTLEDGE.

To the Editors of 'The Veterinarian.'

ST. JAMES'S ROW, SHEFFIELD ;
Sept. 22, 1864.

MY DEAR SIR,—I am very much obliged to you for the opportunity of examining the interesting specimen of the ivory tumour from the nostril of the horse, and also for the perusal of the *Veterinarian* in which there is an account of it.

I fully agree with the statement of its appearance as given by the editor, and also with Professor Tuson's analysis, which proves the true nature of it, but I cannot agree with the statement that "the tumour had originally been formed within the maxillary sinus." I object to this on the following grounds, which I submit to your judgment. There is very little enlargement of the cavity of the sinus, which would inevitably have taken place had a bony formation originated in it, and gone on increasing in size until it produced absorption of the wall, and then escaped into the nostril; and there would, in that case, have been some bony attachment in the sinus, of which there is no appearance either in the cavity or on the tumour itself. And, again, had such been the case, there would not have been the small bony peduncle by which the tumour *was* attached to the bony septum of the nose. It is not in the nature of these tumours to form bony attachments in any other part than the seat of their origin. They arise from one base, be that base broad or narrow, and have no tendency to form adhesion to any bone with which, in the progress of growth, they come in contact. Their course is eminently destructive, making everything yield by the process of absorption to their pressure, of which your specimen is a very good illustration.

In my opinion the tumour originated on the left side of the bony septum of the nose, as appears by the small and, indeed, only bony peduncle. In its growth it caused absorption, by pressure, of the wall of the maxillary sinus on the left side, and gradually also caused absorption of the alveolar processes of the two molars, the fangs of which have likewise been absorbed. Consequently its growth has been from *within to without*, and not, as stated in the *Veterinarian*, from *without to within*.

It is a matter of regret that the previous history of the case, during life, cannot be obtained.

I am, my dear Sir,

Yours very truly,

HENRY JACKSON, F.R.C.S.

B. CARTLEDGE, Esq., M.R.C.V.S.

CASE OF TYMPANITIS.

By H. CROFTS, M.R.C.V.S., Calcutta.

THE subject of the above disease was a gray Arab horse, a patient of mine, a few months since, when he was brought to me for treatment for bone spavin. This I had successfully treated, and was about to discharge the animal, when I was informed by the syce (groom) that, about 2 p.m. in the day, the horse's belly was much swollen, and likewise he was rolling on his back in the box. On proceeding there, I found the animal with his abdomen much distended, and griping pains accompanying it. I at once administered Liq. Ammon. fort. ζ ss, Sp. Ether. Nit. ζ ij, largely diluted with water, ordered friction to the abdomen, and soap and water enemas to be given, with gentle exercise. At 3 p.m. there was no abatement of the symptoms; I therefore repeated the draught, increasing the Liq. Ammon. to ζ j, and directed the friction to be repeated, and the enemas. At 4 p.m. the distension of the abdomen had increased, and the breathing become quickened, when I again repeated the draught and the other aids as before prescribed, and ordered the animal to be placed in his box. At 5 p.m. I found the horse lying on his left side, and unable to rise; the breathing was laboured, profuse perspiration covered the body, the pulse was small and quick, the extremities cold. The owner being at hand, I advised, as a last resource, to puncture the abdomen with the trocar (paracentesis abdominis), intimating to him the probable consequences. He readily consented, when I made an incision in the skin of the right flank, drawing it on one side, then forced in a trocar six inches long and seven sixteenths of an inch in diameter. A small quantity of ingesta immediately came through the canula, followed by a large volume of gas (C, O₂). The canula being withdrawn, the walls of the abdomen receded, the breathing was relieved, and the animal lay quiet for half an hour after the operation. I withheld all food and water for twenty-four hours, and then allowed mucilaginous drinks. Early in the morning following the operation, I applied a mustard cataplasm over the right flank, followed by a blister, and all went on well till the tenth day after, when I perceived a stiffness in the off hind leg to exist. Upon examination, I found an enlargement at the top of the scrotum, on the same side, which fluctuated. This I lanced, and gave exit to a large quantity of pus. In two days afterwards I found it necessary to remove the testicle, from

the descent of the pus into the scrotum. Six weeks from the time of the first operation I was enabled to discharge the animal quite recovered, and since then he has continued to work and do well.

The pus in the scrotum must have found its way from the wound inflicted in the abdominal muscles down the inguinal canal. There was no discharge from the wound externally.

I must confess that this is the only case of the kind in which I ventured to perform the operation. The flatulency appears to have been confined to the large intestines.

INFLAMMATION OF THE DUODENUM THE RESULT OF IMPACTMENT, ASSOCIATED WITH A FATTY TUMOUR.

By J. G. CATTRALL, M.R.C.V.S., London.

ON the 20th of June last, at 9 a.m., I was requested to see a brown pony, about thirteen hands high, and aged. He was the property of Mr. Benham, of Park Lane, Piccadilly. On my entering the box, the animal showed symptoms of tympanitis; and on making inquiry as to the food partaken of, I was informed by one of the men that the horse had had free access to some tares. This I considered sufficient to account for the above symptoms, and I accordingly gave him stimulants, consisting of

℞ Ammoniaë Carb., ℥j;
 Sp. Ether. Sulph., ℥ss;
 Aq. Ment. Pip., ℥viii; in haustus;

and threw up enemata of soap and water until the symptoms had abated, and the animal was apparently convalescent. I then left my patient, with strict injunctions that his diet should consist of bran mashes, with tepid water and hay.

June 21st, 11 a.m.—I saw my patient again, and he was apparently going on well, and continued to do so until the following day, when to my utter surprise a messenger came to inform me that the pony was again seized with gripes, at 11 a.m. On my arrival I found him to be very uneasy; his respiration much accelerated; the pulse numbering from 85 to 90 in the minute, much oppressed and somewhat wavering in character; the visible mucous membranes injected, with the exception of the Schneiderian membrane, on

which were petechial spots somewhat isolated and of a dark colour; the tongue and buccal membrane were dry; the extremities cold, the eyes assuming an amaurotic aspect; the bowels were much constipated; a total suppression of urine, and he walked continually in a circle within his box, occasionally neighing and halting at intervals.

Treatment.—I gave immediately Decoct. Aloës co. f̄ij Hydr. Chlorid. ʒj, Pulvis Opii ʒss, in the form of draught, and applied sinapisms over the abdomen and chest, and threw up injections of soap and water. At 5 p.m. no visible change was present, beyond that of the vital powers being more prostrated. I considered the case as being one of structural disease of some part of the alimentary tract, but the precise portion of which it was impossible to say, or to what extent it existed. Of course I considered the case as being hopeless, and told the owner my opinion. At the same time I suggested the desirability of venesection being resorted to, and which was had recourse to, to the amount of three quarts, without, however, affording the least relief. Viewing the case as a purely professional one, I advised the owner to consult Mr. F. Mavor, M.R.C.V.S., who, having very carefully examined the animal, diagnosed it to be a case of rupture of some of the internal viscera, and considered it altogether hopeless. The horse lingered on until after twelve o'clock the same night, exhibiting symptoms of the most excruciating agony, but still conscious until death took place.

Post-mortem appearances.—As soon as the *rigor mortis* was complete, the knacker, who had been waiting for some time in anticipation of the prognosticated result, proceeded to open the abdominal cavity and remove the contents thereof. The entire course of the intestines were healthy, excepting about three inches at the pyloric end of the duodenum, which was in a state of partial decomposition and much circumscribed, with a few ecchymosed patches somewhat isolated; no doubt the result of active inflammation. On cutting through this viscus, I found a few rough vegetable fibres on the mucous surface enveloped in effused fibrine, and at the extreme upper and inferior part of the same viscus was attached a large fatty tumour weighing upwards of two pounds. It was somewhat irregular in outline, and slightly convoluted, assuming a pallid pink aspect, which no doubt was the result of the hematine of the blood being exudated by pressure on the capillaries. All the organs of the thorax were perfectly free from disease.

I submitted the morbid specimen to Professor Varnell,

whose opinion perfectly accorded with mine, that the case was a hopeless one from the commencement, and that medical treatment could be of no avail. He considered the case would be interesting to the profession, more especially to the junior members thereof, affording them the means of making a correct diagnosis in the event of their being called in to treat a similar one, since our professional reputation greatly depends upon our correctly diagnosing diseases on which our prognostic opinion necessarily rests, thus tending very much to give our clients that confidence in us which is essential to our future success in practice.

IRREGULAR STRANGLES.—PURPURA HÆMORRHAGICA.

By G. M. MARSHALL, V.S., Dungannon, County Tyrone.

MESSRS. EDITORS, — I was looking over a few former volumes of the *Veterinarian* the other day, when I happened to see some cases of irregular strangles recorded by the late Professor Barlow, which brought to my mind similar cases that occurred in my practice. If you think a brief description of them worth a corner in your journal, it is at your service. I also send you three cases of purpura hæmorrhagica, in which I adopted a course of treatment that I have not heard of before in such cases, and with success. I don't mean to say, however, that others may *not* have used the same medicine in similar cases.

Irregular Strangles.

Feb., 1858.—A brown mare, four years old, the property of Mr. Weglaughlin, Myrtle Grove, was placed under treatment for strangles, having great tumefaction of the submaxillary glands, which were blistered and poulticed, and in due time, suppuration being established, the swelling was lanced, and it quickly subsided.

10th.—A large swelling appears on the left shoulder, to which I ordered hot fomentations with woollen cloths to be applied; which was continued until the 17th, when I lanced it, and gave exit to a large quantity of pus. Subsequently I gave tonic medicine. Up to the 3rd March she gains very little flesh, but on that day a very large swelling makes its appearance over the loins and sacrum, inclining principally to the

left side. On exploring the rectum, up which I could scarcely get my hand, I found an enlargement lying along the side of the rectum. Ordered hot fomentations to be continually applied by means of large woollen cloths over the loins and sacrum. I expect I shall have to pass a trocar through the side of the rectum, so as to allow the matter to flow through the canula, as I fear the abscess will break internally.

19th.—On visiting my patient this morning, I was agreeably surprised to find the swelling pointing at the side of the anus. Into it I plunged my lancet, giving exit to an enormous quantity of pus, which flew out with great force a considerable distance against a wall behind. I should say there must have been about a gallon that escaped, and from this time the animal gradually recovered.

About the same time a gray horse belonging to the same person had the operation of tracheotomy performed, being threatened with suffocation from tumefied parotid glands. It was performed by my son. The animal recovered without being a roarer, or making the least noise in his breathing afterwards.

Purpura Hæmorrhagica.

The first case I will give you from memory. It occurred a few years ago, the subject being a bay mare, the property of the Rev. A. S. Irwin. She had an attack of influenza, from which she had so far recovered that Mr. Irwin drove her into town, about two miles, to get her shod at my place. The next day she was sent in to me again, having five or six large swellings between her fore legs and on the sides of the sternum. Being from home when she came in, the mare was put into a stable to await my return in the evening, during which time all her four legs had become so much swollen that she could with the greatest difficulty walk out of the stable. I administered a mild purgative, and sent her home, with directions to foment the swellings with hot water and woollen cloths. The following day the swelling had extended to the abdomen, and to such an extent I have seldom seen; a profuse discharge also issued from both nostrils. I scarified the swellings, and gave tonics combined with diuretics. A few days afterwards a large swelling (flattened) nearly covered her ribs, and on the following day or two it would seem to leave the body and appear along the sides of the neck, leaving this part again in like manner, and going to the ribs as before. The swelling of the abdomen continued to increase until it looked almost like a second belly suspended to her;

the lips were also swollen, and bright scarlet patches of petechial spots existed over the nasal membrane; the skin of all four heels had sloughed, and she had become a loathsome object to look upon or to handle. One morning Mr. Irwin came into town, and called to tell me that he had left men digging a grave for her, as he would shoot her on his return. I begged a reprieve for her for a few days longer, to try the effect of different treatment, and to this Mr. Irwin assented. I then sent out some doses of Hyd. Potassæ to be given her, continuing the tonic and diuretic medicines as before; and I must say that the result appeared almost magical, so speedily did she recover. She was afterwards sold, and worked in the Coleraine mail for some time, when I lost sight of her.

CASE 2.—A brown mare, aged, the property of Mr. Stevenson, merchant, of this town, was under treatment in September last for influenza, for which her throat was blistered, and such medicine given as the case required. The case progressed very satisfactorily until the night of the 2nd of October, when I was sent for to her, as a number of large, soft, diffused swellings, had made their appearance on several parts of her body, head, and thighs. She was dull, pulse feeble, and a number of petechial spots existed on the nasal membrane. I gave a mild aperient, and, after its operation, directed Hyd. Potassæ in solution, and a tonic diuretic ball to be given, the former in the morning, the latter in the evening, occasionally combining with the latter a small portion of purgative mass. The swellings would suddenly disappear, and as suddenly reappear in other places. Suffice to say that this treatment was continued till the 26th of October, when the animal was struck off the sick list, and soon got into splendid condition.

CASE 3.—The subject of this case was a bay cart-horse, aged, the property of Mr. Robert Burns, of Ballynakelly. The animal had influenza, as in the case of No. 2, when suddenly large patches of swelling appeared in a number of places over his body, breast, and legs, out of which oozed a quantity of serum; the nasal membrane was also covered with petechial spots, as in the former case. The same treatment was adopted in this instance as the others, and with the same result.

CASE OF RUPTURE OF THE STOMACH, ASSOCIATED WITH THE EXISTENCE OF A LARGE TUMOUR ON THE ILEUM.

By G. J. GOULD, Veterinary Student, Southampton.

THE patient was a bay mare, seven years old, the property of Mr. Donkin, shipbuilder, of this town. She was admitted into our infirmary on Saturday afternoon, the 27th August, suffering from an acute attack of colic and tympanitis. The pulse was strong and quick; the visible mucous membranes much injected; and the indications of abdominal pain very severe. The spasms were most extreme and prolonged; indeed it was the worst case I had seen for some time, both in the duration and also in the rapidity of the attacks. An ordinary colic draught was administered; and as the bowels were constipated, I removed the fæces from the rectum and threw up a clyster. No relief being obtained, and the pulse becoming harder, I elected to bleed her, which I did until the heart's action was diminished. Two hours afterwards, the mare being no better, I administered another draught. By this time her sufferings had so much increased that she scarcely kept quiet two minutes together, and I began to lose all hopes of saving her.

In about an hour, however, after the exhibition of the last draught she was more composed, and freer from pain; but this alleviation of her symptoms did not last long. Very shortly a great change for the worse came on, and was quickly followed by vomiting; the ingesta escaping by the nostrils. Cold perspirations, quick breathing, tremors, a rapid and indistinct pulse, &c., succeeded; and she gradually sank, and died in the course of the evening.

On making a *post-mortem* examination the next morning, it was found that the immediate cause of death was a rupture of the stomach. The rent was a very large one, and all the ingesta had escaped into the abdominal cavity. A large tumour was existing on the ileum, inclining to one side and attached to the peritoneal surface. It was about six pounds in weight, and was one of the largest I had ever seen. It had not, however, apparently interfered with the passage of the aliment through the intestine.

The owner informed me that he had heard that the mare had been sold and resold by two or three different persons lately,

and that they all had sold her because "they knew she would die suddenly some day or other." I believe this opinion was based on the fact that she very often suffered from acute abdominal pain, which doubtless depended on the tumour pressing upon the intestines, and causing transient obstruction.

To me this case is very interesting, not only from the existence of the tumour, but from the time it must have been forming without causing obstruction of the intestine. I have recorded the case briefly, but I hope sufficiently exact, and I send it to your most valuable medium of veterinary science—the *Veterinarian*—hoping you will give it a place in its pages.

Facts and Observations.

MORTALITY AMONG ARMY HORSES IN AMERICA.—The report of Dr. Turner, late chief veterinary surgeon of the army, gives some interesting facts in relation to the mortality among the horses of the army. In the Eastern department alone the mortality is 3000 per month, and an equally large number is condemned. The 72,000 horses per year cost the Government nine millions of dollars. Add the losses in other departments and the number killed in battle, and we have some insight into the vast expenditure involved in the present struggle.

FORMATION OF NITRE IN THE SOIL.—According to M. Boussingault, nitre is formed by the slow combustion of azotized organic matters in the earth, analogous to humus, and the oxidation of a small amount of nitrogen from the atmosphere, these furnishing the acid; the *detritus* of crystalline rocks yield the alkali.

TEST FOR SUGAR IN URINE.—M. Cailliau states that when urine containing sugar is violently shaken with half its bulk of chloroform, the mixture becomes milky, and separates into two layers; the upper one being clear and almost colourless, the lower one white, thick, and gelatinous. If the upper layer be removed and left to evaporate in a porcelain dish, the liquid becomes syrupy as it evaporates, and after some days the sides of the dish become covered with masses of sugar of the form of warts.

EXPERIMENTS ON THE RESPIRATION OF PLANTS, &c.—At a late meeting of the Munich Academy of Sciences, Baron Liebig presented an interesting paper on certain experiments he had made with an apparatus constructed at the expense of the King of Bavaria for estimating oxygen in various bodies. These experiments prove that not only is oxygen disengaged from the atmosphere by plants, but also, and in considerable quantities, by the decomposition of water in the bodies of carnivorous animals. Baron Liebig is of opinion that this fact will throw new light on the phenomena, at present so little understood, of nutrition and digestion.

PERIODS WHEN CARBONIC ACID IS LIBERATED FROM PLANTS.—There are two periods during the life of a plant when the liberation of carbonic acid gas goes on with great energy. One is during the germination of the seed; and here we can distinctly trace the object which is gained by the abstraction of the oxygen from the surrounding air, and by the conversion of it into this gas, so opposite in its properties. The conditions requisite for the germination of the seed are warmth, moisture, and the presence of oxygen. The process is also favoured by darkness. The influence of each of these will be readily understood. No vital action can go on without a certain amount of heat, and where this is not produced within, it must be derived from without. The germination of the seed is as much dependent upon warmth, therefore, as the hatching of the egg of a bird, though the amount it requires is not nearly so great. Moisture is also evidently required for the conversion into a fluid state of the dry nutriment which has been previously stored up in the seed, and no change can commence until this is supplied. The presence of oxygen is necessary, because the conversion of starch into sugar requires that some of the carbon of the former should be set free, and this can only be accomplished by the union of it with oxygen, so as to form carbonic acid. This process is favoured by darkness, because light has a tendency to produce the contrary change—the fixation of the carbon within the structure.

NEW ALBUMENOID SUBSTANCE IN MILK.—At a late meeting of the Academy of Sciences of Paris, MM. E. Millon and Commaille gave an account of “A New Albumenoid Substance in Milk.” They separated casein from cow’s milk by means of acetic acid, filtered the liquor, then heated it, and obtained a new coagulum which they found to possess the external characters of albumen, and also to contain the

same amount of nitrogen. They call the substance provisionally *lactoprotéine*. There appears to be but a small quantity of this substance present in milk, but it may be precipitated by the careful addition of acid nitrate of mercury.

ELECTRICITY APPLIED FOR THE REDUCTION OF TUMOURS.—The foreign correspondent of the *Chemical News* states, that M. Nelaton has lately applied voltaic electricity to the reduction of tumours of various kinds, more especially of polypus in the nose. The platinum electrodes of a small battery are inserted in the tumour, which gradually gives way under the decomposing action of the current, coagulation taking place at the positive pole; liquefaction at the negative. The pain caused by the operation is comparatively slight, and six applications of the powerful agent were sufficient to destroy a polypus that had resisted all endeavours to remove it.

TINCTURE OF THE COMMON BUTTERCUP A VESICANT.—The same authority informs us that M. Pavesi, of Mortara, has lately been experimenting on the vesicating properties of an alcoholic tincture of the *fresh* leaves, stalks, and flowers of the common buttercup. Every one knows, says M. Pavesi, that this very neglected plant contains an acrid juice, but I am not aware that it has ever been utilised up to the present time. The tincture preserves its epispastic qualities for a long time, and is much cheaper, of course; than cantharides, and besides has no action on the urinary organs. A weak solution forms an excellent rubefacient.

ACTION OF ACONITIA.—Aconita, says M. E. Hollot, has the same physiological properties as the root of the plant. The irritant action of aconite, usually attributed to an acrid principle, belongs to aconitia. Its action is exerted on the mucous membranes.

The absorption of aconitia by the intestinal canal is more rapid than is that of curara and strychnia by the same tissue, and this explains the rapidity of the death of animals to whom even small doses of aconitia have been given.

Aconitia acts on the nervous centres, and successively on the bulb, the spinal marrow, and the brain.

The symptoms manifest themselves in the following order: suspension of respiration, of general sensibility, of reflex sensibility, and of voluntary movements.

Aconitia disturbs the action of the heart by acting on its nervous tissues.

The effects of aconitia on men are the following:—irritation of the mucous membranes, salivation, nausea, muscular weakness, prickling sweats, heaviness of the head, pain in the track of the facial nerves, dilatations of the pupils, slow respiration, depression of the pulse, and weakness of sensibility.

Aconitia is a powerful sedative, and in external forms it has been applied with success in calming neuralgic and rheumatic pains.

In conclusion, M. Hollot cautions physicians and pharmacutists in relation to the variable nature or power of commercial aconitia as made by different processes.

COMPOSITION AND CHARACTERS OF MILK.—Dr. Voelcker, in an article in the *Quarterly Journal of Science*, states, “Milk is the secretion derived from the blood supplied to the mammary gland of the female animal of the class mammalia. It is never produced in any quantity until after parturition; but during the latter part of utero-gestation it occurs in inappreciable amounts, and instances are on record where it has been obtained from the gland of an animal previous to impregnation. The fluid secreted before parturition, and for some time afterwards, is called *colostrum*, and contains a number of large corpuscles filled with oil-globules, distinguished as the ‘*colostrum-corpuscles*.’

“Milk is white in colour, opaque, and has an agreeable sweetish taste: the odour is faint, but peculiar.

“Its density is greater than that of water. Cow’s milk, of good quality, has a specific gravity of about 1030; human milk, 1020; goats’ and ewes’ milk, 1035 to 1042; and asses’ milk, 1019, compared with water at 1000.

“The decimal reaction seems to be in a measure dependent upon the food, as might reasonably be expected; carnivora giving milk possessing an acid reaction, and herbivora an alkaline milk. Although apparently homogeneous, it may be separated into cream (which consists of oil-globules formed by their envelopes of casein (curd), enclosing the fats of butter), curd or casein, albumen, milk-sugar, and mineral matters, consisting chiefly of phosphate of lime and magnesia, as bone-earth, and salts of potassium and sodium, with some oxide of iron.”

THE VETERINARIAN, OCTOBER 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ADDRESS TO STUDENTS.

“Lives of great men all remind us
 We can make our lives sublime,
 And, departing, leave behind us
 Footprints on the sands of time.”

THE opening of the Scholastic Session at our Alma Mater, on the 3rd instant, when the Introductory Address will be delivered by the Principal, Professor Spooner, and at which we trust many of our friends will be present, as heretofore, is our apology, if one be needed, for this address to the student of veterinary medicine. We are under no apprehension that our intentions in writing it will be misconstrued, or ourselves charged with a desire to assume the dictatorship. It may be, however, that our experience makes us somewhat bold; albeit, we hope not unwarrantably so, while a familiarity with the subject, from a lengthened connection, enables us to write and advise with some degree of confidence.

We are no strangers to what has been done, and what is doing, to advance the interests of the aspirant; and we trust, indeed, we have a well-grounded assurance, arising from what has already taken place, that this will continue to be augmented as circumstances call for it. We can look back to the time when the system of education was very, very different to what it now is, and not at all approaching what it ought to have been. But an admirable, and in every sense desirable, change has been effected, only, as we have said, still to be added to.

Nevertheless, while this has been the case, it must not be forgotten that the student has his part also to play—his duty to perform; and this is the more important, since without it be done all that the teacher can do will prove

perfectly futile. To every section of his studies he will consequently have to give sedulous attention, and he should avail himself of every means to acquire knowledge during the *as yet* too limited period he is required to attend the lectures and other instructions given at the College. What these are will be best left to the respective teachers to communicate. Occasional examinations, also, are doubtless very profitable, as by them the reasoning faculties are awakened; and the memory strengthened by accumulating facts, which it is necessary the mind should retain as in a storehouse, hereafter to be withdrawn as emergency may arise. The cultivation of the intellectual powers is likewise thus aided, since the judgment has to be exercised, and thought called forth, by which the real man is built up.

The plan we are now advocating is altogether opposed to mere learning by rote, as well as to the system of "cramming," by which only a superficial acquaintance with things is gained, and to be lost almost as soon as gained. Very specious is this system, but very deceptive.

Moreover, occasional or periodic examinations as to progress will arouse a spirit of healthy and laudable competition, which is of no mean worth if persons are striving to obtain an object, since they will call into requisition all their energies, not so much for the mere possession of the object itself as from a desire to be known to excel. Especially is this to be desiderated at the present day, when local examinations are being instituted by Government, and prizes are given to the middle classes for competence, in the sciences generally. On this account it is, emphatically, an age in which the march of mind, so patent to all, may be said to be a race; and he who is contented to leave his nobler part uncultivated and untrained must take the consequences. Into the race he cannot, with any hope of winning, enter, or should he, he will be sure to be distanced.

It is true this love of knowledge is rarely born with us; it is not innate, but generally result of mind-culture, although it must be confessed it has much to do with the intellectual faculties and their correct training; the last-named being almost wholly within our province to direct.

But, for this to be correctly done, we must take into consideration the capabilities of the mind—although this is commonly greater than many, and especially the idle, will be willing to concede—and also the temperament of the individual. Nevertheless, it is astonishing what might be effected by a judicious direction of the mental powers. On this account don't be ever afraid of doing too much. The mind will bear the strain if judgment only be exercised. One of our most celebrated statesmen has said that he believes those who injure their health by over-study are not those who labour steadily and at a moderate pace, but those who neglect healthy exercise and care in other respects, and more especially those who, having been idlers for the greater part of their time, try to make up the lost ground by a desperate push at last.

The age in which we live is, unquestionably, one of unparalleled activity and progress. Men live fast now-a-days. As much may be said to be accomplished by us in a decade, as was effected in a century by our ancestors. And we must move on with the times—not “rest and be thankful,” but on the contrary be up and doing, all our energies being subordinated to our mental advancement. Such, then, being the case, every opportunity that presents itself should be seized and rendered available to the end in view. Nor must it be forgotten by you that the improvement of the mind is but another kind of labour—labour of the most intense and exhausting nature, if not judiciously resorted to—yet you must, if desirous of advancing in life, assiduously follow it, and be contented patiently to wait the result. At the first there will be difficulties to contend with, but these prepare the mind for an easy triumph ultimately, by imparting to it strength of thought and systematic action. It has been well said, “All things are full of labour; man cannot utter it, so inconceivably full of work is the world. Consider the works of man since time began, in the subjugation of the globe, in reducing its wilderness state to order and civilisation. Think of the work in changing one territory alone, such as England, from its primitive state of wide-spreading forest, swamp, and oozy morass, into its present form of one exquisitely-tended farm or garden.

Consider the works of men upon the materials furnished by nature from her surface or her depths—mineral, animal, vegetable—the whole sum of human manufactures. Think of the labours of mankind in the fine arts, in architecture, sculpture, painting, and music; the unspeakable sum of human endeavours in literature; and lastly, the untold amount of work expended on government, legislation, and war.” Taken in the aggregate, all this is truly stupendous; yet it has been accomplished by individual and collective exertion—man having been by his Creator endowed with powers fitted for this purpose, and unless he rightly employ these he does not answer the end of his existence on earth. Labour, therefore, to be useful, remembering that temperance, self-control, and earnestness will yield their practical results, while the work of the slothful and careless hand always betrays its origin. “The soul of the sluggard desireth, and hath nothing; but the soul of the diligent shall be made fat.” Shakspeare says, “Increase of appetite grows by what it feeds on;” and there is this broad distinction between animal and intellectual pleasures—while the one wearies to satiety, the other will grow and increase, and the longer they are followed the greater becomes the amount of satisfaction and profit derived from them. Depend upon it there is nothing more healthful for the mind or body than well-directed labour; to have the hand on the plough, and the feet in the furrow. Wonderful and beautiful as the structure of the body of man unquestionably is, the mind is nobler still: they are as the casket and the jewel. “I think,” says a modern writer, “the happiest ideas which are suggested by an examination of the human body are its union with the soul, and the mutual dependence of its various parts. We may admire the ease and grace of motion, the beauty of form and feature, the exquisite chiselling of the structure; but our highest conceptions and our best emotions are awakened when we view the body as the home of a thinking principle, and mark how harmoniously all its powers work together, each aiding the others, and thus serving the end to which they were ordained.”

The poet has truly said,

“The mind’s the stature of the man.”

Of man's complex nature there can be no doubt. "The body, made of the same material which it treads so proudly beneath its feet, is the finest organization of matter that can be found in the wide creation. It stands erect, and moves at the bidding of its illustrious tenant; the brow beams with intelligence, the eye flashes with a strange fire, the features express the state of the soul which animates them, and the whole piece of perfect workmanship is an honour to the Maker. Who but God would have planned anything like it? Why might we not have lived in a body as simple and unpretending in its organism as the trunk of an oak? Why all these nicely-moving joints, these strong ligaments of muscles, these thousand nerves, so delicate and sensitive, this beating heart, so curious and so busy, these blue veins which carry the vital blood through all the system, these fine adaptations and striking illustrations of design and forethought? The structure and organism of plants is wonderful, but the skill displayed in the human body surpasses all other evidences of wisdom. The face which beams with the beauty of thought and affection has been called by the poet divine; what hinders all the parts from being equally divine? But we rightly attach more importance to it, and look more deeply into its wise arrangements and workings, by reason of its union with the soul, that loftiest part of man. The home of the viewless, thinking, feeling spirit must be glorious." The mind has been likened to the sun, the great awakener of force. The heaven-sent beam, itself silent, calls into life a thousand loud activities; sending the husbandman to the furrow, filling the city street with noise, and bidding the hammer ring upon the anvil. So a great mind stirs into genial activity ten thousand lesser minds, and over nations and hemispheres the energising influence spreads. Let this be withdrawn, all becomes a moral and an intellectual waste—'tis mental midnight. But the sun shines not for itself. To other celestial bodies it imparts its invigorating beams, and by its attractive power causes them to move each in its determined orbit, thus maintaining the beautiful order known to exist in the universe—the "harmony of the spheres,"—whilst throughout nature its beneficial influence is seen.

Nor must it be forgotten by you that, once a student, always a student; ever learning, and still to learn; and having put on the harness, you must never think of turning back in the day of battle, or you can never conquer. Some few of the secrets of nature, it may be, you will be privileged to discover and make known, but many more will for ever lie hidden in depths unfathomable by mortal ken. The arcana of Nature cannot be exhausted, nor all her mysteries explained, the curtain that enshrines them being impenetrable. This, however, is no barrier to investigation, but rather an incentive thereto. In early life we are apt to be struck with something that is to us new, and perhaps we may even boast of our powers of penetration, but we soon find it is only another aspect of a thing long before known; so that with Solomon we are constrained to agree, when he says, "Is there anything whereof it may be said, See, this is new? it hath been already of old time, which was before us." At the most the wisest of us can only say, with Sir Isaac Newton, "I have been only a little more fortunate than my fellows in selecting smoother pebbles on the shore of the ocean of truth."

As to your general comportment during the period allotted for the acquirement of knowledge, we have but little to advance, feeling assured that with the many your previous education will direct you in a consistent course. An old poet has somewhat quaintly said—

"Come wealth or want, come good or ill,
 Let young and old accept their part;
 And bow before the Awful Will,
 And bear it with an honest heart,
 Who misses or who wins the prize;
 Go, lose, or conquer as you can;
 But, if you fall, or if you rise,
 Be each, pray God, a gentleman!"

But this is not enough; there is moral as well as intellectual culture, and—

"If good we plant not, vice will fill the mind,
 And weeds despoil the place for flowers designed."

Moreover, a step once taken in the road of deviation from duty, leads to another and another, until the impetus gained

becomes so great that, unless a higher power interpose, we fall to rise no more. Be, therefore, ever on your watchtower, and guard against the first appearance of evil; check it, and all will be well. Remember—

“There is hope for all; though not for all
 To sail through sunny ripples to the end,
 Chatting of shipwrecks as pathetic tales.
 * * * *
 All are not born
 To touch majestic eminence, and shine,
 * * * *
 But, through transcendent mercy, all are born
 To enter on a nobler heritage
 Than these, if each but wills to rightly choose
 In serving Duty, man’s prerogative,
 Which is far pleasanter than paths of flowers,
 Than warmest clustering of household joys,
 And prouder than the proudest shouts of fame
 That follow actions not in conscience wrought.”

To aim at attainments, and thus to enter upon the stern realities of life, will now be your duty. To advance not only yourself, but the profession you have chosen, your one object steadily to be kept in view, remembering that the one secures the other. Nor must you allow yourself to be a laggard, but for evermore be contented to do battle with those enemies that would rob you of the means you possess to acquire knowledge. In your investigations, instigated by a love of research, let truth be your guide; nor be daunted at seeming failures at the onset. Let the conclusions to which you may arrive be such as will bear examination, lest proof be demanded of you; remembering that the true path of all philosophical inquiry leads up to Truth, from which it emanates. Lord Bacon has said, “A little philosophy inclineth man’s mind to atheism, but depth of philosophy bringeth it back to religion.”

Again we say, avail yourself of the present opportunity to obtain information, for, of all fleeting things, it has been said, opportunity is swiftest in its flight. It rivals time, and may never recur. “Seize the opportunity,” was a motto suspended at the Roman feasts, and although applied by the Epicureans to luxurious indulgence and pleasure, let

it be by you applied to a far nobler purpose. Remember, too, that each has his gift, although all cannot be great. Yet the poet has told us—

“Some must be great. Great offices will have
Great talents. And God gives to every man
The virtue, temper, understanding, taste,
That lifts him into life, and lets him fall
Just in the niche he was ordained to fill.”

Each, therefore, has his duties to perform. These may and do vary. It is a law in mechanics that no two bodies can occupy the same space at one and the same time. Now, although the less ponderable body will give way to the one possessing greater might, still room must be found for both, since matter is not indefinitely compressible. Nor is that which is the most noisy or clamorous the most effective. The physical forces, though silent and unseen, are the most powerful. The light which comes from the sun and gems with beauty all nature, is more effective than the brilliant flash of the meteor, or the forked lightning; and the deeply flowing stream in its course proves productive of more good than the rushing mighty waterfall.

Likewise, do not ever forget that it is only by diligence and perseverance you can hope to excel. Shakspeare has said—

“Perseverance
Keeps honour bright. *To have done*, is to hang
Quite out of fashion, like a rusty mail
In monumental mockery.”

By patient labour and research alone men of the most transcendent genius have succeeded in making great discoveries, and arrived at a knowledge of those fundamental truths which lie at the foundation of all true science. Be it yours, then, not so much to have your names enrolled in the annals of fame and mighty achievements, as of usefulness to your fellow-men, by honestly labouring in the sphere that Providence has placed you. The knowledge we acquire in after life is, without doubt, that which is most important. In youth we have to sow the seed, and in mature years to

reap the fruit; but in the meantime we must not be idle, or the harvest will fail to be plentiful.

“ Many are our joys
In youth, but oh! what happiness to live
When every hour brings palpable access
Of knowledge, and all knowledge is delight.”

In concluding this address we would, above all, have you remember that what we have stated respecting mind-culture may not be attainable by you in your own unassisted strength; yet despair not, if you are desirous of excelling, the power will be given you from above, in reference to which the injunction and the promise are united—“ Ask, and ye shall receive.”

Extracts from British and Foreign Journals.

HIPPOPHAGY.

M. DECROIX, one of the secretaries of the Society for Protection of Animals, lately delivered a lecture at the Garden of Acclimatisation of the Bois de Boulogne on the alimentary use of horseflesh. After showing, by official data, that the supply of butcher's meat of all kinds, which is so necessary to support the strength of man, and enable him to bear fatigue and avert disease, is not equal to the demand, he showed that if the flesh of disabled horses were introduced into public consumption, it would increase the present supply of meat by at least one twelfth, and that in Paris especially it might daily produce upwards of 2600 kilogrammes of good meat, even admitting that the flesh of one third of the horses slaughtered were rejected on account of their diseased state—a proportion which he considered exaggerated. M. Decroix reminded the audience that the illustrious Larrey, in the course of his military career, had three times prescribed the meat of horses for his patients, and that in Egypt especially he had, by the use of this aliment, stopped a scorbutic affection which had broken out in the army. More recently, he added, in the Crimea, two companies of artillery had, by Dr. Bauden's advice, lived entirely upon the flesh of unser-

viceable horses, and thereby escaped the diseases which afflicted the rest of the army. He further stated that at Vienna, Berlin, Hamburg, Altona, and other towns, horseflesh is eaten not only by the lower orders, but by all classes of society. In order to confirm his theory by experiment, the lecturer concluded his address with ordering in a large tureen of broth made from horseflesh, and a dish of the latter flavoured with spices, of which the company partook with great relish.—*Galignani*.

UTILISATION OF SEWAGE.

THE select committee appointed by the House of Commons to inquire into any plans for dealing with the sewage of the metropolis and other large towns, with a view to its utilisation for agricultural purposes, have published their report. Its chief points are as follows:

“The committee has come to the conclusion that it is not only possible to utilise the sewage of towns, by conveying it, in a liquid state, through mains and pipes to the country, but that such an undertaking may be made to result in pecuniary benefit to the ratepayers of the towns whose sewage is thus utilised. That benefit may, in a few years, be greatly increased; for the amount of artificial manures is even at present insufficient, and the sources whence some of the most important are obtained will, in a few years, be exhausted. Other means of fertilising land must therefore be resorted to. The committee, having examined the chairman and engineer of the Metropolitan Board of Works, are of opinion that more might have been done by that board towards the profitable use of the sewage of London; and that the completion of the outfall sewerage of the metropolis ought, at the earliest possible moment, to be followed by the adoption of a system which may convert that sewage from a nuisance into a permanent and increasing source of agricultural fertility. Even if a pecuniary benefit were not to be secured, yet such a consideration should not deter local authorities from taking such steps as are possible to free rivers from pollution. There can be no doubt as to the injury which results from the practice of conducting sewage and other refuse matters into the rivers, from whence numerous towns, villages, and country populations derive their water supply. It is imperatively necessary that such a practice should be discontinued. No efficient artificial method has been dis-

covered to purify, for drinking and culinary purposes, water which has been once infected by town sewage. By no known mechanical or chemical means can such water be more than partially cleansed; it is always liable to putrify again. Processes of filtering and deodorisation cannot, therefore, be relied upon to do more than mitigate the evil. Water which appears perfectly pure to the eye is sufficient, under certain conditions, to breed serious epidemics in the population which drinks it. Soils, however, and the roots of growing plants, have a great and rapid power of abstracting impurities from sewage water, and rendering it again innocuous and free from contamination. Mr. Ffennell, the Chief Inspector of Fisheries, stated in his evidence that sewage water, in a putrifying state, is destructive to fish; a considerable increase in the amount of food for the people, and of revenue to the owners of rivers, would therefore result from purifying the rivers of the United Kingdom which are now contaminated by sewage and other matters. The removal of house refuse to the land would now be much easier and cheaper than it was formerly; because carriage by suspension in a liquid is the cheapest mode of transport. In many towns of Lancashire there are to this day numerous cesspits. This is the case with Manchester, where the local authorities expend about £20,000 a year for emptying them and removing the contents to the land, and receive back 50 per cent. by the sale of the material. We recommend that the important object of completely freeing the entire basins of rivers from pollution should be rendered possible by general legislative enactment, enabling the inhabitants of such entire districts to adopt some controlling power for that purpose; but it should include a provision for compelling local boards to render the sewage of their districts innocuous by application to the land for agricultural purposes. The case of the valley of the Thames (where the purification of the river, which has been sought by the expenditure of enormous sums, is, to a considerable extent, counteracted by the increased discharge of sewage from towns higher up the stream) requires special and immediate attention."

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire Académie des Sciences de Paris.

RESEARCHES ON PUTREFACTION.

By M. L. PASTEUR.

WHENEVER animal or vegetable matter becomes spontaneously altered, eliminating fetid gases, it is said there is putrefaction taking place. It will be, however, shown in the course of this investigation, that this definition has two defects opposed to each other, viz., that it is too general, because it groups together phenomena essentially distinct, and it is too restricted, because it separates others which are of the same nature and origin.

The interest and utility offered by an accurate study of putrefaction have always been acknowledged. Some time since it excited strong hopes that by the practical deductions made from it, some light might be thrown on the production of maladies, principally on those which the ancient physicians called putrid. This was the idea that influenced the celebrated English physician Pringle, who, in the middle of the last century, devoted himself to the investigation of and experimented with septic and antiseptic matter, in order to clear up the observations he had made on the diseases prevalent in armies. Unfortunately the disgust connected with these labours, and their evident complications, have hitherto deterred the major part of the experimenters from carrying them fully out, so that nearly every thing remains yet to be done.

My researches on fermentation, the author says, have naturally led me to that sort of study, and to which I have resolved to devote myself without troubling much about the danger and the disgust they inspire. If I wanted encouragement to follow out these researches, I would recall the words spoken by Lavoisier at the Academy under somewhat similar circumstances:—"Public usefulness and the interest of humanity ennoble the most repugnant labours, and show to an enlightened world the zeal by which the disgust and the obstacle have been surmounted." The results which I have

the honour to lay before the Academy, have exclusive reference to the cause of the phenomena. This was the first point to be elucidated, and I believe that I have succeeded. It is, however, an extensive subject, and I am persuaded that I shall have much to add hereafter to my first impressions. I therefore ask the indulgence of the members of the Academy.

The more general results of my experiments are very simple. They are that putrefaction is determined by organized ferments of the vibrion genus. Ehrenberg has described six species of vibrions, to which he has given the following names :

- | | |
|-----------------------------|----------------------------|
| 1. <i>Vibrio lineala.</i> | 4. <i>Vibrio rugula.</i> |
| 2. <i>Vibrio tremulans.</i> | 5. <i>Vibrio prolifer.</i> |
| 3. <i>Vibrio subtilis.</i> | 6. <i>Vibrio bacillus.</i> |

These six species were partly known to the microscopists of the last century, and have been found by all who have since occupied themselves with infusoria. I reserve the question respecting their identity, or the difference of the species, also the variety of their forms, subordinated to the change of the condition in which they exist. I accept them provisionally, just as they have been described. In whatever way, I arrive at the conclusion that the six species of vibrions are six species of animal ferments, and that these ferments are the results of putrefaction. Moreover, I have discovered that all these vibrions can exist without free oxygen gas ; further, that they die when brought in contact with it, or when nothing protects them from the direct action of it on them.

This fact, which I announced to the Academy for the first time two years ago, and of which I have recently given several examples, namely, that in ferments existed animalcules of the vibrion species which could live without free oxygen gas ; this being only a particular case, which belongs to the mode of fermentation, and is perhaps the most general in nature. The conditions under which putrefaction is manifested may vary very much. Let us suppose, in the first instance, that it is a liquid, that is to say, putrescible matter of which all the parts have been exposed to the contact of air. Of two things one must occur, either this liquid would be in a vessel protected from the air, or in an uncovered one, the opening of which would be more or less wide. I will examine successively what takes place in both cases. It is a well known fact that putrefaction is a certain time before it declares itself. This varies according to circumstances, depending upon the temperature, neutrality,

acidity or alkalinity of the liquid. Under the most favorable circumstances it requires at least twenty-four hours before the phenomena are perceptible by any external signs. During this first period a sort of peristaltic motion takes place in the liquid, which movement is in order entirely to remove the oxygen of the air that is dissolved in the fluid, and to replace it with carbonic acid gas. The total disappearance of the oxygen gas, when the liquid is neutral or slightly alkaline, is generally caused by the development of the smallest infusoria, viz., the *Manas crepusculum*, and the *Bacterium termo*. A slight disturbance is caused in the liquid because these little beings travel in all directions.

When the first effects of the abstraction of the dissolved oxygen is accomplished, they perish, and finally sink to the bottom of the vessel like a precipitate, and if by chance the liquid does not contain fecundative germs of the ferments of which I am now about to speak, it would remain indefinitely in that state without putrefying or fermenting in any way. Such a case is rare, but I have, however, met with several instances. More frequently when the oxygen, which was in solution in the liquid has disappeared, the vibrion-ferments, which have no need of this gas to exist, begin to show themselves, and putrefaction declares itself immediately. It accelerates little by little, following the progressive march of the development of the vibrions. As to the putrefaction, it becomes so intense, that to microscopically examine one single drop is very painful, even if the examination only last a few minutes. But I must here observe that the fetidness of the liquid and the gas principally depends on the preparation of sulphur, which enters into the substance undergoing putrefaction. The odour is hardly perceptible if the substance is not sulphurous. Such, for instance, is the case in the fermentation of albumenoid substances which water may remove from the yeast of beer. Such is also the case with the butyric fermentation. For, according to the results shown, but which appertain to my anterior studies, the butyric fermentation is by the nature of its ferment a phenomenon exactly of the same order as regular putrefaction. For this reason the view which has been taken of putrefaction is in some things too limited. The result of the preceding observations is that the contact of air is by no means necessary to the development of putrefaction. On the contrary, if the dissolved oxygen in a putrescent liquid were not at once abstracted by the action of special beings, putrefaction would not take place, as the oxygen would destroy any vibrions which might have been developed at the beginning.

I will now examine putrefaction in a case where air has had free access. But what I have just stated might lead to the belief that it cannot take place, as the oxygen gas destroys the vibrions which excite it. Nothing of the kind; and I will even show that it is in accordance with the fact that putrefaction in contact with air is a phenomenon more complete than that which takes place without it. Let us now take a putrescent liquid which has been freely exposed to the air, for instance, contained in a large shallow vessel open at the top. The effect which I have just described, viz., the obstruction of the dissolved oxygen from the mass of the liquid, is effected in the same manner as in the first case, the only difference consists in the fact that the *Bacteriums*, &c., do not perish after the abstraction of the oxygen, except in the interior of the liquid; on the contrary, they continue to propagate indefinitely on the surface, because of its being in contact with the air. They cause the formation of a thin pellicle, which increases in thickness until it breaks up and sinks to the bottom of the liquid; another now is brought to the surface, and so on. This pellicle, to which are generally attached divers species of *Mucorii* and *Mucidinii*, prevents the dissolving of the oxygen in the liquid, and consequently favours the formation of the vibrious ferments; the vessel being, as far as they are concerned, as if effectually closed to the introduction of air. They even multiply in the pellicle itself on the surface, because they are protected from the air by the *Bacteriums* and the *Mucorii*.

Against the too direct action of the atmospheric air* the putrescent liquid becomes then the seat of two kinds of chemical arts very distinct from each other, but which, in respect of their physiological functions, have an affinity with the two species of beings which they maintain. The vibrious, on the one hand, live without the co-operation of the oxygen of the air, determine in the interior of the liquid acts of fermentation, that is, they transform the nitrogenized matter into products more simple but still complex; the *Bacterium* or the *mucorii*, on the other hand cause combustion of the same

* I reserve always, nevertheless, as I have done before, the question to ascertain whether the ferments, notably the vibrious, do not become *airobic* under certain circumstances from *anairobic*, as they were when in the state ferments. I propose, with all sorts of scruples, these new words, *airobic* and *anairobic*, to indicate the two classes of inferior beings; one incapable of existing without free oxygen gas, the other being capable of multiplying *ad infinitum* when protected from the contact of this gas.

The new class of *anairobic* might be called the class of *zymics* (from ζύμα, leaven ferment) that is to say, ferments. The *airobics* would constitute by apposition the class *azymics*.

product to take place, which reduces them to the most simple binary combinations, such as water, ammonia, and carbonic acid. There remains still to distinguish the very remarkable case of putrefaction in which the liquid has very little depth with easy access of atmospheric air. I will experimentally demonstrate that the fermentation and the putrefaction can then be absolutely hindered, and that the organic matter will yield only to the phenomena of combustion. Such are the results of putrefaction effected with free contact of the atmospheric air. On the other hand, in the case of putrefaction not in contact with the air, or without air, the products of the inner part of the pellicle remain unaltered.

Just now I stated that putrefaction in contact with the air was a phenomenon, if not always more rapid, at least more perfect and more destructive of the organic matter than putrefaction not in contact with the air. But in order to make this better understood, I will adduce some instances. Let us allow the lactate of lime to putrefy, the air being excluded. The *vibrious ferments* will transform the lactate into divers products, amongst which will always figure the butyrate of lime. This new combination is undecomposable by the vibrions that have provoked it, and will remain in the liquor without any change whatever. But let us repeat the same operation in contact with the air. As fast as the *vibrious ferments* act in the interior of the liquid the pellicle on the surface burns up by degrees completely the butyrate of lime. If the fermentation is very active, the phenomenon of combustion on the surface stops, but on account only of the carbonic acid disengaged preventing the access of atmospheric air. The phenomenon recommences as soon as the fermentation is either completed or arrested. It is the same exactly if you ferment a solution of sugar excluded from the air. The liquid becomes charged with alcohol which is indestructible; while if you operate in contact with the air the alcohol, after having become acidified, is burned up, and is entirely transformed into water and carbonic acid gas; then it is the vibrions appear, and putrefaction follows, when the liquid contains nothing more than water and nitrogenized matter. Finally, in their turn the vibrions and the products of putrefaction are burnt by the *Bacteriums* or the *Mucorii*; the latter surviving cause the combustion of those which have preceded, and thus is accomplished the integral return of the elements to the atmosphere and to the mineral state of organized matter.

Let us now consider putrefaction in solid substances. I have proved recently that the body of an animal is closed, in ordinary cases, against the introduction of the germs of

inferior beings. Consequently putrefaction would at first be established on the surface, after which it would gradually proceed to the interior. Let us consider the entire carcass of an animal abandoned after death to itself, either in contact with the air, or excluded from it. The whole surface is covered with dust, carried by the air, that is to say, the germ of the inferior organism. Its intestinal canal, where principally the faecal matter is formed, is filled, not only with germs, but with vibrions fully developed, which Leeuwenhock has already noticed. These vibrions are in advance of the germs on the surface of the body. They are in the state of adult individuals deprived of air, bathed in liquid, and fast multiplying, and also in full activity. It is through them that the putrefaction of the body, which has hitherto been preserved by vitality and the nutrition of the organs, begins. Such is the progress in the different forms of putrefaction.

The *ensemble* of the facts which I have enumerated will hereafter be published in a memoir, with all the experimental proofs belonging to them, but these facts might be misunderstood or misinterpreted if I were not to add a few developments from them, which the academy will no doubt excuse. Let us consider, in order better to fix our ideas, a voluminous mass of muscular flesh. What would happen if putrefaction were prevented on the outside of it? Would this flesh preserve its structure and quality during the first hours? Such a result cannot be expected; it is, in fact, impossible, at ordinary temperature, to subtract the interior parts of this flesh from the reactions of the solids and the liquids on each other.* There will always be a force or power in operation, say of contact, an action of *diastasis* (if I am allowed this expression) which develops in the interior of the piece of flesh small quantities of new substances which will add to the flavour of it their own proper flavour. Many things may oppose the putrefaction of the superficial layer. It would suffice, for instance, to envelope it with some linen soaked in alcohol, and to place it afterwards in a close vessel (with or without air, it matters not). As long as the evaporation of the alcohol does not take place, putrefaction will not set in, neither in the interior, because the germs of the vibrions are absent, nor on the exterior, because the alcoholic vapour is opposed to the development of the germs on the surface. But I have ascertained that meat becomes tainted when

* In other words, death does not extinguish the reaction of the liquids, and solids in the organism. A sort of chemical life, if I may so express myself, continues to go on, in the same way as a fruit which ripens after being removed from the tree. Gangrene is a phenomenon of the same order.

in small quantity, and is gangrenous when in a larger or more considerable quantity.

In my opinion this is one of the instances in which we err, by giving too ample a definition to ordinary putrefaction. There is no similitude of nature or origin between putrefaction and gangrene. Far from being putrefaction, gangrene seems to be the state of an organ, or of part of an organ, preserved from putrefaction, in spite of death, and of which the liquids and solids react chemically and physically on each other out of the pale of the normal acts of nutrition.

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

(OFFICIAL REPORT.)

THE members of the above Association held their Eighth Meeting at the Brunswick Hotel, Piccadilly, Manchester, on the evening of the 14th inst.; the President in the chair.

The following Veterinary Surgeons were present:—Thomas Greaves, Esq., Manchester, President:—John Lawson, Esq., Cuthbert Simpson, Esq., Peter Taylor, Esq., — Taylor, jun., Roger Hampson, Esq., W. Haycock, Esq., G. Sermons, Esq., W. Dixon, Esq., J. Haslam, Esq., N. Carney, Esq., E. Boyle, Esq., C. Rawlings, Esq., A. L. E. Hunt, Esq., Birmingham, P.R.C.V.S., London; E. C. Dray, Esq., Leeds; J. Broad, Esq., Bath; W. A. Cartwright, Esq., Whitchurch; John Greaves, Esq., Altrincham; James Brooks, Esq., Pilkington; James Howell, Esq., Rochdale; James Taylor, Esq., Oldham; Roger Bridge, Esq., Bury; George Brown, Esq., Oldham; T. M. Leech, Esq., Bakewell; W. Whittle, Esq., Worsley; John Smith, Esq., Ormskirk; G. Morgan, Esq., Liverpool; John Simpson, Esq., Liverpool; J. Brydon, Esq., Liverpool; W. Williams, Esq., Bradford, S.Y.S.; J. H. Carter, Esq., Bradford; W. Tool, Esq., Lichfield; W. Litt, Esq., Shrewsbury; — Lee, Esq., Macclesfield; — McTaggart, Esq., Halifax; G. Fleming, Esq., F.R.G.S., F.A.S.L., V.S., King's Own Hussars; W. Taylor, Esq., Stockport; and others.

The President's Address.

Having now disposed of the preliminary business, and before calling upon our friend Mr. Lawson to favour us with his paper upon tetanus in the horse, I beg leave to state the pride and pleasure I experience on this occasion in being supported by so large and influential a body of my veterinary brethren. On my right I am honoured by the presence of the President of the Royal College of Veterinary Surgeons—a gentleman in every respect worthy of that exalted position, the most honorable that any

can aspire to or can be placed in as a veterinary surgeon. On my left hand I am honoured by the presence of another president, the President of the Yorkshire Veterinary Medical Society, a gentleman deservedly respected and beloved by all who know him; we have also many others amongst us who are distinguished ornaments to the profession to which they belong. But, gentlemen, great as is this occasion, it does not surpass that memorable meeting in Newcastle, on the 21st of July last, when the worthy President of the North of England Veterinary Medical Association was supported by three professors, three presidents, and thirty members of the profession. Professors Simonds, Gamgee, and Varnell, spoke on that occasion; the first two alluded to provincial veterinary medical associations in the most flattering and encouraging manner; now we have Professors Spooner's and Dick's most gratifying letters. So it will be perceived that, although we are not named in the Act of the Royal Charter, nor do we meet under the auspices of the corporate body, still we do assemble in this room under the banner of professors, and under the banner of the colleges. I call your attention to that meeting chiefly to give me an opportunity to refer to that magnanimous speech of their most excellent and highly respected secretary, Mr. Armatage. He says: "I look upon these provincial veterinary medical associations, gentlemen, as one of those great beacons which have been ignited and now indicating, by its powerful flame, that eminence to which we as a body are wending our way, and a distinguishing mark by which our profession may be known." Again, he remarks of Manchester: "I have often heard it said, if you get one of the Vets. there to make a proposition, depend upon it, not only will it be on the strongest reasonable foundation, but to a man will they carry it out. Again he says: "This is the sort of union we want, unity of heart, unity of purpose and design, not unity of opinion merely, but unity of principle; its tendency is to show up a man in his true colours; to cause him to extend the right hand of fellowship, and no longer go on hating or envying his neighbour without knowing why." Now, gentlemen, I have perused these pithy sentences, and am of opinion it is next to impossible to improve upon them; these sentiments are an honour to human nature, and they reflect infinite credit on Mr. Armatage, and I feel assured you will not blame me for taking up your time in reproducing them here. I maintain that a higher compliment or a more honorable testimony could not be paid to any body of men. I congratulate you veterinary surgeons of Manchester upon the high and honorable position you have acquired for yourselves. I feel it the proudest act of my life to preside over a body of men so much respected by their veterinary brethren far and wide; I ask you, let us do all we can to merit and maintain this good opinion; as by doing so we may not only be useful in our day and generation, but our children's children will bless us, and sometimes look back upon our memory in silence, it may be, but with feelings of profound respect and satisfaction. But to the business of this evening. I am sure it must be a source of great satisfaction to you all, as it is to

me, to know that that formidable and most difficult disease, tetanus, is going to be grappled with to-night by the gentleman who has so kindly undertaken the task—a gentleman whose clear perceptions and extensive practical experience render him in every way so eminently qualified. We all know him; we know he is no idealist or visionary man. If he espouses and adopts a plan of treatment it is because it is sound in principle, and if after proving it he finds it to be attended with a greater measure of success than he has been accustomed to experience, it then affords him the keenest pleasure to make it known to others. Thus it is his opinions have stamped upon them a genuineness; and their soundness has always the ring of the true metal. I invite you, gentlemen, to listen attentively to every word he utters, meditate upon them, and if they commend themselves to your minds, carry them home with you; apply them in your practice; and if his plan of treatment is attended with the same measure of success with you as it has been with him, you will have just reason to bless the day you attended this meeting. Let us approach the consideration of this subject as a body of earnest men resolved to acquire more knowledge about it; for after all, gentlemen, the sublimest theory in the world, the most refined, profound, scientific researches, if the result lacks the element of success, it is of no more value than the grossest blundering empiricism. I shall invite each of you to give me your own views and opinions; and I hope we shall be led to adopt the right method; that is always the best method. Gentlemen, the interest and the dignity of our profession are at stake; let us be in earnest. We never find this disease trifling; we find this antagonist always in earnest. On our first visit we find he has got our patient in his death grip; let us endeavour to gain knowledge, so that the next time we are called upon to try our strength with this antagonist we may be found prepared. If, therefore, we are initiated into a successful method of treating this formidable and intractable disease, the author of the essay will deserve well of his profession. I shall tender him my best thanks; you as a body will, I am sure, most willingly and proudly render him deep gratitude; and posterity will look to the deliberations of this night as being one of the noblest, brightest pages in the annals of veterinary science. Gentlemen, I have thought it right to make these few observations with a view to induce a proper frame of mind for the reception of great truths on this deeply interesting and very important subject. I have now very great pleasure in calling upon my friend Mr. Lawson kindly to favour us with his paper on "Tetanus in the Horse."

On Tetanus, by J. Lawson, Esq.

MR. PRESIDENT AND GENTLEMEN,—I did not intend to have brought the subject of this paper before you for some time to come, but having made our worthy president a sort of half promise one night, he put the other half to it himself, and thus compelled me to appear before you with my views on the treatment of tetanus less

mature than I would otherwise have wished. I shall not waste the time of the meeting with a preface, nor do I intend to lengthen this paper with a minute description of the physiology and pathology of the disease, simply because I have nothing either new or interesting to offer you on these parts of my subject. I shall therefore content myself with hurriedly sketching its leading features, that I may the sooner get to that part which most of all others interests the veterinary surgeon, viz., the treatment.

I am told by those learned in Greek that tetanus is derived from a word in that language which being interpreted means "to stretch," and may be described to be a disease in which the voluntary muscles are in a state of rigid, lasting contraction, with paroxysms of brief and painful spasms, alternating with irregular intervals of more or less relaxation. I believe this to be a disease of the true spinal system, and that the cerebrum in the horse is rarely if ever affected. Different names have been conferred upon the tetanic condition, according to the obvious effects of the spasms. Thus when it produces a closure of the jaws, the affection has been denominated trismus, when a curvature of the body backwards, opisthotonus; when forward and downwards, emprosthotonos; and when to one side, pleurosthotonos.

These conditions are now treated as mere symptomatic diversities of the same disease. In the horse, trismus and opisthotonus are the most frequent; indeed, I never saw a case of the other varieties. Whatever form occurs, the disease may be either acute or chronic; the former a most formidable malady, seldom admitting of cure, tending rapidly to involve the whole frame, and unfortunately the more frequent in occurrence; the latter generally milder in all its phases, more inclined to be partial, and much more amenable to treatment.

The disease is also said to be either traumatic or idiopathic, the former following wounds, bruises, or other injury, and usually acute; the latter of spontaneous origin, without any external and assignable cause, and usually more chronic. It has been thought by some that tetanus will assume the epidemic form, as there have been seasons in which it has so commonly supervened on injuries, that practitioners have dreaded its appearance on every occasion when a horse has been brought to them for scratches, or punctures, or wounds of any sort. My own experience of this disease does not bear out this idea. The most frequent form is that which is traumatic and acute, and the symptoms and character of this may be taken as typical of the disease in general. Various premonitory symptoms are given by some authors, such as a peculiar brightness of the eye, irritability, watchfulness, dislike to have the head touched, constipation of the bowels, and a disinclination to feed as well as usual. I think it not unlikely that such symptoms may exist, but I must confess that I have never been able to detect or even suspect the presence of tetanus until the indications were more definite in their character. The disease may be said to be established when there is a soreness about the throat, stiffness in the

upper and back part of the neck and of the head; the nose a little protruded, the ears erect, and the tail carried rather higher than usual. On approaching the animal, he is unusually excited, and the pulse becomes accelerated from nervous irritability; if you attempt to open the mouth the head is violently thrown up, the muscles of the eyeball spasmodically contract, drawing it within the orbit, and the cartilago nictitans is convulsively protruded. The muscles of mastication next become affected, and the action of the jaws are either much limited, or they are entirely closed. As the disease advances, other sets of muscles become involved with those of the back, loins, haunches, and tail. The head and nose are protruded, the nostrils are widely dilated and scarcely move during respiration; the angles of the mouth are drawn up, the eyes are particularly brilliant and watchful, the eyelids are drawn asunder, the muscles of the eyeball are in a state of continual spasm, which causes the brow to be partly forced over the eyes, and the countenance altogether has a most distressing appearance. The bowels are said to be obstinately constipated, but I have not always found this the case, and I have seen many a one die when the bowels have been well opened and when constipation was never a prominent symptom, although I do not deny that it is sometimes present. The extremities now become stiffened; the animal stands stiffly, with his legs straddling widely apart, and should he be urged to move, does so as if he had no joints; he is altogether rigid as a board, and the tail is erect and has a tremulous motion.

In almost any stage of the disease the slightest noise will bring on a paroxysm of distressing spasm—opening the box door, lifting a bucket, the entrance of another person into the box, one step taken to approach the animal, the getting hold of his collar, or any attempt to touch his mouth or muzzle; indeed, almost any movement he can see if taken hurriedly or noisily; and in the stage of the disease I have just been describing, the paroxysms are so severe that it is with the greatest difficulty he can keep himself from falling, and should he do so he becomes fearfully excited; one paroxysm follows another rapidly: the pulse, rarely much affected in the early stages, is now quick, weak, and almost imperceptible; the power to swallow, always difficult, is entirely lost; the body is covered with perspiration, and the breathing is laborious and increased to the utmost degree. I have said before that this was a disease of the voluntary muscles, but in the latter stage the involuntary are without doubt affected. The scene may close by asphyxia consequent on spasm of the glottis, or immobility of the diaphragm and other respiratory muscles, or from total exhaustion of the vital powers through excessive nervous excitement and want of nutrition, or even sometimes from a spasmodic seizure of the heart itself. This disease, in my experience, has run its course in a single day, and I have known it exist for a month and end fatally after all, but the more acute cases usually live from four to eight days. I have not been able to assign any other cause to my idiopathic cases than exposure, and many of them I could easily trace to that source; my traumatic ones have

supervened on taking away lampas, nicking, wounds, and pricks of the feet, docking where the hæmorrhage had been stopped by the ligature, broken knees, scalds on the back, wounds both slight and extensive, particularly about the flank, belly, and joints; and I had one case from extensive punctured wounds caused by the teeth of a harrow on the hips. I have often heard of it following castration, but have had the good fortune to escape it so far in my own practice.

Punctured and lacerated wounds are debited with most of my cases, and the application of some irritating astringent to them has in my belief been one of the exciting causes. The nerves at and leading from the injured part sometimes show increased vascularity and enlargement. On the other hand, cases are met with where all traces of disease either in the nerves or spinal cord are entirely wanting. The morbid appearances found after death are far from uniform in their nature. The brain is usually free from disease. The spinal cord generally manifests congestion, both in itself and its membranes, and I have thought sometimes that the amount of serum was preternaturally increased. The lungs are congested, there is unusual vascularity of the air-passages and of the pharynx, œsophagus, and stomach, and the mucous coat of the bowels is often inflamed. I made a very careful post-mortem examination of a case lately. The lungs were congested, and the mucous coat of the bowels slightly inflamed. The brain was perfectly healthy, and the spinal cord seemed to be darkened in colour and much congested about the loins, otherwise it was healthy. Some authors look upon this disease as simply a form of meningitis or myelitis; but inflammation of an organ seldom leads to such an excess of function, hence one of the most common results of inflammation within the spine is paralysis. Dissection sometimes, but not always, exhibits an injected state of the spinal meninges, and to a certain extent of the nervous substance, but this is only congestion, not inflammation. It is in all probability the result and not the cause, and I believe the usual state in which the lungs and bowels are found is fully accounted for in the same way. It appears to me that the phenomena, as well during life as after death, are best explained upon the supposition that the disease is a mere irritation of the spinal marrow and medulla oblongata. This irritation may be propagated from the injured extremities of the nerves, as in wounds, or from other sources of excessive irritation, such as the intestinal mucous membrane; or it may originate in the spinal marrow itself, through causes acting on that structure, such as cold or rheumatic influence. In all the course of my experience of this disease up to the year 1857, I had only succeeded in saving one. It was a four-year-old colt, the property of John Richardson, of Heaton Cottage, and the case was a traumatic one, being the result of a torn wound in the flank. I well remember nearly fighting the poor wretch to death in my endeavour to get a dose of physic down his throat. I gave him large doses of calomel and tartar emetic twice a day. This treatment was tried often afterwards without success, and indeed both before and after I had bled, blistered, physicked, applied sheep-

skins, given belladonna, &c., &c.; but die they would, and did. I heard of many cases being cured by homœopathy; and my next case fell a victim to that system, although he lived about a month, and I was in hopes at one time that he would have got over it. I was, however, now convinced that, if tetanus was to be cured, it must be by quiet means, and that no system would succeed where the patient's already overworked nervous system was continually excited with the administration of drugs, the irritation of blisters, or the continual necessity of going about him in any way. About that time I had the good fortune to meet with the late Mr. Poet, then veterinary surgeon to the 1st Dragoon Guards, and in the course of conversation on one subject and another, tetanus was discussed, and he told me that he had succeeded in saving his last six cases by the use of hydrocyanic acid. I thought, even if I could have fifty per cent. of this amount of success, it would be a great advantage over mine; and I determined to try it. My first case was a gray gig mare, about ten years old, the property of Messrs. Jessop, steel merchants, Dale Street, Manchester. This mare had broken her knees, and they were treating her themselves, and finding that she could not feed, nor get her head to the bucket to drink, I was sent for. I found her with all the symptoms of acute traumatic tetanus; the jaws would open only about half an inch; she was rigid all over, and fearfully excited. The knees had rather a dry, inflamed, angry look, as if some astringent had been used to them. She was in an excellent isolated loose box, and I ordered her to be kept as quiet as possible, and that the box was not to be entered more than twice a day, and entry was to be made as quietly as possible, and every movement of the man in attendance was to be made slowly and softly, so that all cause of shock or fear should be avoided. She was ordered bran mashes with a little corn and carrots, with a fair allowance of hay, and a bucket of clean cold water hung up for her to drink when she liked. The knees were poulticed, and half a drachm of the hydrocyanic acid given night and morning, by means of a piece of gas-pipe about fifteen inches long. The manner of using this pipe was as follows:—A cork being put in one end, a little water was first poured in, then the acid, and, lastly, the tube was filled nearly full of water; the head was then taken hold of and carefully lifted up as high as it could be got without distress to the animal, while the tube was introduced into the mouth, and when far enough in the cork was removed: the fluid disappeared at once from atmospheric pressure. I now use another and more scientific tube, which I have placed on the table for your inspection. It was invented and presented to me by my friend Mr. Brown, veterinary surgeon, Oldham. This treatment was continued for a few days before any marked change took place; but the improvement after that was gradual and satisfactory. The jaws had become a little more open; she was not so easily frightened. The paroxysms, when she did have them, were less severe, and the body was altogether less rigid. She fed well, and greedily, and the bowels were acted on by the bran and carrots apparently as much as if she had been in a state of health. The knees were now dressed with arnica

lotion and healing ointment. They looked healthy, and had lost entirely the dry, inflamed appearance they had at first. About the fourteenth day she began to lie down, and, to my great satisfaction, was able to get up without assistance. The treatment was continued for about a month, when she was quite well, and at work shortly after, and has continued so up to the present time. My second case was a boat horse, the property of Messrs. Henworthy and Co., carriers, Manchester. It was also a traumatic one, being due to a wound in the flank; it was not so acute at any time as the first case, but it took about the same time to cure. Number three was a large waggon horse, the property of Messrs. Charles Faulkner and Co., carriers of this city, and was caused by a large sore on the back. I see that he was admitted to my infirmary on the 3rd of December, 1859. He had the same treatment, and was right in about a month. He alarmed me many a time with getting down; his legs used to be stretched out like pillars, and appeared perfectly rigid; we had to get a lot of men to help him to get up on several occasions. He has done a deal of work since then, and may be seen in the chains of a lurry in Water Street, any morning at nine o'clock. Case number four was an idiopathic—a large gray horse belonging to Mr. Edwards, the proprietor of Wombwell's Menagerie; he was admitted in the month of April, 1860, and had the same treatment; and it was about a month before he had quite recovered. My fifth case was traumatic, and terminated fatally. It was a beautiful high-bred brown mare, the property of G. Andrews, Esq., of Compstale Bridge; she had received a prick in the belly in hunting; the groom, not thinking there was very much wrong with her, had her to himself for the first few days, and when I was called in she was very bad. My treatment seemed to be of no use; and she died on the morning after I had first seen her. My first visit was on the 10th of November, 1860, and she died on the 12th. Number six belonged to the Manchester City Omnibus Company, and was a gray horse, well bred, and five years old. He had run away with his previous owner, broken his knees and wounded himself about the hind fetlock-joints, and other parts of the body. He entered my place on the 16th of November, 1860, and left cured on the 10th of December. Number seven was a dark bay cob about fourteen hands high, the property of Charles Clark, of this city; he had run away in the carriage and injured one of his fore legs to a fearful extent, the metacarpal bone being laid bare for several inches. In the course of his being treated for this wound he took tetanus; but the acid and quietness had the desired effect, and he was free from tetanic spasms for about eighteen days. Number eight was a large and very beautiful black horse, the property of Mr. Greenwood, of Manchester, and kept by him for funeral work. The case was idiopathic, and yielded to the same treatment in about a month. My ninth case was a very small child's pony, the property of Arthur Lyon, Esq., of Bowden. The groom, a very knowing fellow, could not make out what was wrong, and sent me word: he thought he must have hurt his back, as he was very stiff across the loins, and could not eat.

He was put into a box some distance from the other horses, had ten drops of the acid three times a day, and was all right again in about a month. This case was idiopathic, and due, in my opinion, to exposure in the field in the month of January last, when it was very cold. My tenth and last case was an old, well-bred brood mare, the property of William Joynson, Esq., of Sale; it also occurred in the month of January last, was idiopathic, and due to exposure and poverty. The treatment in this instance was not so successful; she was under its influence for about a fortnight, and was certainly no better, but by no means much worse, when the owner, fancying she was not in foal, and not having much hope of recovery held out by me, thought it best to have her destroyed. In addition to these cases I may mention that, while my son was attending the Veterinary College at Alfort, in France, a case of idiopathic tetanus was under treatment there, and it having got to the ears of Professor Bouley that I had been unusually successful in the treatment of this disease, he sent for my son and gave him charge of the case. He carried the key of the box in his pocket, and only allowed it to be entered twice a day by the groom; and the acid was given as before described, and the horse cured in a month, to the surprise of the authorities at Alfort. As the cases begin to improve, I may mention that I feed liberally on boiled barley, and give plenty of grass in summer, and carrots in winter. I was taught to give lots of physic in this disease; and indeed most veterinary authorities of the present day set great weight on its usefulness; still, to me it has never been of the slightest service. I have often had the bowels well opened and purged without a shadow of relief to the poor patient; on the contrary, his sufferings have been increased by the irritating effect of the aloes on the nervous coat of the bowels. In my humble opinion the true principles by which to treat this disease are, to remove the patient as far as possible from all causes of excitement, let not even the light shine on him; give him a sedative such as I have used, or a better if it can be found; but it must be easily administered, or it will do more harm than good, and you will, I am convinced, meet with as large an amount of success and gratification as fell to my late friend Mr. Poet, or myself.

Such, Mr. President and Gentlemen, are the few remarks I promised to make on my treatment of this formidable and most fatal malady, and I trust you will permit me to add that I have necessarily refrained from details which, while of no great practical utility, would but have embarrassed my paper and entrenched upon the brief space of time allotted for interesting discussion. I have every reason to be grateful for the attention and kind consideration with which you have received these remarks, and for which I beg to thank you most sincerely.

Veterinary Jurisprudence.

BODMIN GUILDHALL.—FRIDAY.

Before the MAYOR (J. Oke, Esq.), Captain HAMLEY, R.N., Lieut. LIDDELL, R.N., J. WARD, and H. MUDGE, Esqs.

BARBAROUS CRUELTY TO ANIMALS.

JOHN PALMER YEO was charged with cruelty to two dogs, and with assaulting Mr. William Brabyn, of Lanivet, on the 18th of June. Mr. Preston Wallis appeared for the defence.

It appeared from the evidence that on the day in question Mr. Brabyn was in Back Street, when he saw the defendant setting two dogs to fight. On his interfering, and requesting that the dogs might be separated, Yeo struck him on the chest.—The magistrates thought the evidence was not sufficiently strong, but fined the defendant 10s. and the costs for the assault.

Richard Yeo, a brother of the defendant in the last case, was summoned by the Rev. C. M. E. Collins, of Trewardale, for cruelty to a colt. Mr. J. B. Collins appeared for the prosecution, and Mr. Preston Wallis for the defence.

From the opening address of *Mr. Collins*, it appeared that the defendant's brother, John Yeo, was a horse-trainer, residing at Bodmin, and that in May a colt was placed in his hands by complainant for the purpose of being trained. That the defendant, who is either a partner or in the employ of his brother John, had treated the colt with such great cruelty that the complainant felt bound, on public grounds, to prosecute him. Mr. Collins then called

Mr. J. Mudge, veterinary surgeon, who said—My place of business is in Back Street. Yeo's stable is also in that street. On Monday, the 30th of May, I saw at the railway wharf Richard Yeo, riding a colt. There were many people collected. He was spurring and beating the colt violently. I could hear the lashes from my shop—fifty paces distant. It was in the latter part of the afternoon. The treatment was not such as was necessary to train a colt. It was barbarous and cruel. The sides of the colt were spurred a good deal. There were places stripped and bleeding as large as my hand. The flanks were stripped, and the further side was much rubbed or beaten. I have seen Mr. Collins's horse since, and believe it to be the same that Yeo was ill-using.

Cross-examined by *Mr. Wallis*.—It was a bay horse, with black points. Defendant's flogging it called my attention on the day in question. I could hear the flogging at a distance of fifty paces. There were several persons there, but I don't know who they all were. The gelding had what is called a broom tail. It did not reach as far as the hocks. The horse was Mr. Collins's. If Mr. Collins had not summoned the defendant for the cruelty, I should have done so. Yeo had on spurs, and had a straight jockey whip. He was beating the colt under the belly and on the fore legs, thighs, and flanks. The wounds could not have been inflicted in any other

way than by whip or spurs. I am not very friendly with the Yeos. I do not offer them insult in the street. I am not on bad terms with them. I don't know that Yeo is a veterinary surgeon.

Jonathan Maker said: I keep a blacksmith's shop at the bottom of Back Street. I recollect Yeo's riding a horse there about a month since. He had trouble with it. He was whipping and spurring it. He whipped it over the hips, shoulders, and head. There were marks on the off leg, which appeared to be whip marks. I should not think the treatment necessary for training the horse. There were several people there. I saw Mr. Collins's horse in Oliver's stable on Midsummer day, and believe it to be the same. There were dry wounds on it then.

Cross-examined by *Mr. Wallis*.—It was on a Monday I saw Yeo riding the horse. I believe it was the 30th May. Mr. Mudge was there. The horse was ill-treated. Yeo had trouble with it. He struck it on the head. Mr. Collins asked me to go and see the horse on the 25th of June. I believe it to be the same horse. The tail did not come below the hocks. Yeo was riding a horse, not a mare.

William Phillips said: I recollect the occasion in question. I was in Maker's shop. I saw Yeo riding the horse. He was whipping and spurring it. It was kicking, and he had trouble with it. The sides were bleeding. Yeo was trying to get it up Chapel Lane. After some time it went up out of our sight. I saw the same horse on the day after Midsummer day.

Cross-examined by *Mr. Wallis*.—Yeo was riding the horse to and fro. It was troublesome. I think it was ill-treated. It was a dark bay horse. The tail did not reach to the hocks. It was on a Monday; about a month ago.

William Harvey said—On the 30th May I saw young Yeo with a colt coming up Chapel Lane. He was spurring it tremendously. He then went down the lane, and got off the horse, and beat it about the head. He beat it savagely. I saw six or seven blows. I could hear the sound, though I was at the top of the lane, and am also rather deaf. I was obliged to turn away, for I could not look any longer. I saw a horse in Oliver's stable, and believe it to be the same.

Cross-examined by *Mr. Wallis*.—It was on a Monday or Tuesday. I don't think the horse was giving Yeo trouble. I saw him get off the horse and beat it. It was with its hind part against the wall when he got off. I heard the horse was in Oliver's stable, and went down to see it. The tail reached not quite to the hock.

John Truscott said: I am a carpenter. My shop is in Chapel Lane. I recollect about a month since seeing Richard Yeo there with a horse. It was near Captain Alms's door. He got off the horse and beat it with a stick about the head. Mr. Harvey was there. I thought the treatment was unnecessary. I considered it cruel treatment. Yeo had a stick.

Cross-examined by *Mr. Wallis*: I did not see Yeo before he got off. It was a bay horse.

George H. Lamb said: I am a veterinary surgeon, living at Liskeard. I have been attending Mr. Collins's horse. I saw it first after it had been ill-treated on the 7th of June. It was then at Trewardale. The sight of the near eye was gone. There was a blemish on the outer side of the off knee, and another on the side of the off hock. The sides were cut up a good deal, apparently by spurs. The off side was cut with a whip or stick. There was a welt on one of the thighs. The hair was gone from one pin, and also from the thighs, evidently from rubbing against a wall. I have been treating the horse ever since. The eye will be lost, in consequence of external injury of some sort. That injury might have been caused by blows. When I first saw the horse it was suffering much, and standing on three legs only. It was much emaciated. I have seen it to-day. I was in Yeo's stable on the 3rd of June, but did not see it. I have seen it there before that.

Cross-examined by *Mr. Wallis*.—I remonstrated with Yeo for not having consulted me, as Mr. Collins was away. The wounds were caused by a whip or a stick. The injury to the eye might have been caused by the horse falling on a stone or nail. I have also treated the horse for lameness. The state in which I have described it could not have been caused by that lameness.

Mr. Wallis addressed the magistrates for the defence, and called

John Palmer Yeo, who said: On the 4th of April I took Mr. Collins's horse to train. About the same time I had one from Mr. Paul. They were both geldings, and of the same colour. Mr. Collins's horse had been in the hands of a trainer last year. The fourth time of riding it commenced kicking, and smashed my window. Two days after it became lame, and was laid up for three weeks. Mr. Lamb attended it. I went to Trewardale on the 27th of May with the horse. Mr. Collins mounted and rode it, and so did his son, and Jones, his groom. Jones said he was pleased with it. Mr. Collins intended riding the horse to Bodmin, and got on it for that purpose. When he got down to the gate, he was not willing to go to Bodmin, but afterwards went on. The horse kicked several times that day whilst Mr. Collins was with me. It was not saddled after that day until Monday, at four o'clock, when I rode it around the yard. It was kicking all the time. At last it threw itself over with me, and, in falling, knocked its eye against the corner of the wall. Harvey, who assists me, then rode the horse around the yard, and it kicked itself over again. My brother Richard then mounted, and rode it round the yard. It was kicking all the time. Its hips, hocks, legs, and eye were injured that afternoon. The horse did not go out of the yard saddled that day. Mr. Paul's horse was stubborn, would kick, and was very sulky. I succeeded in curing him, principally by whip and spurs. Mr. Collins's horse was never ridden after Monday, the 30th, and then not out of my yard. On Monday afternoon my brother rode Mr. Paul's horse.

Cross-examined by *Mr. Collins*.—Mr. Collins's horse was taken on the 4th of April and returned on the 4th of June. It was quiet in the stable. I went to Trewardale on the 27th of May to make

arrangements for taking it home. It was not fit for a quiet or a nervous gentleman. It was only fit for a gentleman with a good nerve. The horse was not finished with, but I took it home at Mr. Collins's request. I told him a gentleman eighty years old might ride it at a walking pace. I was glad to get it out of my hands. I did say to Mr. Collins it had not kicked for ten days; that was not true, as it had kicked on going out there that day.

Robert Harvey said: I sometimes work at Yeo's stables. I recollect the two geldings—Mr. Collins's and Mr. Paul's. John Yeo rode it around the yard on the 13th of May. It kicked very much, threw itself over on its head, and cut its eye. I then rode it. It kicked all the time, and threw itself over again. Richard Yeo rode Mr. Paul's horse the same afternoon. Mr. Paul's horse was sulky, but the whip would conquer it. Mr. Collins's horse was not taken out saddled on Monday, the 30th of May.

Cross-examined by Mr. Collins.—I know it was Monday because the horse threw me off. It had thrown me off before. It threw John Yeo the same day. I go to Yeo's frequently. I ride horses for him. I recollect your sending for me, but did not go. The horses were the same height.

Henry Marshall said: I go to Yeo's sometimes. I recollect Monday, the 30th of May. I saw John Yeo mount Mr. Collins's horse, and ride him around the yard. It kicked, and after a time threw itself over and fell with its eye against the wall. In rising it kicked John Yeo. John Yeo cut off a piece of its tail. Richard Yeo rode Paul's horse. It was stubborn, and required whipping. I was in the stable in the forenoon and in the afternoon.

Cross-examined by Mr. Collins.—It was about four o'clock when John Yeo rode the horse round the yard. Paul's horse is stubborn, stops, kicks, and won't go unless whipped.

John Bray said: I saw Richard Yeo with Mr. Paul's horse in Chapel Lane, on the 30th of May, between three and four o'clock. He was leading it, and said it had thrown him. I rode it home. I have ridden it before. It required the whip.

Cross-examined by Mr. Collins.—I saw Richard Yeo out with Paul's horse. I have ridden it. I know it was on that day Richard Yeo rode it, because I heard there would be mayor's work about Mr. Collins's horse. Mr. Collins's horse would kick when urged to a trot. I worked for Yeo, and rode the horses for him.

The defendant was fined 40s. and costs; or in default of payment, ordered to be committed for a month, with hard labour.

MISCELLANEA.

MANURING FROM THE AIR.

THERE are, however, other methods by which land may be manured than the visible substances placed upon it by the farmer. Most persons are not aware that soils are able to imbibe a vast amount of manure from the atmosphere, if put

in a proper condition. They will absorb from the air nitrogen in the form of ammonia and nitric acid, and the atmosphere itself gives to the land every year in the form of rain a very large quantity of these substances. This at once raises the subject of draining, for if land is clogged up with water to the surface, it is unable to benefit by the valuable manures which descend in the rain, which, instead of soaking through the ground, is compelled to run off the surface without giving half their manuring value to the crops. Again, undrained land is unable to extract the manures from the air, for this process is only carried on by reason of its porosity, and therefore, if the water cannot pass readily away, the ground remains full, the air is unable to pass among it, and thus it is unable to derive any benefit from it.—*Hibberd's Gardener's Magazine.*

OBITUARY.

It is with sincere regret that we record the death of Mr. John Ellis, M.R.C.V.S., of Liverpool. He died on the 22nd September, at his residence, Hale Bank, after a very short illness, aged 53. His diploma bears date August 9th, 1832.

Mr. Ellis was among those of whom in early life we entertained high hopes. Nor have these been blighted; but he has been cut down while yet in full maturity, and when, as we think, still richer fruit, ripened by age, might have been obtained had he been spared. How true is the simile of the prophet, Man is as grass, or the flower of the field, which may be smitten by the rude blast as it passes over, or withered by the scorching sun-ray! But if escaping these, at eventide he will be cut down by the inexorable mower—Death.

“ Thus friend after friend departs—
Who has not lost a friend ?”

In addition to the above, we have likewise to record the death of Mr. Wm. Cook, M.R.C.V.S., Willesborough, Kent, which took place on the 22nd September, after a very short illness. His diploma is dated May 24th, 1853.

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OPENING OF THE SESSION OF THE ROYAL
VETERINARY COLLEGE.

INTRODUCTORY ADDRESS BY PROFESSOR SPOONER.

It is a time-honoured custom to commence the session of lectures in this theatre with a few general remarks which may serve to introduce new students to the course which they have to follow, and to impress the old as well as the new students with their duties and responsibilities both to themselves, to the institution which affords them its best instruction, and to the profession which many, if not all of them, we hope, will one day adorn. Although these inaugural addresses are so frequently repeated, yet does it seem that there is something fresh to be said to each succeeding generation of students, something that grows out of the progress of the age; or, as we may say, out of the advancing necessities of the time; for we live in a very "fast" period of the world's history. The word "fast" has different interpretations. In one sense, it means a recklessness of health, pocket, reputation, and appearances; and to a youth with this spirit within him, all those who are doing their work painstakingly, prosecuting their studies persistently, valuing their hours, lengthening their days, and limiting their appetites, are contemptuously looked upon as plodders. But this is only the bad and false sense of the word, for the persons comprehended under it are generally slow in all the grave business of life; slow in work, slow in study, slow in acquire-

ment ; and often, if they do well at last, they are a great deal slower than others in taking the places their talents ought earlier to have assigned to them. Never, therefore, be laughed out of plodding by any "fast" individual of this kind, for you may be sure that with all his showy colours he is but a snail so far as progress on the right road is concerned. But there is a true sense of the word "fast ;" and every calling in life is more and more subject, year by year, to be brought under its conditions. The meaning, as I would apply it, is, that every profession, with each season that rolls over, has to do more for the community, to stand firmer in common sense, to be better equipped in education, to pay more rigorous attention to science, and to be more amenable to public opinion. This is especially the case with the newer professions like our own. The law and human medicine, even were they not competent for these things, could at least plead a high antiquity ; and the public, holding these professions in high esteem, would allow this plea of justification, to a very great extent. But when you come to a new calling like ours, a new creation, as it were, of art and science, only dating back, in this country, about three quarters of a century, when this institution was first founded, it obviously has no justification but its efficiency and utility to the existing wants of the age. The questions, Who are you ? and What are you ? stare it in the face, and sheer public service is its only answer. So it is that we are obliged, session after session, to require more of our students. Human medicine has been and is doing the same, though it has such long annals to excuse it, and so many laurels on its brow ; and we, who are comparatively but of yesterday, and who to some extent have our public place yet to come, cannot expect to escape from the same conditions.

The first thing that we are obliged to ask of you is so much previous training, so much scholastic education, as is implied in writing correctly to dictation, and being fairly versed in arithmetic. This is not asking much of our students as a preliminary to entering upon their studies here. Yet, perchance, important results are involved in this exaction, and it will, I feel assured, be viewed by all as a step in the right direction. I have said already that the profession, the active study of which some of my young friends before me are this day for the first time about to enter upon, depends upon itself—that is, its present and future action—more than upon its illustrious ancestors for the social consideration which it shall enjoy ; and I hesitate not to assert,

that the first beginning of all social estimation is a sound English education, and if it extends to the classics so much the better. The longer you live the more you will discover that if a man can write correctly and speak well, provided he possesses the other qualifications necessary to success in life, it will be impossible long to exclude him from the position which a gentleman ought to occupy. Of how great importance this will be to you in your career through life it would be superfluous for me to dwell upon; I may, however, state that it will inevitably lead to your social elevation in the scale of society. But again, this amount of preliminary learning which we ask of you, and which on the one hand points you exactly, according to its cultivation, to your place in society, on the other introduces you definitely into the mysteries of art and science. For the first difference you will discover, between the unscientific man and the man of science, is a difference of language. In the case of science, distinct appearances have distinct names, and can, therefore, be described exactly by the terms that belong to them, and the description can be transmitted in writings and books to distant places and future times; and each person who is in the science will know precisely what the words of the description mean. Nothing of this kind is possible without these terms and the knowledge of them. For instance, to take an example in pathology, suppose that an ulcer is to be characterised, and that the person who has the task of describing it is not master of the scientific vocabulary, and does not know how to apply its words to the facts before him; in that case all he can say is, that there is a "sore place" on the surface, wherever it may be. But many morbid conditions are attended with "sore places," and therefore this description gives you no information as to whether there is a breach of the surface by abrasion or by the more hidden process of ulceration. Yet two professional men acquainted with terms will instantly characterise the ulcer as correctly as if they had possessed a correct painting of it; and hence the one can communicate the facts of the case to the other. You can apply this in a thousand other instances, and you will find how widely the use of scientific—that is to say, well-chosen and definite—language ranges, and how great are its results to accurate knowledge, and consequently to the practice of your art. It is true that current English will not carry you through the knowledge and use of the scientific terms of anatomy, physiology, and chemistry, and the other sciences in which you will be examined for your diploma; for the most of these terms are derived from Latin and Greek, the

preliminary knowledge of which, although we do not at present require it of you, would doubtless be of material assistance in your studies. But then it is to be borne in mind, that the habit of regarding words definitely, of attention to correct spelling, of carefully minding grammatical construction—in short, of studying the language which you write and utter, will render it comparatively easy for you to fix in your memory the terms of science, and to apply them accurately, according to their usage, in the works from which much of your knowledge will be derived. I therefore advise you, in all your readings to keep your minds alive to the sentences and the composition of your author, because this will lead to the results I have particularised, both social and scientific.

Moreover, when you enter the profession, you are any of you liable to become public men for a time on important occasions—for instance, in the witness-box, when causes pertaining to the soundness and value of horses are tried—and in such an event, you may either lessen or improve your standing, by the quality of what comes out of your mouth. And bear in mind that no one can be a correct speaker who is an incorrect writer of his mother tongue. Furthermore, we, who are getting old in the service of our profession, cannot but look forward to a time when some of you, perchance some of the youngest amongst you, may be commissioned to adorn the profession with works that shall worthily carry on the labours of your predecessors; we heartily wish you then to stand well and firmly upon the sure basis of a sound education.

It is my duty to announce to you that after much care and thought for your benefit and the progress of the profession, the Governors of the College have determined, by gradual stages as to its requirements, to constitute an educational “matriculation,” such as I have been endeavouring to delineate. Passing now onwards to your studies in the College, we have first to invite you to make an intimate acquaintance with the structure, functions, and habits of all your patients—the domestic animals. Your occupation in the profession will consist chiefly in forming a correct opinion and ministering to the alleviation of their diseases, a large portion of which attack the internal organs of the body; and hence no mere surface knowledge will answer your purpose. You must resort to anatomy to enable you to follow disease wherever it may appear. The possession of a knowledge of anatomy is indeed the first and most striking difference between the scientific regard of your subject and its vulgar

and superficial apprehension. A man's knowledge of disease, physically speaking, is deep or shallow, according to the fineness of that knowledge. Without anatomy the mind has no materials to work upon in that faculty of thought which should actively accompany every case under treatment. The first requisite, then, the very key by which you open the door of veterinary science, by which you go inwards, so to speak, and away from superficiality and common ignorance, is diligent dissection. I cannot, therefore, too earnestly impress upon you the importance of your duties in the dissecting-room. The field of knowledge which is there thrown open to you is immense, and at first sight its very amplitude may discourage you. But by patient perseverance day after day, and week after week, you will gradually get accustomed to the multiplicity of the objects before you; a fresh resource of memory will be opened up, enabling you to retain the particulars which your scalpel discovers; a pleasure of discovery will add its zest to your labours, and you will be enabled to count your gains of knowledge, and to find that in a little time they amount to no inconsiderable quantity. Every lecture on anatomy to which you listen in this theatre, every demonstration, will be instructive to you in proportion to your own personal labours in the dissecting-room, and therefore we cannot over-estimate the importance of dissection; we cannot be wrong in regarding anatomy as the scientific basis of your knowledge of the veterinary art.

I would warn you, however, that the dissecting-room is a place where the moral force of the student is tried by the circumstance that dissection is a personal service, and hence your individual industry in the College primarily depends upon your steadiness at the dissecting-table. In the lectures you are passive; in the practice of the College you are observers, or lookers-on; but dissection you must do for yourselves. So it is that those pupils who are of weak character and industry break down in the dissecting-room, if anywhere, and make it an arena for gossip and irrelevant amusement. I would therefore urgently request all those who are determined to be diligent not to tolerate any play or distraction in a place which ought to be studiously consecrated to the principles and beginnings of their professional life. The practical pursuit of anatomy, although it may have its disagreeables in dealing with the decomposing parts of the animal organism, yet bear in mind it is a searching after truth, and as truth is pure and clear, so anatomical science, as a principal minister to the grand art of healing,

has an honour and a dignity which the more they are respected by the student the more profoundly will his best powers be attached to its study. Guard well, then, the diligence and the decencies of the dissecting-room, and you will find that all your other collegiate pursuits will be advantaged from the correct bearings of this foundation.

Anatomy, in the state in which it is now presented to us, embodies the accumulated industry and explorations of many centuries. In fact, it has been slowly growing ever since the ages of science first dawned upon the world. How long ago that may be I am afraid to speculate upon, for as the high antiquity of man is substantiated the ancient existence of all the great sciences of observation may also be presupposed. At any rate, since the time of the Egyptians and the Greeks anatomy has flourished. Perhaps the frequent sacrifices of animals in the temples of the gods led, in the first instance, to observations of their organism, and lighted up that first torch of curiosity which is the earliest guide to the vast subterranean vaults where are buried the treasures of science. Be this as it may, it is instructive to notice that the science of anatomy has, I repeat, taken hundreds of years to attain its present accuracy and completeness. And why has it taken this time? I answer, because the same laws guide, the same success attends, the same conditions accompany the work and will of man as a whole, as those which exist in and control the career of a single individual. And what is this law? Evidently this—that intensity of curiosity, intensity of pursuit, and intensity of work are only gained by time, just as it requires time, according to the weight of the train, for the locomotive to get up her speed; and it has required all these centuries to waken and to fire us up into the intensity wherewith anatomy has been cultivated during the last fifty years. If you look to the works of the great Aristotle, you will find that he has written on anatomy, but his remarks are often poor and casual as compared to those which we meet with in the works of modern authors. He and all the people of the age in which he lived were evidently only just awakening to the light of science; yawning and stretching to the light, but not walking in it. They were satisfied with a little knowledge, and began to theorise from that little at once, which is a sure sign of being tired of searching after facts; yet they bequeathed the results of their curiosity, their facts and their rate of progress, to the next ages, and all these have gone on gradually increasing; but it is only in modern times that we are beginning to taste the fuller pleasure, and to appreciate the immensity and velocity

of the sciences. So you see that if the world is a very old world, as geology shows; if its surface required vast periods for the changes it has undergone before it became fit for human habitation, so the human mind is subject to the same divine laws; and even science, or the knowledge of facts, grows upon the same gradual, patient, but sure principles. "Sound knowledge," says the Rev. Edwin Sidney, "seldom takes a great leap when it first comes amongst us; it enters by slow and sure movements. The light of genuine science first appears as a spark which subsequently is fanned by industry into a flame; false speculations, on the contrary, are mostly a blaze of straw." Yet, gentlemen, observe that the sooner you awaken personally to your labours, the more rapid and entire your acquisitions will be. For if you can put on intensity of *will*, you can learn in one session more, and more brightly, than any dawdling and lethargic mind can learn in its whole existence.

Firstly, you have to be acquainted with descriptive anatomy—that is to say, with the parts, and the relative position of the parts, of the animals you dissect. By this means you learn the mechanical and physical structure of the organization, the associated forms of the bones and muscles, blood-vessels, and nerves, and all those parts more or less subject to the volition of animal life, also the forms and connection of the viscera, parts destined to supply and elaborate the materials necessary for the repair, perpetuation, and reproduction of the organism, and ministering to instincts and feelings which may be said to be the forces of animal intelligence. Now, the more you are at home in your knowledge of anatomy, the more readily can you trace diseases to their seat, and the better will be your diagnosis; that is to say, your accurate distinction of one disease from another. For disease, gentlemen, is for the most part anatomical, by which I mean that some special organ is generally primarily attacked. You ought, in the first place, to be aware of this fact; and in the second, to look out for those signs which indicate the locality of the suffering organ. Obviously your competency to exercise such a faculty depends upon your anatomical knowledge. Moreover, you will require the same knowledge in the practice of surgery; for often in an operation some nerve, or blood-vessel, or vital organ, requires to be skilfully avoided by your knife, and you cannot effect this unless anatomy has taught you where they are situated.

Besides descriptive anatomy, histology or structural anatomy must claim some share of your attention, as teaching you the more minute constitution of the organism. This branch of

knowledge has been developed by slow degrees, and may be justly said to be a child of the present age just beaming forth into manhood. It has mainly depended for its advancement upon the discovery and improvement of the microscope. The study of histology is a natural consequence of the ardent pursuit and progress of anatomical knowledge; for when all the larger parts of the organization have been examined and described, when the relative position of the muscles and the ramifications of vessels and nerves have been accurately determined, the next thing is to inquire, by the eye and the microscope, what is the constitution of them—what the minute and intimate parts of their structure are, and, in short, of what ultimate visible atoms they are composed. Roundly speaking, we may say that the frames of all organic beings consist primarily of so many infinitesimal cells, or organic beads, ranged and strung by the vital principle into all the varied forms that constitute the bodies of animals, and of man, of course. Between the primordial cell and the tissue that is made of such cells there are numerous stages of transformation, aggregation, and composition, affording a vast field of intermediate research, on the border of which you may stand, as on the shore of a sea, and learn some little about it without departing from the *terra firma* of more practical science. It is useful for you to study this branch of science, in order that your thoughts may not be too limited in a calling that depends for much of its success upon intuition and the free play of the mental faculties. In short, though many things may look useless to us in practice; this is their justification, that they encourage, enfranchise, and embolden the mind, exercise it gymnastically, and so fit it to overcome difficulties, and fill it with skilful resources. This justification applies very pertinently to a microscopic examination of the fluid constituents of the body, of which, without a minute investigation by vision assisted by art, almost nothing could be known. For instance, take the blood. Common observation reveals nothing more than that the blood is a variably red fluid, which, when drawn from the body, gradually coagulates, dividing into a clot and a limpid fluid called serum, and that the clot on its upper surface has a yellow appearance, while its lower part assumes a red hue. There is not much to reason upon here. These observed facts are coarse and scanty; and as I may say, they merely open to us the gate of further inquiry. The microscope, however, comes and exhibits to us a wondrous fluid mechanism, all the parts of which are connected together by vital attractions, and have their necessary functions. It shows to the eye the preva-

lence of certain elements in healthy blood, and detects its deterioration in disease. So likewise every other fluid yields up its visual secrets to the same pursuit of science, and you are enabled ultimately to gain something like a view of the many-patterned structure which the life of the being inhabits. When you have got to this stage of investigation, without having spent too much time upon it, I think you will all admit that you must be very different beings in mind, in insight, and in capacity of veterinary thought to the mere charlatan who only knows the animal he professes to treat by its external contour. Such a one is only fitted to wade and puddle in the shallow and turbid stream of imitation, and can never hope to enjoy the luxury of swimming in the deeper parts of the ocean of knowledge.

The fact is that self-respect constitutes a great part of the success of the practice of any profession, or of any worthy calling in life; and knowledge of this nature, knowledge of the works of the Creator, cannot but ennoble the consciousness of the being who possesses it, and make him do better, and dare more to advance the good of his calling and the happiness of his fellows. Therefore I say to you, while you should not make a hobby of co-relative branches of science, to the neglect of the more practical pursuits of your profession, you are not to despise them merely because you do not see their immediate bearing upon everyday practice.

Now, after having by anatomical research made yourselves acquainted with the animal organism, taken it to pieces and reconstructed it in your own knowledge, the mind is inevitably led to ask what is the use of this wondrous mechanism, not only in its entirety, but also in the various parts of which it is made up? The answer to this question introduces us to another science—physiology—which, even when restricted in its application to animal life, is a wide and also a most speculative sphere of study to enter upon; by its practical utility, however, to the healing art, and (inasmuch as our patients are mute) I should say more especially to the veterinary branch of that art, can scarcely be overrated, for without a knowledge of the functions of organs how can we be expected to be able to understand and correctly to minister to their diseases? Suppose, for instance, we were unacquainted with the contractile action of the muscles and their antagonistic forces: many cases of lameness and distortions in our patients, which by our physiological knowledge we can now readily explain, must ever remain a mystery. Anatomy and physiology are so closely interwoven and dependent on each other, that they may justly be termed twin sisters, and it is

fortunate for us that the search after the one stirs up the mental faculties to the exercise of lofty and noble reflections of the other. A complete physiology would describe physical health in all its orbits and revolutions, and as a brilliant because a living fact. Therefore physiology, in proportion as it is attained, is the life of anatomy, and as such you will readily discern, from what I have said, that it also must constitute a most important branch of your studies in this institution.

Then there is pathology, which embraces morbid anatomy, and also the physiology or doctrine of disease; and let me add, to complete the definition, the rational connection of the appearances after death with the symptoms which had existed during life. This is an important subject, and I earnestly impress upon you to seize all the occasions that present themselves to dissect for disease, and thus to trace the physical alterations that have been produced by inflammation and other morbid agencies upon the organization. You will not find it very difficult to add this interesting study and experience to the subjects which have already engaged our attention; for once in possession of some knowledge of anatomy and physiology, the morbid alterations, as they will be pointed out to you by your teachers, will easily strike your minds, will connect themselves with the cases in which these results have occurred, and with the symptoms of those cases; and thus you will have the best and most complete view that can be afforded of the proximate nature of disease. You will find, however, that we do not always treat diseases strictly according to pathological science, as treatment has its own field of experience; yet is pathology most valuable, as indicating the precise seats of maladies and their nature. It gives us specific, or, in other words, accurate knowledge, and such knowledge is available for practical skill. Besides which, as I had occasion before to remark concerning physiology, it imparts to the mind power over the whole subject of disease, and introduces it deeply and rightfully to the very sphere and element of our calling.

We now come to the more directly practical part of our instruction, as you will observe it from day to day in the infirmary of the College; and I need hardly tell you that it is your bounden duty to attend with the utmost diligence to our daily rounds and examinations among our patients. I would advise you to take minutes of each case, and to form a record of any remarks that may be made by the professors during its progress, and also to note down any impressions which from time to time may suggest themselves to your own minds,

for you will find that the habit of writing down cases will give you an earnest interest about them, and an accurate comprehension of the symptoms and treatment. The memory is materially assisted and rapidly improved by such registrations of facts, and when a case is read over in its completeness, it is more easy to see the bearings of the symptoms from the beginning, and to consider the means that have been employed for the relief of the patient. There is so much necessarily to be done in this main department of veterinary medicine, so many improvements to be made by time, and study, and casual suggestion, that even as students you may hope, almost at once, not only to learn, but also to contribute to the general stock of practical knowledge in your profession. Practice, gentlemen, if we must confess it, though success in it is our main aim and our greatest triumph, is very peculiarly situated in its relations to science and empiricism—nay, sometimes the best practice is the most empirical; but then that is precisely a reason, if we are forced to be empirical in this, why we should be scientific in other particulars. Let me explain myself to avoid misapprehension. A case comes before us betokening internal disease, and a certain medicinal treatment is suggested on the mere ground of previous experience, and not from any mathematical certainty or reasoning upon the absolute principles of science as to the *modus operandi* of such medicine, for the fact is that drugs are frequently used by us simply because they have been found to answer the end in view, and for no other reason. Now this is empiricism; but then science stands round it to make it safe—that is to say, to prevent us from doing too much, and to teach us that if we cannot cure we should not kill. Science also tells us that we must make our empiricism large enough to cover the whole field of art, and if we are obliged to borrow remedies from the instincts of animals sometimes, and from savage tribes which have traditions of the virtues of drugs, and from quacks and nostrum vendors, let us sweeten this bitter pill, and complete the circle by adopting all the means that are good and useful, and attested as pointing to cures; for the bad name—the evil and dishonesty of empiricism—ought rather to attach to the men who take up some narrow and insufficient mode of practice, and obstinately refuse to look at everything else, than to those who make it their sole principle to be guided by the success of the treatment of their professional brethren generally. To the latter class, which embraces all the widest observers and the most profound thinkers, I would have you belong during your walks in the

College in preparation for becoming members of the same worthy corporation in your after-walks in life.

In Rules VII and VIII of the "Rules and Regulations relating to Pupils," you will find that in your second session you are required to act as "clinical clerks," and that if diligent in this duty you will receive a certificate from the professors. In preparation for your clinical attendance, from the first, you will take care to attend regularly the lectures upon pathology which will be delivered in this theatre, and also to study such works as treat particularly on this subject.

Intimately connected with veterinary practice are the combined sciences of chemistry and materia medica, which teach us the chemical and physical constitution of the drugs which we employ. Chemistry, indeed, is not limited to any department, but embraces the substances of the whole universe in its grasp, and if we were asked to point to the most triumphant branch of modern experimental knowledge, it is probably chemistry that we should feel constrained to name. Only look at the immense range of its powers. It is not many years since, in the hands of Liebig, it commenced the analysis of soils and manures, and laboured to improve the constitution of our mother earth, and to point out the true foundation of agricultural science, adding, out of the generous lap of chemical supply, whatever the ground by successive crops had lost from among its needful elements. The farmer and the stockowner, the labourer and the landlord, all took refreshment for their several positions from the electric, enlivening touch of this new-born agricultural power. The science of food has been improved by the same potent influence, and the agriculturist has become more and more enterprising in proportion as the science of chemistry has opened up his mind to fresh resources in the earth's produce. These facts, however, only show you to a slight extent what chemistry is, and how great is its realm; they nevertheless point to the study of this science as an integral branch of veterinary medicine. Materia medica is that department of chemistry which specially applies to a knowledge of medicines, their nature, action, and uses; and I would advise you to make yourselves well acquainted with the appearances of all the genuine drugs which we employ, for you will find it very useful to be able to discriminate a good from a bad specimen when you have to obtain and administer them yourselves; and recollect that they are the chief weapons upon which we have to rely in combating disease. They sustain, undoubtedly, very important and very definite rela-

tions to the organism, and in many instances have specific powers of acting on various parts of the animal frame. The more you are acquainted with these powers, the more certainly you will be enabled to treat successfully the various maladies to which in practice your attention will be drawn. Medicines also possess general powers, as purgatives, diuretics, sudorifics, &c., which, by influencing the whole animal frame, tend to remove diseases, even when they are localized in special organs; so that both the doctrines of local and of general treatment are approved by experience. My advice to you is to make no hobby of either systems, but carefully to study and firmly to stand upon what experience has shown to be substantial in both.

There are many other subjects upon which I could dwell, but time, and I fear also your patience, warns me to be brief. I will simply, therefore, now announce to you that in the ensuing session, as heretofore, Professor Simonds will deliver the lectures on the anatomy, physiology, and pathology of the domestic animals, excepting the horse. Professor Varnell will give the course on descriptive anatomy and physiology; Professor Tuson on chemistry and materia medica. Mr. Pritchard will give you practical demonstrations on anatomy, and generally assist you in the dissecting-room; while it will be my duty to act as your pioneer on the structural anatomy, physiology, and pathology of the horse. You will also receive daily clinical instruction in the practice of the College from Professors Simonds, Varnell, and myself. Gentlemen, let me bespeak your kind attention for all of us who have the responsible offices of teachers in this College. Let me assure you that your punctuality, your diligence, your interest in your studies, and your intelligence in the pursuit of them, will make our task easy and pleasant, will impart that agreeable consciousness between teachers and taught which sympathy engenders among friends, and will cause us to remember your faces and your presence here with encouragement and satisfaction long after you shall have quitted these walls.

In the library of the Veterinary Medical Association, of which I trust you will all become members, you will find an ample store of veterinary literature, embracing all the collateral subjects and sciences requisite to assist you in your studies. It will be necessary also that you should possess certain books for daily reference, a list of which you can obtain in the office of the College.

In the Association itself you will have the means, at its evening meetings, of exchanging ideas, and giving and im-

parting information, upon the various departments connected with your studies. The comparison of facts thus made will be deeply impressed on the mind, and constitute a valuable preparation for your ultimate examination. Moreover the Association, rightfully employed, will train you to habits of definite and gentlemanlike speech, and thus educate you in public address, which is a very important power for every man to possess in some degree. Lastly, the Association is a free and pleasant occasion of *réunion* between you and your professors. Your career as veterinary surgeons is stimulated to usefulness and excellence by more motives than success in private practice and the obtainment of that status in civil life for which by your education you are fitted, and by your conduct it is to be hoped you will all zealously aspire to, as the army also opens its doors to you, and admits you into its ranks as commissioned officers; and it affords me no little gratification to be able to state that the services of the veterinary surgeons in the army have many times been acknowledged and extolled by persons high in authority. The principal veterinary surgeon to the army, J. Wilkinson, Esq., who I am proud to see has this day honoured us with his presence, will, I doubt not, one day, on your acquitting yourselves to the satisfaction of his court of examiners, be pleased to enrol the names of many of you as candidates for that branch of the service over which he so ably presides. I may here be permitted to state, as a proof of what worth will attain to in our profession, that Mr. Wilkinson has recently been unanimously elected a governor of this institution.

As students, you have many incentives to carry you forward in the path of your studies. There is the Coleman prize, for which you have the opportunity of competing, consisting of a silver medal, a bronze medal, and a certificate of merit, which is awarded for the best answers in writing to questions submitted to you by each of the professors. The Governors of the College have, moreover, determined to give a prize for the highest proficiency in Cattle pathology; and the Veterinary Medical Association offers prizes for the best anatomical preparation, and for the best essay on a subject to be determined by the Council.

At the end of the second session there will be a general examination by all the professors, for passing those who desire to present themselves before the Royal College of Veterinary Surgeons as candidates for examination. Bear in mind, gentlemen, that these days of examination will inevitably come, but if you have acted upon the advice I have tendered, you will without fear at the last, and without "cramming,"

have enough knowledge to enable you to acquit yourselves to the satisfaction of your teachers, and obtain from them the certificate of admission to the Court of Examiners of the Royal College of Veterinary Surgeons for your final examination for the diploma of the College; and we trust that before that body success will crown your efforts, and that you will be admitted into the ranks of the incorporated members of the veterinary profession.

I am happy to be able to proclaim the prosperity of this institution—our Alma Mater of veterinary science and art in this country. In regard to the number of students, our average of late years has been higher than heretofore, and our scholastic forces greater than they were, for whereas for many years we had but two teachers to supply the exigencies of the class, we now have five. The patients in the infirmary have also increased fourfold, hence the opportunities of practical observation are quadrupled. Nor does this happy state of things end here, for our subscribers and general resources are not only steadily but considerably on the increase. In view of this our prosperity we are adding greatly to the College buildings. We think, therefore, that as students of today you will find yourselves possessing far greater advantages than those who years ago occupied the same benches which are now filled by you.

For many years past the College has been intimately associated with the English Agricultural Society, and every effort has been made to meet the wishes of the council of that body. The alliance of that society with the College represents the inevitable relation which subsists between the live stock of the country and the arts and sciences that have for their object the health, condition, and improvement of that stock.

It gives me pleasure also to record that this institution has recently received a legacy of £21, bequeathed to it by the late B. Botfield, Esq., M.P. for Ludlow. Besides this it has been publicly announced through the papers, under the head of "Wills and Bequests," although as yet the governors have received no official notification of it, that the late Captain Randall, of Tooting, who for many years attended the lectures at the College as an amateur student, has left to the College the handsome legacy of £1000.

Gentlemen, throughout my remarks I have considered the various topics brought before you in a general way, because it is the business of the first day of a new term for the lecturer rather to inculcate the right spirit into the class of students than to dwell upon any details of their studies. And now I

would say to you, let that spirit be a humane and a noble one, and remember that character is more lasting than intellect, and if intellect be not associated with industry and honour, character is sure to beat it, even in acquirement, in the long run. Cultivate humanity in all that you do, and in all that you make your patients undergo; and set your faces away from cruelty, all through your lives. Do not suppose that art and science derive any power for good from the hideous practice of dissecting living animals, so frequently, and to my mind brutally, had recourse to in some of the veterinary schools on the Continent, and with no better plea for its justification than that it accustoms the operator to the sight of blood and the writhing sufferings of his victim. Do not believe, gentlemen, that sound medical knowledge can be elicited from animal torture, which there is too much reason to fear is also to some extent still tolerated in this country, in spite of the very energetic and laudable exertions of the Society for the Prevention of Cruelty to Animals. Believe, on the other hand, that in the cultivation of all that is best in your hearts, characters, and lives; in soberness, temperance, and chastity; in the recollection of God above, and of the homes from which you have come; of the parents who are anxiously and lovingly watching your progress, you have sources of power, and skill, and success, which will conduct you in happiness to a clear and definite goal, where each one of you will enjoy that which is the best preparation for all functions—the consciousness of being the right man in the right place.

I should be doing a violence to my feelings were I to conclude this address without acknowledging with the deepest feeling of thanks the high honour conferred upon me by the presence here to-day of many of my professional brethren, some of whom have come long distances to listen to my imperfect remarks, and to afford me that support of which, after more than thirty years' service as a teacher in connection with this institution, I still stand so much in need. Amongst so many I dare not particularise; but permit me to say that your countenance on this occasion, to my mind, betokens a coming good. It is an evidence of an approach to that unanimity of action, oneness of thought, and freedom of social intercourse, without which we are but as a rope of sand, which may by the slightest blast be scattered to the winds; but possessing which, we may be likened to a metallic coil of strength and persistency, which shall enable us to maintain and support ourselves in that position in society to which we have a right to aspire, and act as a telegraph of veterinary science of future ages.

INTUSSUSCEPTION OF THE SMALL INTESTINES OF TWO POINTER PUPPIES.

By Professor VARNELL, Royal Veterinary College.

DURING the month of April last Mr. T. M. Leech, M.R.C.V.S., Bakewell, forwarded to the College for my inspection the abdominal viscera of a young pointer puppy, which had died from intussusception of the small intestines, that had occurred in no less than four distinct places. The case was a very interesting one; but what made it more so was the circumstance that another puppy of the same litter had died from the same disease, and at about the same time; its bowels being also invaginated in the same number of places. At the time the morbid specimen was sent I received a letter from Mr. Leech, detailing the full particulars of the cases, but this has unfortunately been mislaid. Since then I have received the following brief account, which I here insert:

BAKEWELL; *Sept.* 17, 1864.

DEAR SIR,—The cases referred to in my former letter occurred in two pointer puppies, which died from the effects of *intussusception* of the bowels. The singularity of these cases is that intussusception existed in *no less than four separate places in each dog*. I have never before seen this lesion in more places than one, either in the dog, the horse, or any other animal.

Yours faithfully,

T. M. LEECH.

I am not aware that intussusception is more common in the dog than in other animals; indeed, I have always thought that the dog was comparatively exempt from this affection. Unfortunately, in whatever animal it occurs, it is one of those maladies which we are unable to diagnose correctly, so nearly do the symptoms resemble those arising from other causes. But even if we were able to assert that the symptoms in any particular case depended upon intussusception of the bowels, we know of no certain means of affording relief. If a cure is effected at all, it takes place very often in the same way as the invagination had occurred, viz., by accident.

In many diseases also of the intestines which arise from other causes we are not unfrequently in the same dilemma; for instance, in strangulation of the intestines from the

bowel being twisted upon itself, or from a knuckle of it having passed through a rent in the mesentery, or from the pedicle of a tumour being twisted around the gut, thereby producing a like result. Within the last few days two very remarkable cases of strangulated bowels have come under my notice, but in neither of them did the symptoms indicate, so far as I could judge, the precise nature of the disease. The direct cause of the strangulation was very unusual, each case being found to depend upon the mesentery being firmly twisted upon its own axis.

Again; interruption to the free passage of the ingesta through the intestinal canal, which may be produced in various ways—as, for instance, by a calculus or calculi, or by impaction of hardened fœcal matter—may produce similar symptoms. Spasm of the muscular coat of the bowels will also not unfrequently give rise to very nearly the same class of symptoms. The two affections, however, last alluded to, are, by the aid of therapeutic agents, somewhat under our control. Still it is not always that we can effect a cure, and in making a *post-mortem* examination of the animals which die, we not unfrequently discover, to our surprise, that the bowel is invaginated in one, or even more places. Intussusception may, and often does, happen during the struggles of the animal just previous to death, and it may even occur, I believe, immediately on death taking place. Indeed, I have seen one portion of intestine slip into another after the viscera had been removed from the abdomen; but of course the parts involved in any of the latter-named instances would not present the same pathological changes which are observed in those cases in which death actually depended upon the intussusception. This is so self-evident that it needs no comment; nevertheless, these facts should be borne in mind, or the cause of death may be attributed to such a circumstance, and the true one be entirely overlooked.

The causes which give rise to intussusception are by no means well defined; indeed, they are at best only conjectural. Irritating substances in the alimentary canal, or the existence of parasites, are believed to be exciting causes, and I think it not at all improbable that the presence of worms might have had much to do with the invagination of the intestines of the puppies in question.

In commenting on this lesion I may be permitted to digress from these particular cases, and make a few observations on the immediate cause of intussusception, and explain why it usually proves fatal. To understand the

former it is necessary to have a clear conception of the peculiar vermicular movement of the intestines called the peristaltic action. Unless this is understood, it is difficult to conceive how invagination can take place. To assist, therefore, the *tyro* in science, into whose hands these remarks may fall, and who may be only imperfectly acquainted with the way this function is performed, I will briefly describe it.

The peristaltic action consists of alternate contractions and dilatations of successive parts of the intestinal tube, both being effected by its muscular or middle coat, which is composed of two orders of fibres, one taking a circular and the other a longitudinal direction. At any one point of the tube—say, for example, the anterior—the circular order may be in a relaxed and the other in a contracted condition, the bowel being in consequence dilated at this part. In this condition, having received some of the ingesta, the circular fibres contract first anteriorly, then gradually onwards, pressing thereby the contained matter in a direction towards the anal opening; these fibres then relax and the others contract, the tube being thus dilated and ready to receive and grasp, as it were, a fresh supply of ingesta, which, in its turn, is likewise moved onwards in the same way. Thus, by a series of wave-like movements throughout the whole length of the intestinal canal, not only are the contents passed gradually onwards, but also all their component parts are exposed to the absorbing surface of the mucous membrane. Now, as the muscular coat of the alimentary tube is under the influence of the nerves, so, if it be not unduly excited, the vermicular motion goes on regularly, and without any pain or inconvenience; and as the action of this coat is alternate, so are we led to the conclusion that the supply of nerve force is or must be the same, at least in degree. But as these alternations are in harmony with each other, no evil result will follow. If, however, on the other hand, the nerves supplying the intestine be unduly irritated as a whole, or even in places only, abnormal action will be the result. General increased action of the whole of the muscular coat of the intestine may be induced by some disturbing cause, primarily affecting the ganglia from whence the nerves proceed; or the peripheries of the nerves themselves, as distributed on the inner coat of the bowel, may be firstly excited, and thus affect, but by a more circuitous route, the muscular coat. The contents of the canal would thus be hurried onwards at a rate incompatible with health, and even diarrhœa may be thereby produced. But I can conceive that this increased action of the muscular coat of the intestines may be partial, and, con-

sequently, that at one part it may be excited to increased action, while at another, even closely adjacent to it, it may be very sluggish in its movements. I can also conceive that the supply of nerve force may be so irregular that the contraction of the circular order of fibres at one part will be unusually prolonged, while that of the longitudinal fibres will be comparatively of short duration. Such irregularities would lead to intussusception, which may occur in the following way, viz., a contracted portion of intestine may protrude into a dilated part posteriorly, or even anteriorly, to it (depending upon whether this abnormal action is progressive or retrogressive), dragging with it a portion of the mesentery. The circular fibres of the outer part of the bowel, forming, as it were, the sheath, immediately contract upon the invaginated position, and prevent its return. It is important to bear in mind that the part of the bowel thus affected will, by its being folded upon itself, have three thicknesses of its coats in apposition to each other—this is at once seen by inverting a portion of the finger of a glove—and, further, that there are four surfaces in contact with each other, viz., two peritoneal and two mucous. Now, in consequence of the impediment to the return of blood from the vessels of the invaginated intestine and mesentery, extensive serous effusion takes place, resulting in swelling and intense redness, or even blackness, from the blood-vessels being so much engorged. The most serious result of this effusion is that the plasma of the effused serum glues, as it were, the surfaces of the inverted bowel firmly together, preventing thereby the possibility of its returning again to its normal position.

Other parts of the intestines may become similarly affected, either at the same time, or subsequently. If the former, the lesions would be the same in character; but if the latter, the morbid changes would not be so intense. These phenomena, however, are only discovered on making a *post-mortem* examination. The invaginated portions of the bowels of the dog examined by me distinctly showed that the vessels of the one anteriorly placed were much more strangulated than those of the others. This fact suggested to me the probability of the invagination having occurred primarily at one place only, and that it was subsequently followed by the others and also that the affection was progressive, and not retrogressive. This, however, was not easily to be determined by the appearances of the parts.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from p. 572.)

Ranunculus ficaria (Lesser Celandine, Pilewort).—“*Leaves*, heart-shaped, stalked, angular, very shining. *Sepals*, 3. *Petals*, 9.” (Lindley.)

This perennial plant, of which we here give an illustration,



is found growing in moist meadows, and on the banks of hedges in most parts of the country. It is distinguished by its bright green, heart-shaped leaves; its one-flowered stem, and the peculiarity of its root, which consists of numerous long, somewhat fig-shaped, fasciculated tubers. Its flowers, which are of a bright yellow colour, often tinged with green, appear towards the beginning of April. “It is on the bright days of spring when this plant chiefly delights to open its yellow star-like blossoms to the sunlight, gemming the banks

with its green and gold." It possesses all the acrid properties peculiar to this tribe of plants.

A very interesting account of its effects upon animals was recorded by Mr. Flower, M.R.C.V.S., of Derby, in the *Veterinarian* for July last, in which the death of three valuable heifers had been caused by the plant. Through the kindness of Mr. Flower I had the great pleasure afforded me of making, in conjunction with himself, an examination of the herbage, &c., growing in the pasture in which the animals had been kept, which investigation resulted in the conclusion that the death of the animals had been caused by the *Ranunculus ficaria*. In no pasture that I had hitherto examined had I found this plant growing in such luxuriant abundance. A few plants only were in flower, but several parts of the pasture, upon which the animals had recently been feeding, were thickly covered by the bright-green foliage of the plant, which at this time was possessed of its most active properties. There are many more varieties of the *Ranunculus*, all more or less possessing the same acrid properties, which are considerably influenced by the soil and situation in which they grow. The following general remarks respecting the *Ranunculaceæ*, by Sir Gilbert T. Burnett, from his 'Outlines of Botany,' which appeared in the *Veterinarian* for April, 1860, may not be out of place here:—"Nearly two hundred species of *Ranunculus* are known, and these have been distributed into five or six sections, or sub-genera. The whole have pretty, and some very showy blossoms. They are remarkable for their general acridity; some are violent poisons, such as *R. scutatus*, which was formerly employed by the Swiss hunters to envenom their darts with which they shot the wild beasts; and others, such as *R. sceleratus* and *acris*, are scarcely less virulent. They excoriate the skin, and form ulcers that are difficult to heal; and even carrying specimens for a short time will occasionally inflame the hand. The water crow-foot (*R. aquatilis*) is less acrid than any of the rest, and Dr. Pulteney extols it as a wholesome and nutritious fodder. In some parts of the country, as near Kingswood, on the banks of the Avon, the cottagers support their cows and even their horses almost wholly on this plant; and in wet situations, where it abounds, it would become, were its properties generally known, of considerable economical importance. Cattle will also eat the *R. arvensis*, but it is a dangerous food; and its juice is so poisonous that M. Bruynon says three ounces killed a dog in four minutes, and sheep have been poisoned by feeding on it near Turin."

PROVINCIAL VETERINARY MEDICAL
ASSOCIATIONS.

Letter from Mr. E. COLEMAN DRAY, President of the
Yorkshire Association, Leeds.

GENTLEMEN,—I should not have troubled you with this communication had I not seen my name mentioned in a letter to you in this month's (October) number of the *Veterinarian*, from Mr. John Mitchell, of Leeds. Believing myself to be on friendly terms with my professional brethren of this town, I am surprised that Mr. Mitchell did not ask me—as I frequently see him—if I had alluded to him in my “post-prandial” speech at Newcastle. The following is what I said at that meeting:—“I know a veterinary surgeon at the present time in one of the largest towns in Yorkshire, who is neither a member of a veterinary medical association, nor does he take in a periodical in connection with his profession.”

Now, I beg to assure Mr. Mitchell that these remarks did not apply to him. It appears, however, that the cap fitted; and I regret exceedingly to know that there are *two* veterinary surgeons (instead of one) to whom my observations are applicable. In these days of progress any comment of mine would be supererogative.

With regard to veterinary medical associations, they have now become an established fact. During the formation of the Yorkshire Association I consulted Professor Morton on the point mentioned in Mr. Mitchell's letter, and he (Professor Morton) was of opinion that all members possessing diplomas of recognised schools were eligible to become members of veterinary medical associations. Mr. Mitchell some time ago published his reasons for not joining our association, in the *Leeds Mercury*; but as I did not consider a public newspaper to be a proper medium for medical discussion, I did not reply to his letter. Before, however, coming to this decision, I asked two or three members of our association what their sentiments on the subject were, when they unanimously agreed in wishing me to take no notice, for they did not consider Mr. Mitchell would be any acquisition to our society.

I can easily imagine that Mr. Mitchell feels isolated, and regrets the step he has taken. I maintain “our house is not divided against itself,” for, with only a few exceptions, all the veterinary surgeons in Yorkshire are members of our asso-

ciation, and even some of those who have stood aloof have promised to join us. I think the "status" of our profession is more likely to be improved by co-operation, and by veterinary surgeons conducting themselves as gentlemen, and avoiding pursuits of a degrading nature, than by taking such a ground of objection as Mr. Mitchell has done in his letter to your Journal.

Yours respectfully.

To the Editors of 'The Veterinarian.'

CASE OF SUPPOSED FRACTURE OF THE OS CALCIS.

By "QUÆSITOR."

FRACTURE of the os calcis is, I believe, very rare, and, as far as I am aware, an unrecorded accident. A supposed case of the kind came under my notice last week, the subject of which was an aged, well-bred mare, addicted to the habit of kicking at night. Some six or seven weeks since, the groom, on going to the stable in the morning, found the mare very lame, and in consequence of this she was placed under the care of the local veterinary surgeon, who continued to treat her. At the end of the time named I saw her, and found that she was very lame when walked out, but did not appear to be in much pain. After repeated and very careful manipulation, I came to the conclusion that the os calcis had been fractured, and that a partial union had taken place.

A friend to whom I showed the case thought—and I believe still thinks—that the bone was not fractured, but that a lesion of the tendons of the gastrocnemii muscles had taken place. In fact, he considered that a split from the seat of curb to about three inches above the cap of the hock had taken place, and that each time the animal moved, the tendon slipped off the apex of the os calcis; but he did not quite make me understand how it got back into its place again. Certainly, the action of the tendon was very peculiar, and somewhat difficult to describe. But, supposing my friend's diagnosis to be right, this would still leave unaccounted for the very evident lateral motion of the bone detectable on the application of pressure.

The mare will probably be put to the stud, so that for the present the case must remain in doubt; but, it being so unusual a one, I thought that, though very imperfect, you

might consider these remarks of sufficient interest to give them a place in the *Veterinarian*.

As to treatment—owing to the difficulty there would be in fixing the limb so as to allow of the fractured edges being kept in apposition long enough for them to unite, I imagine that little or nothing can be satisfactorily had recourse to. The case must, therefore, like many others, be left principally to the curative effects of nature alone.

COMMUNICATION FROM MR. GADSDEN,
M.R.C.V.S., BRACKNELL, RELATIVE TO
MR. FORBES' CASE OF DIFFICULT PARTURITION.

“REIGATE COUNTY COURT, *May* 19, 1864.

“*Before* W. FURNER, Esq.

“DIFFICULT PARTURITION.—ACTION FOR THE VALUE OF A MARE.

“FREDERICK ISAAC *v.* MATTHEW BLAKER FORBES.”

GENTLEMEN,—In your July number you published a case headed as above, under the section “VETERINARY JURISPRUDENCE,” which was, no doubt, read by a great many veterinary surgeons with disgust, especially as they could form no fair opinion who was in fault, Mr. Forbes for his want of skill, or the learned judge for the justice of his verdict. On the 29th of September last this case was tried again at the Reigate County Court, when the judge had a jury to assist him, who, after patiently listening to the particulars of the case for about five hours, gave their verdict for the defendant, Mr. Forbes, thus reversing the verdict given on the 19th May.

The case was one of the most difficult we can meet with, the presentation being as follows:—Head, neck, both fore legs, and one hind leg, protruding from the vagina. The mare also was a very small one, being only thirteen and a half hands high. It was, as your readers well know, not a very agreeable case for a man to attend in the middle of the night, when it was pouring with rain, and the mare out in a meadow. Mr. Forbes did his best under the circumstances, and, in the opinion of Mr. Gregory, M.R.C.V.S., Tonbridge, Mr. Legge, M.R.C.V.S., Dorking, and myself, there was no want of skill on his part. We heard the whole of the evidence on both sides, and formed our opinion from it. Trusting that your sense of justice will be a sufficient excuse for my trespassing on your pages to lay these facts before the profession,

I am,

Gentlemen, &c.

To the Editors of 'The Veterinarian.'

Facts and Observations.

EMPLOYMENT OF ELECTRICITY IN BRIGHT'S DISEASE.
—By the application of galvanism to the loins of a patient for half an hour, M. Namias found the obstacle to the separation of urea from the blood to be removed, and the quantity of urine increased. More albumen was also secreted, but M. Namias considers this to be of small consequence, compared with the benefit resulting from a greater elimination of urea.

ACTION OF TOBACCO ON THE PULSE.—M. Decaisne states that in the course of three years he has met with twenty-one cases of intermittent pulse occurring among eighty-eight incorrigible smokers, and independent of any organic disease of the heart. He calls this affection thus induced by the abuse of tobacco “narcotism of the heart.”

NEW SOURCE OF POTASH.—Professor Church has analysed a mineral of a coral-red colour, stated to have been obtained from Cheshire, where it probably overlies the salt-beds, and finds it contains 25·7 per cent. of chloride of potassium. It has been suggested that it is the result of the drying up of the ancient seas.

CONSTITUTION OF MATTER.—Some speculative ideas have been recently advanced by Mr. T. Graham, F.R.S., respecting the constitution of matter. He says it is conceivable that the various kinds of matter, now recognised as different elementary substances, may possess one and the same ultimate or atomic molecule existing in different conditions of movement. The essential unity of matter is an hypothesis in harmony with the equal action of gravity upon all bodies. We know the anxiety with which this point was investigated by Newton, and the care he took to ascertain that every kind of substance, metals, stones, woods, grain, salts, animal substances, &c., are similarly accelerated in falling, and are, therefore, equally heavy. Let us imagine one kind of substance to exist—ponderable matter; and, further, that matter is divisible into ultimate atoms, uniform in size and weight. We shall have one substance and a common atom. With the atom at rest, the uniformity of matter would be perfect. But the atom always possesses more or less motion, due, it must be assumed, to a primordial impulse. This

motion gives rise to volume. The more rapid the movement the greater the space occupied by the atom, somewhat as the orbit of a planet widens with the degree of projectile velocity. Matter is thus made to differ only in being lighter or denser matter. The specific motion of an atom being inalienable, light matter is no longer convertible into heavy matter. In short, matter of different density forms different substances—different inconvertible substances, as they have been considered.

FECUNDITY OF CHINESE SHEEP.—The correspondent of the *Chemical News*, writing from Paris, says, “Your readers, who, like myself, tasted Chinese mutton at one of the late banquets of the British Acclimatization Society, will be glad to hear the Chinese ram and ewe that were presented to the French Acclimatization Society last year are increasing and multiplying. Last year the ewe dropped four lambs. She suckled three, and the remaining one, to whom she took a most unaccountable dislike, for it was one of the prettiest lambkins ever seen, had to be brought up by hand. Last January she dropped three more, making seven altogether, all of whom are thriving. The mother is again in that condition in which Chinese ewes like to be who love their mandarins, and seems in no way to have suffered from being in a state of confinement, or rather, I should say, captivity, for fear of being misunderstood when speaking of these very prolific creatures. Besides their fecundity, they possess the advantage of making most delicious meat, and growing wool of great fineness and length of staple.”

VIVISECTION.—The editor of the *Quarterly Journal of Science*, after adverting to the visit made to the Veterinary College at Alfort by delegates from the English Society for the Prevention of Cruelty to Animals, and the adherence of the director of that institution, so notorious for its torturing practices, being secured; also, that the Emperor promised the deputation that he would institute a scientific commission on the subject, which promise he has kept, though the result appears not to have been unmixed good, goes on to observe—“In anticipation of the struggle about to take place between the advocates of the two systems, a regular correspondence has been opened between the different academies of Europe, and the opinions of scientific men of all countries are eagerly collected. The first communication, recently made to the institute, was from Professor Lusana, of Pisa, who described the processes by which he had succeeded in extracting the pneumogastric nerve from dogs and rabbits, after numerous attempts. The result of this frightful operation appears to

be that the victim becomes insensible to the strongest poisons, and that even strychnine may be introduced into the stomach with impunity. But, however curious and interesting this fact may be to the physiologist, we cannot see that any very practical results can be drawn from it, and we trust that the more humane physiologists who engage in the controversy may not be dazzled by the spurious brilliancy of such a discovery into the reprehensible practice of systematic torture of dumb animals."

CORRELATION OF PHYSICAL AND VITAL FORCE.—The life of man, says Dr. Carpenter, in an article on the above subject, in the *Quarterly Journal of Science*, or of any of the higher animals, essentially consists in the manifestation of forces of various kinds, of which the organism is the instrument; and these forces are developed by the retrograde metamorphosis of the organic compounds generated by the instrumentality of the plant, whereby they ultimately return to the simple binary forms (water, carbonic acid, and ammonia) which serve as the essential food of vegetables. Of these organic compounds, one portion is converted into the substance of the living body, by a constructive force, which (in so far as it is not supplied by the direct agency of external heat) is developed by the metamorphosis of another portion of the food. And whilst the ultimate descent of the first-named portion to the simple condition from which it was originally drawn becomes one source of the peculiarly animal powers—the *psychical* and *motor*—exerted by the organism, another source of this may be found in a like metamorphosis of a further portion of the food which has never been converted into living tissue.

Thus, during the life of the animal, the organism is restoring to the world around both the materials and the forces which it draws from it; and after its death this restoration is completed, as in plants, by the final decomposition of its substance. But there is this marked contrast between the two kingdoms of organic nature in their material and dynamical relations to the inorganic world—that whilst the vegetable is constantly engaged (so to speak) in raising its component materials from a lower plane to the higher by means of the power which it draws from the solar rays, the animal, whilst raising one portion of these to a higher level by the descent of another portion to a lower, ultimately lets down the whole of what the plant had raised; in so doing, however, giving back to the universe, in the form of heat and motion, the equivalent of the light and heat which the plants had taken from it.

THE VETERINARIAN, NOVEMBER 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE OPENING OF THE MEDICAL SESSION AT THE ROYAL VETERINARY COLLEGE.

THE commencement of the Scholastic Session at the Royal Veterinary College, on the 3rd ult., was inaugurated by the delivery of an address by Professor Spooner. Of late years the profession has evinced the greatest interest in this event, and has been accustomed to assemble in numbers far too large to be accommodated as it ought to be within the area of the lecture-theatre. The present proved no exception to the rule; nay, we never remember to have seen a greater gathering. Friends from all parts of the country were present; indeed, it appeared not only that every county had sent its representative veterinary surgeon, but almost every town. Both new and old students mustered also in great force, and the whole thing gave indubitable evidence of success, and augured well for the advancement of veterinary science. One or two novelties—things which we have advocated—movements in the right direction—were introduced on this occasion. We hail them as auspicious events, and no doubt our professional brethren will do the same. *Firstly*, one of the Governors of the College, J. J. Wilkinson, Esq., presided over the meeting; and, *secondly*, at the close of the lecture, he, in the name of the Governors, presented the medals and certificates of merit which had been obtained by the successful competitors of the previous session.

When we come to remember the long list of noblemen and gentlemen—headed by His Royal Highness the Duke of Cambridge—who officiate as Directors of the College, even such things as these; trifles as they may appear to some, are well calculated to invest the opening of the

session with a dignity not otherwise belonging to it, and to stimulate the students—the future members of the profession—to increased exertions in the obtainment of knowledge. We may here ask a question, which we have asked before, viz., whether these annual gatherings should not be turned to some other useful account? Every event which brings the scattered members of a profession like ours together should be seized upon for the accomplishment of good. As things are at present, they are in great measure lost. Heartily would we give our support to an attempt to inaugurate the opening of the session by an evening meeting, at which some practical paper, in connection with veterinary science, should be read and discussed. Nor would we end here, but rather crown the whole by the good old English custom of assembling around the festive board, as Governors, Council, Examiners, Professors, Practitioners and Pupils, of a rising and important profession. Much real good would result from such a *réunion*—more, in reality, than many among us are inclined to believe. It requires only for some one to take the initiative, when all will be found easy indeed of accomplishment. Here is work for the Council. Let the question be mooted there.

To return. In another part of our Journal we have inserted the introductory address *in extenso*, which renders it unnecessary for us to speak of its general merits, or its special adaptation to the occasion. One announcement, however, which it contains will give universal satisfaction. Rightly carried out, it will do more to enhance the profession in public estimation than the obtainment of all the legislative measures ever devised by those who are so solicitous for Parliamentary recognition beyond what we now possess. It is that, for the future, no student shall enter the College unless he be subjected to a preliminary examination which must be passed to the satisfaction of the Governors and Professors. The standard at present is not placed very high, but still high enough to secure men of fair English education alone becoming members of the profession. The Royal Veterinary College deserves well of the country for having taken this step, in the face of open and cheaper

schools. We hail it as the wisest and best she has ever taken, and one which will be duly appreciated and supported. Already she has had proof that her interests cannot suffer by being closer identified with the requirements and rapid progress of the age. Let progression continue to be her resolve, and ere long the science she teaches will take its rightful place, and be in truth regarded as the honoured sister and helpmate of human medicine.

THE PRESIDENT'S DINNER.

WE beg to draw attention to the report of the dinner of the President of the Royal College of Veterinary Surgeons to the profession, which will be found in our present number.

Meetings like these are too few among us; and of late years those who have filled the office now held by Mr. Hunt have ceased to honour it by assembling the members of the Council or the profession, either around the festive and friend-cementing board, or at a scientific and social gathering.

We congratulate the President on his resolve to break through the trammels of precedent; and we doubt not his example will be followed by others who will be called upon to fill the chair he now so worthily occupies.

PROFICIENCY IN CATTLE PATHOLOGY.

THE Governors of the Royal Veterinary College have determined that, for the future, a medal shall be awarded to the pupil who, at the close of his studies, shall pass the best examination on CATTLE PATHOLOGY—scientific and practical. We doubt not that this resolve will give great satisfaction to the agricultural community.

Extracts from British and Foreign Journals.

SOCIAL SCIENCE CONGRESS, YORK.

Agricultural Section.

THE SALE AND TRANSPORT OF CATTLE.

THE Rev. Dr. Burgess, of Chelsea, read a paper, written by Captain O'Brien, of the Mount, York, on "The Sale and Transport of Cattle." In the outset of his paper he referred to the prevalence of panics about unwholesome food which came like gusts of wind across the minds of the British public. Among these he classed the reports and statistics recently circulated as to the frequency of fatal cases of pleuro-pneumonia, and as to the foot-and-mouth disease being found in every parish. The trumpet of alarm, he said, was blown long and loud by a learned professor in Edinburgh; and the excitement might be fairly described as approaching to panic, if the anecdote, given in evidence, were true, that, in the discussion of these matters in the Town Council of Edinburgh, an old gentleman, one of the magistrates, declared he believed that he was now breeding tapeworm himself. As a summary of the evidence given before the late Select Committee, the writer gave the following:—Pleuro-pneumonia appeared in this country about 1842. It spreads very rapidly, either by infection or contagion, and breaks out suddenly without apparent cause. It is intractable, and sometimes very fatal, carrying off occasionally three fourths of a herd. It is aggravated by local circumstances (the loss on cows in the town dairies being very great) and also by atmospheric conditions. It may remain latent for a month, and then suddenly develop itself and kill the animal in twenty-four hours. The foot-and-mouth disease appeared first in 1839. It is an eruptive fever; the gums, mouth, and tongue, are affected; the animal slavers at the mouth; the hoofs crack, bleed, and in bad cases actually come off. It is seldom fatal, and is easily cured, though it greatly reduces the condition of fat animals. It is an epidemic, and also extraordinarily infectious or contagious. It is incredibly prevalent, from one third to one half of all the animals at a fair being affected by it. It may remain latent for three weeks, and then be suddenly developed by exposure to wet and cold, by change of weather, or by local causes. With dairy cows it produces an eruption on

the teats, by which the milk is affected. The most horrible of all cattle maladies are the parasitic diseases, caused and subsequently propagated by eating diseased meat, chiefly pork. Measly pork contains the embryos of tapeworms; and when these pass into the human body they develop into complete tapeworms. After some further remarks descriptive of the evidence as to the injury done by the *trichina*, a small worm, and also of what the writer termed "the horrors of pig-feeding," which were beyond belief, Captain O'Brien went on to quote a series of statistics produced in support of the bills introduced into Parliament last session, which have already been published, after which he gave an abstract of the leading provisions in these bills as originally introduced, and of the objections brought forward to the Cattle Diseases Prevention Bill by the Highland and Agricultural Society. He then went on to maintain that all the statistics which had been adduced must for the present be deemed wholly unreliable as a basis for legislation, as both parties in the late controversy had proved that nothing could be more fallacious than their opponents' facts except their figures. He passed over the whole subject of dead meat, including parasitic disorders, to come at once to the great question whether the meat of an animal affected by pleuro-pneumonia was or was not fit for human food. On this point he maintained that medical testimony absolutely unimpeachable placed beyond doubt that this meat, at all events in all but the latest stages of the disease, was perfectly fit for food. This fact was of the last importance, not only in reference to the public health—for this meat was used in every household—but in regard to the spread of the disease. The bill was therefore not necessary on the ground of the public health. Still, it might be expedient as a means of preventing disease. Its general character certainly raised a presumption against it. It was a bill of restrictions and penalties, the effect of which, in the judgment of the men most competent to form a sound opinion, would have been to raise the price of meat 25 per cent. The foundation of all measures for preventing the spread of disease among living animals must be inspection, and the magnitude of the scale on which inspection must be established presented serious practical difficulties. The veterinary surgeons had no reliance on the butchers, the butchers had no confidence in any but themselves, and the largest salesman in London "does not attach to veterinary evidence the importance he does to practical experience." And yet the inspectors must be numerous, competent, above influence, and inspire confidence in their judgment. The

expense of such inspection would probably be greater than the country would submit to. Inspection, too, would infallibly break down where it would be most wanted—at such great fairs as Weyhill, Ballinasloe, or Falkirk Tryst, where the number of animals collected together was so enormous—the sheep at Ballinasloe amounted to 70,000—as to render real inspection an impossibility. The whole system of legal regulation rested on inspection, and no one had yet suggested a practical way of dealing with the inspection of living animals; while those in the trade now state that they would place no value either on the inspection or the opinion of the inspector, and, in fact, scout the whole thing as an absurdity. Next in importance was the separation of infected from healthy cattle—that was, indeed, a cardinal point. Farmers, however, would never tolerate the interference of inspectors and constables on their own farms. Moreover, “unenclosed land” meant all the Highlands of Scotland, half of Ireland, and large districts in Cumberland, Westmoreland, Norfolk, Wiltshire, and Hampshire. After some further criticism adverse to various provisions in the bill, chiefly on the ground that they were unworkable, and that they would seriously injure the trade in cattle without preventing the spread of disease, Captain O’Brien proceeded as follows:—The foot-and-mouth disease is so catching that precautions by Act of Parliament against its spreading are vain. Being easily cured, the general opinion is that it should be left to the owners of the stock, whose pecuniary interest it is to take the best measures medical skill can devise to arrest the disorder. Pleuro-pneumonia, though not so prevalent, is far more fatal. With fat cattle the best and cheapest remedy is the knife the moment the disease appears, when the animal is not yet reduced in flesh, and while the meat is still good and wholesome, and will bring a fair price. If, as proposed, the sale of such meat had been prohibited, it would have been impossible to have got rid of the animals, and a great impulse would have been given to the spread of the disorder. Lean beasts present a difficulty. The only thing to be done is to send for the veterinary surgeon. There is little fear of their being sent to market, as one diseased beast would injure the sale of the whole lot, and possibly those of the owner on future occasions. The example of foreign countries is far from conclusive, especially as, in point of fact, their elaborate system of regulations had failed to stop the spread of pleuro-pneumonia. Mr. John Honck, a large importer of foreign cattle, said that in Slesvig and Holstein, where the government had really taken the matter in hand, the remedy was

worse than the disease, as the precautions had not had the least effect in exterminating the malady, and had given the greatest dissatisfaction. The disease itself was one of those epidemics which from the earliest ages had occasionally passed over Europe and after a time disappeared. There was already good reason to believe that this one would resemble its predecessors; that it was of a milder type than when it first appeared, and would gradually die out. The whole of the recent inquiry had again taught the good old English lesson that individual effort was better than Government assistance, that Government could hardly ever interfere in the course of trade without doing mischief, and that more could be effected by attention, care, and skill, than by all the most stringent regulations of an Act of Parliament, or even an Order in Council. It certainly was very remarkable, and spoke volumes in favour of the good sense of the gentlemen who undertook the task of legislation, that, though they entered upon it with the view of enforcing regulations, much impressed with the necessity of doing something, and anxious to shape the crude proposal into a measure of some real utility, the only practical result was a recommendation to relax an Order in Council with reference to the examination and detention of foreign cattle.—*North British Agriculturist*.

ON THE ADVANTAGE OF INOCULATING SHEEP FOR THE
SMALLPOX.

By JOSIAH DEACON.

ONLY lately returned to England after very many years' residence in Russia, I was both surprised and gratified on reading Professor Simonds' able lecture on "Smallpox in Sheep;" surprised that the question had not been long since decided, gratified at his masterly and conclusive treatment of the subject. I venture now to add my humble testimony, derived from twenty-five years' experience in the steppe country of Mid and South Russia, where I have had landed estates under my administration with flocks of merino sheep varying from a few thousand head to upwards of twenty thousand. On these inoculation was systematically employed with unfailing success. Although the sheep under my charge were perpetually exposed to contagion, from the existence in our immediate neighbourhood of flocks in which

thousands have died from the neglect of this precaution, *I never lost an adult animal from the ordinary smallpox.*

In order to show the impossibility of avoiding contagion, I may state that the only boundary mark between properties in the open steppe country is a deep furrow made with the plough, which is soon overgrown with grass. The shepherds are accustomed to meet on the border to chat with their neighbours. However strict the orders were not to approach a neighbour's frontier when his sheep were tainted by this disease, I have myself more than once caught the shepherds returning from, or close to the frontier, when such a flock was in sight. Detection is, however, very difficult, as twenty thousand sheep would be spread over a space of some forty or fifty thousand acres, divided into many farmsteads.

I have heard of sheep which had been inoculated having caught the infection, but have frequently traced the cause to imperfect inoculation, which was not unfrequent so long as the operator merely passed an impregnated thread through the ear of the animal; but, as soon as the plan of making the puncture under and on the fleshy part of the tail became general, such failures were less common. I was as particular in insisting on the careful inoculation of our lambs as on the vaccination of the children of the peasants. Our losses of *lambs* from inoculation were so trifling that we never kept a separate account; they were merged in the general total of yearly losses.

The only precaution considered to be necessary was not to inoculate during very hot or cold weather; the latter, in particular, proved fatal by preventing the free formation of the pustules and driving the disease inwards. Those who have the general charge of large flocks in Russia are mostly Germans, who have some knowledge of the veterinary art, and I never yet met with one of them (I have had many under my orders) who doubted for one moment the efficacy of inoculation; on the contrary, it is considered by them to be one of their most important duties to perform that operation with success. The German sheep-inspector, who is always well paid and is intelligent, would as soon think of being *without his pipe as without his inoculating needle!*

I shall be most happy to give any further information on this head to any one requiring it; my address will be with the worthy secretary of the society.—*Journal of the Royal Agricultural Society of England.*

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

DISCUSSION ON MR. LAWSON'S PAPER ON "TETANUS."

(Continued from p. 739.)

IN our last number we inserted a paper on "Tetanus," read by Mr. Lawson, at a meeting of the Lancashire Veterinary Medical Association, on the 14th of September. As the subject is an important one, we now furnish our readers with "the official report" of the discussion which followed the reading of the paper.

The President (T. Greaves, Esq.), in inviting discussion, remarked that, when in London in May last, at the annual general meeting, being in the company of several distinguished members of the profession, the conversation incidentally turned upon tetanus, when one of the gentlemen stated that he had cured the last five cases which came under his care, and that his brother had been even more successful than he had. His plan was to give *no medicine whatever*, and never to bleed, blister, or purge, or give injections. His great reliance was on perfect quietude, darkness, and time. He (Mr. Greaves) said to himself, we must have this man at our meeting in Manchester, when Mr. Lawson's paper on tetanus comes on, and it gave him the greatest pleasure to inform the members of the association that that gentleman had in the kindest manner possible complied with his invitation, and had come all the way from Bath on purpose to be present with them this evening. By way of commencing the discussion, he would therefore call upon the gentleman to whom he had alluded—Mr. Broad, of Bath—to open the discussion.

Mr. Broad, of Bath, said he had treated six cases. One was idiopathic, and the patient died. The remaining five belonged to the traumatic class. The first of them was a hunter, that had received an injury to his heel. It was a very severe case. The patient was put into a quiet loose box, and, as he could not swallow anything worth mentioning, no medicine was administered. It proved to be a very good case. The next patient was a brewer's dray-horse, which had injured one of his feet with a nail. The disease appeared in a very severe form after the mishap. He had the animal in his own stables, and it eventually recovered. The next case was a butcher's horse, that had run away and knocked itself about so much that tetanus ensued. He had the animal put into a loose box, and allowed no one to see him until his recovery. The next case was a colt, whose mother had kicked it. This patient was brought in just as the wound healed, and had been turned out again when tetanus set in. It was a very severe case, but after removing the animal from one box to another, which was quieter, and getting it up when it fell, he succeeded in bringing it round. The next case was the result of exposure to the weather. Sedatives

were given, and the animal recovered. He (Mr. Broad) had previously been in the habit of trying belladonna, and had recovered several patients with it. He gave two or three drachms between the lips, but he had been induced to discontinue the use of the drug. When chloroform first came into use he gave trial to it, but, instead of improving the patient, it brought on the symptoms again, and entirely upset the case. In another case he had some difficulty in keeping the patient quiet by the belladonna treatment; he gave two drachms of aloes, which revived the animal so much that he was left alone, and sometimes he seemed as if he would recover. He began purging, but got down, and knocked himself about so much that he had him destroyed. He also adopted the belladonna treatment some years ago in another case, where a farrier was in attendance. A dose of physic was administered, superpurgation ensued, and the patient dropped down and died. With regard to quietude in the treatment of patients for such a disease as tetanus, he thought it was highly essential. No person should be allowed to see them.

Mr. Hunt, of Birmingham, corroborated much of what *Mr. Lawson* had stated in his paper. This destructive disease had baffled many of their predecessors, who had resorted to all kinds of treatment. At any rate, for tetanus a greater variety of remedies had been used, and, perhaps, with less success, than for any other affection, with the exception, probably, of glanders. When chloroform was introduced it was regarded as another panacea. In looking through the writers on tetanus he found some singular and remarkable instances. One French veterinary surgeon actually castrated a horse, seeking to cure him by that means. In another case the amount of blood taken from the animal was perfectly fabulous—from eighteen to twenty quarts in the course of six or nine days. *Mr. Broad's* remarks, to a considerable extent, corroborated what he (*Mr. Hunt*) was about to say. Some twenty years ago he had seen hydrocyanic acid administered to a great extent. The doses were larger than those which *Mr. Lawson* had advocated, and possibly to that cause might be attributed the absence of success. The amount of excitement consequent upon administering large quantities of acid was great. *Mr. Lawson* would, perhaps, state whether he had found that to be the case.

Mr. Lawson replied that, in the first case he tried the acid, he gave a dose three times a day, but as it created very great excitement he discontinued it.

Mr. Hunt (resuming) said attention had been directed to the acute and subacute symptoms. Of late years, he found that the subacute had outnumbered the acute cases. Whether the disease had lost some portion of its former character he was not prepared to say. A few years ago he had a case which recovered, and, being anxious as to what the ultimate result might be, he purchased the horse. The animal carried his (*Mr. Hunt's*) partner for two seasons, and was then used in harness, doing very well. Alluding to quietude, he had a case at that moment just recovering. The disease belonged to the

subacute class, and all he had done was to keep the animal quiet. Hydrocyanic acid was a most valuable medicine, though he had discontinued its application for some years. He was very glad to take part in this discussion, because it was always desirable that, in their experiences and opinions, they should corroborate each other, in order that they might together find an effectual remedy. From his own experience, he certainly advocated the quiet treatment, and if medicine had to be administered he thought hydrocyanic acid was the best.

Mr. Brown, of Oldham, had adopted Mr. Lawson's method in three cases with success. He used half a drachm of acid twice a day.

Mr. Dray, of Leeds, President of the Yorkshire V.M.A., expressed his regret that he was unable to confirm the good effects of the treatment which Mr. Lawson had suggested. He (Mr. Dray) had not tried hydrocyanic acid, but he had had several patients that had recovered—cases of idiopathic and traumatic tetanus. His first case was a valuable mare, the property of the grandfather of the present Earl of Harewood. The patient was removed to an isolated dark box; but he fell into an error by using sheep-skins to the loins, and by endeavouring to rouse the bowels into action by exhibiting croton seed in sloppy mash. The mare got well, but whether she would have recovered sooner if there had been an absence of the excitement which he produced he was not prepared to say. He was quite convinced that the profession had been in error a long time, and that Mr. Lawson's opinion was correct, that quietude was the main agent to effect a cure. He had treated three cases successfully, but he would not presume to say that he cured them. Hydrocyanic acid might be of great service, although anything of an exciting nature was highly prejudicial. During the whole of his practice he had had six cases that recovered from tetanus; but, on the other hand, the deaths were innumerable. He did not agree with Mr. Hunt in considering that the violence of the disease had abated of late. Frequently the veterinary surgeon was not called in soon enough. The physician was sent for when the undertaker ought to have been called in. The veterinary surgeon was often sent for as a *dernier ressort* in these cases.

Mr. Haycock, of Manchester, said that Mr. Lawson had learned one thing from homœopathy, which was that they, the allopathists, were necessarily on the wrong tack so long as they employed violent remedies. It often took a man half a lifetime to learn an important fact like that. One of the most important matters was also to keep an animal quiet, not in tetanus merely, but in most other diseases. Mr. Lawson had spoken of the pathology of the disease. He (Mr. Haycock) had found congestion of the nerves and a peculiar change in the spinal cord itself. He had found both the dark or gray matter and the white matter in a congested state. He believed that in one case these conditions were absent. They could not always detect the change by the eye alone.

The essayist had also stated that he had found the lungs congested.

That might be expected. Often, indeed, had congestion in tetanus and other diseases been mistaken for inflammation. Mr. Lawson's cures reflected very great credit upon his method of treatment. He (Mr. Haycock) had met with a moderate share of success in the treatment of tetanus, but it was not to be compared with the essayist's. He had had eleven cases. Of that number six died and five recovered. Of the recoveries, several were very violent cases. The first was a traumatic case. The patient was a mare, with a wound in the ischium; she lived three weeks. The second had sustained a similar injury; it was a horse, and was only ill eight hours. The next was an animal belonging to Lord Harewood; tetanus resulted from docking. He saw the patient in the evening, and it was dead before morning. The fourth belonged to a livery-stable keeper in Yorkshire. The disease was brought on by the animal being plunged into snow. It died in the course of fourteen hours. The fifth case also occurred in Yorkshire. The patient had been ill a fortnight when he was called in. He had also had under his treatment, in Manchester, a little blood-horse, which died in twelve hours. Of the recoveries, one patient came from a livery-stable in Leeds, with broken knees; a second was a serious traumatic case. The animal belonged to a gentleman in Yorkshire. Both of them recovered in a month. They were treated with arnica and belladonna internally, and arnica externally. The next case arose from a wound in the ischium of a very severe nature. At the outset the wound was very hot and swollen. It was treated with belladonna, chloroform, &c., administered in gruel. The animal recovered in about a month. He had also effected cures in two other cases, making a total of six cures against seven deaths.

With regard to purging, Professor Dick used to say, in his lectures, "once purge them, and they are sure to recover." During that time, however, that he (Mr. Haycock) was at college, three or four cases occurred in which purging was effected, and all of the patients died. Mr. Hunt had spoken of subacute types of the disease. He, however, thought that the cases of tetanus were not so severe as they were formerly, as the patients were left more to themselves, and dreadful forms of disease which used to be seen did not occur because they were not produced by violent treatment. The better way was to let them alone. It had been said that there was a change in the disease; he believed that the change was in the treatment. Mr. Lawson had informed him that death followed principally on injuries to the flanks and broken knees. It was desirable to ascertain what class of injuries in particular localities was mainly concerned in the production of fatal cases of the disease. He had found that injuries of the knees, flanks, and some other parts of the body, were not of a very severe nature. The worst forms of the disease which he had seen appeared in consequence of a wound in the ischium, and a gathering in the hind foot, caused by a nail.

Constipation was another great bugbear. He never administered physic in these cases. It would always be found that, when an animal was attacked by a very acute form of the disease, there was a

closing-up, as it were, of every organ; all the natural functions ceased at once, and the whole system, having become alarmed, so to speak, at the attack thus made upon it, concentrated all its powers in order to resist the shock, and to obviate the danger which followed. Hence it often happens that the surgeon was called in at this stage, and the patients were treated for constipation of the bowels instead of the disease itself.

When the disease was once subdued, the natural functions returned. Quietude he had often insisted very strongly upon, and he was very glad to find that they were beginning to believe in the necessity of that measure. With regard to treatment, they would find even in 'White's Farriery' a statement to the effect that animals had been treated with sheep-skins, small doses of aloes, and quietude, and that no bleeding was resorted to. With reference to Mr. Lawson's remedy, he (Mr. Haycock) was doubtful as to the action of hydrocyanic acid. He did not think that it had any action, except in very large doses.

Mr. MacTaggart would, to some extent, confirm that opinion. Half a drachm had no effect. Perhaps Mr. Lawson would express his opinion with respect to that point.

Mr. Lawson thought that the amount of success which had attended his treatment with half-drachm doses of hydrocyanic acid was a sufficient answer to Mr. Haycock's query. The action was proved by the good effect produced.

Mr. Broad said he had been in the habit of giving two-drachm doses, and, although they were administered as quietly as possible, they produced considerable excitement. The effect of the first dose was scarcely observed. Formerly he did not insist upon quietude, which he had subsequently found to produce so good a result.

Mr. P. Taylor, of Manchester, inquired in what way the dose was administered.

Mr. Broad replied that he used a small bottle; and that generally the symptoms passed off in a month.

Mr. P. Taylor—who complained that Mr. Lawson had not entered more into the pathology of the subject—said he had, in the course of nineteen years, treated ten cases, and that the majority of them were of the traumatic class. The first patient died soon after purgation took place; the second was treated with hydrocyanic acid, but, owing to the extensive nature of the wound and consequent excessive weakness, the patient died. He subjected the next patient to a treatment which was described in the *Field* as having been applied with success. It was bleeding the patient to the extent of eight or ten quarts, placing the animal in a quiet place, and wrapping the whole trunk in hot blankets. He tried it for four days, but never saw the slightest alleviation of the symptoms.

Another patient received a dose of physic, and got well. A two-year-old colt—an idiopathic case—was put into a dark place, and succumbed to the disease. No medicine was given. He was of opinion that there was no medicine that would overcome extreme

irritation sooner than hydrocyanic acid. Whether that drug would prove to be the philosopher's stone with which to cure all cases of tetanus he could not say, but he hoped that the discussion that evening would be the means of our being able to overcome a dreadful foe.

Mr. Williams, of Bradford, said he had comparatively little to state relative to this disease, inasmuch as he had met with poor success. With regard to the use of hydrocyanic acid; he had tried that drug for other diseases, and he found drachm doses of Scheele's strength produced such violent symptoms that the patient seemed as if it were at once going to die, so that they might rest satisfied that drachm doses of that medicine had some power in its application to tetanus. In most cases of traumatic tetanus cicatrization of the wound was nearly completed when the symptoms appeared. It was supposed by some that the exciting cause was a neuromatous formation on the injured nerve, which had become entangled in the dense cicatrix, thereby producing irritation. This morbid condition had been found in tetanic cases; these neuromatous formations were simply tumours partaking of the nature of fibrous tissue, consisting of dense plastic matter lodged amongst the fibrils of the nervous tissue. The fibrillæ were thereby separated, and usually rendered the seat of perverted sensation. Most frequently they formed on the truncated extremity of the divided nerve. He agreed with *Mr. Lawson* on one point, viz., that the nerves at, and leading from, the injured part showed some sign of increased vascularity and enlargement after the inflammatory process had taken place. It was in the nerves of the injured part that that inflammatory change was to be looked for, rather than in the spinal cord; for the disease was to be regarded as an example of extreme irritation of the whole of the true spinal system, induced by inflammatory products being lodged in the seat of the injury. There was no doubt that inflammation of the cord produced symptoms of a tetanic character, though those symptoms were different from tetanus itself. Tetanus closed the jaws; for, according to good authority, tetanus included almost every form and variety of this disease, and he was of opinion that a wound either in the ischium or ilium was often followed by tetanus. It would be well to probe the wound in the local treatment of the disease. He was of the same opinion as *Mr. Haycock*, that there had been no change in the disease, but that any apparent modification of it was to be attributed to a change in the treatment.

Mr. Fleming, King's Own Hussars, was sorry that, like the last speaker, he had very little to say with respect to tetanus. He had had fourteen cases in eight years, and all the patients died within three days of their removal to the stables. The majority of them had wounds in the feet caused by marching, whilst five might be ascribed to exposure to the weather. He had observed some of those cases very narrowly. The extraordinary rapidity with which the disease spread left him in doubt altogether as to its pathology. He thought the reason why they were unable to form a proper idea

of the nature of tetanus was that their knowledge of the physiology of the nervous system was so limited. One thing appeared to him quite certain, namely, that the disease was not caused by inflammation of the nerves; at any rate, he had not been able to discover such a cause. He had noticed that, of his fourteen cases, eleven were males. He should be glad to have the sense of the members present upon this point. He thought that some useful inferences might be drawn if it could be ascertained whether either sex was more liable than the other. He would gladly adopt Mr. Lawson's mode of treatment, which was quite reasonable, considering the irritability of the nervous system which existed. They must find some means to abate or remove excitement.

Mr. P. Taylor stated that Messrs. Wood and Watson had said that a man had a larger amount of nervous energy than was possessed by any female.

Mr. Haycock found that of the thirteen cases he had noticed, nine were males.

Mr. Hunt said the larger proportion of his patients had been males.

Mr. J. Simpson, Liverpool, in stating the result of his experience, mentioned three successful cases. To the first patient he gave aloes and croton seeds in a little gruel; the second—a chronic case—he treated in the same way; to the third he administered half a pint of linseed oil for two days. The last was the best case.

Mr. P. Taylor remarked that a week or two ago Mr. Taylor, of Nottingham, informed him that the treatment he adopted was very successful. He put the animal in a quiet place, gave drachm doses of croton-seed in a mash, and also linseed oil. The result was that eight out of ten cases recovered.

Mr. T. Leech, of Bakewell, had treated two cases. The first was a mare; she fell in the box, and soon died. The second was a horse, a big black animal, that was unable to stand in the yard, but after taking a quart or two of ale he was removed to the box and put in slings. He recovered. The treatment consisted chiefly of the exhibition of aloes.

Mr. Morgan, Liverpool, had met with several cases of the disease in Scotland; they were chiefly of the traumatic class, and one was an idiopathic case. He had had the usual proportion of recoveries. He resorted to quietude, used belladonna, and sometimes also he had given as much as twelve drachms of aloes, which produced a decided effect. He thought that the bowels might be relieved without the aid of medicine, because he believed it was an attack upon the muscular portion of the intestines that produced the constipation. He had never tried hydrocyanic acid. In some cases he slung his patients, and in two or three of them had done so with great benefit.

Mr. MacTaggart, of Halifax, had found that belladonna was insufficient of itself to effect a cure, excepting when the brain was affected. He frequently used nux vomica, and with considerable effect; also arnica and other medicines.

Mr. Dixon had, during twenty years' experience, seen several cases, and adopted various remedies with a very uncertain result. He should certainly give trial to Mr. Lawson's plan in any future case which came under his care.

Mr. Carter, of Bradford, mentioned several cases. He had used aloes with some success. He had had a case succeeding on docking, which recovered, through the use of hydrocyanic acid, in two-drachm doses, given per rectum.

Mr. Toll, Lichfield, had met with seven cases; four belonged to the traumatic class, and all of them died. The others were of the idiopathic class, and only one of them recovered. His treatment for the successful cases was aloes, besides which very little medicine was used. A sloppy diet was allowed. He had seen hydrocyanic acid given with some effect in two cases.

Mr. Howell, of Rochdale, gave the particulars of one or two cases.

Mr. Fleming wished to add to what he had already said that, in a regiment of 400 horses, about four fifths were mares, and there was not a single case of lock-jaw among them. It would appear that the disease was more prevalent among one sex than the other. He had been very much impressed with the tone of Mr. Lawson's excellent paper. He (Mr. Fleming) thought that if there was one thing more than another that tended to raise the profession it was their extreme solicitude for the sufferings of their patients. Humanity was a principle which they ought to exercise towards all animals.

Mr. Smith, of Ormskirk, gave the result of twenty years' experience. The balance, he said, was on the wrong side. There had been more deaths than recoveries. He fired one patient's back all along the spine, but the animal died. Another patient recovered under the use of prussic acid and occasional purgative medicine, the whole body being wrapped in turpentine blankets. His own practical experience convinced him that all the cases he had brought round would have recovered had they been merely put into a loose box, and kept perfectly quiet.

Mr. John Greaves, Altrincham (having been requested by the President to state the result of his experience), said that he had not met with much success of late. He had lost most of his patients during the last few years, although he had tried hydrocyanic acid; but, perhaps, the absence of success was owing to his having administered it per rectum. Formerly, his plan was, if the pulse indicated it, to bleed, give physic, use counter-irritation and injections, with quietude. He had cured one case with turpentine administered through the nostrils in four-ounce doses. He had also used opium with success, and had tried tincture of aconite, but did not approve of it. He had seen tetanus in two, two-year-old, colts brought on by exposure. Both died in about eight hours from the commencement of the attack. A year ago he witnessed two cases of idiopathic tetanus in cows; they also died. The cases he had seen recover, generally speaking, were, as far as he could remember,

of the subacute kind. Mr. Lawson would, perhaps, state his opinion as to administering the acid by the rectum.

Mr. Lawson, in replying, said Mr. Taylor had found fault with him because he had not entered more into the pathology of the subject. He (Mr. Lawson) did not give more information on that point simply because he did not know any more, and it was doubtful whether any one knew much more than he did. He had not used aloes since he adopted this system, nor had he ever given hydrocyanic acid per rectum, but always by the mouth. He should not be exaggerating if he said that before resorting to this method, of twenty patients, no fewer than nineteen died. With regard to the use of the acid, he did not wish to hold out that drug as a *specific* for tetanus. He simply wished to give the result of his own experience of its use. He had found it to answer the required purpose much better than any other drug he knew of. Others would probably adopt this treatment; but, at the same time, he should be very glad to hear of some gentleman bringing forward another mode of cure, that might be of as much, or even of more service to the profession. It should also be remembered that he did not wish to convey the idea that the application of hydrocyanic acid in cases of tetanus was his own discovery. He was indebted to the late Mr. Poett, Veterinary Surgeon, 7th Dragoons, for the information. He (Mr. Lawson) did not think there was anything which would cure all cases of tetanus. He had found that, of eleven patients subjected to this treatment, nine were cured, whilst the remaining two were almost impracticable cases. To a remedy that would effect as much as that they were bound to accord great credit, and to continue its use. He did not use aloes for tetanus because it did nothing but harm. Most of the cases he alluded to in his essay were of the subacute class, and two or three of the acute. He thought a great deal depended upon keeping the animal quiet, but he was quite certain that hydrocyanic acid, given in small doses, possessed great action in relieving the spasms, and also in allaying the nervous irritability and excitement. He felt confident of that. When he tried three doses in a day, the patient became excited, and was very much the worse for the additional quantity. He discontinued it, and substituted a dose night and morning, and all went on well afterwards.

Mr. P. Taylor asked if Mr. Lawson slung his patients.

Mr. Lawson replied that he did not. He let them lie down, but if they became excited when down he got them up directly. If, however, he found that a horse could not stand he would not hesitate to put him in slings, but, if possible, he would refrain from it, in order to avoid irritation.

Mr. Broad remarked that he lent his slings to a neighbouring practitioner who had a horse down. The case turned out successful, and he believed no medicine was used. He (Mr. Broad) had tried strychnine in one instance. It was administered in rather large doses, which made the horse very excitable. It was a somewhat

aggravated case. He used grain doses three times a day. The first dose relaxed the spasms, and eventually the patient died.

Mr. Lawson said that in one case he gave nux vomica and belladonna, and managed better than he had done before. The patient had the appearance of doing well for about a month, but, at last, it became worse and died.

Mr. Haycock rose to speak of the action of hydrocyanic acid. He said that he had tried it on the healthy animal, and had arrived at the conclusion that it had but little effect. When he gave large doses, disturbance sometimes ensued, but the effect of that dose, whether it was given by the rectum or by the mouth, was not a direct proof that the acid could produce effect beyond what anything else would produce, say an ounce of gruel given in the same way. He had seen very serious disturbance follow the administering of warm water by injection. It was, therefore, scarcely conclusive to say that hydrocyanic acid produced disturbance in consequence of its medicinal action. With regard to his own treatment, he had tried aconite, and found it to be a powerful sedative. He had resorted a good deal to Fleming's tincture of aconite, in two- or three-drachm doses, largely diluted with water. In using strychnine he found the effects to be such that he determined not to resort to it again; but upon reducing the quantity of the dose he found great benefit from it. With regard to trituration, he thought what was called the third trituration was the best preparation that could be used. By giving small doses of strychnine in the same way a decisive effect was produced upon the bowels. He had given belladonna in two cases with benefit, using the plaster externally, and daubing the wound with it. Opium he had also used, but, deriving only little benefit from it, he did not resort to it again for a long time. Chloroform he had seldom used without benefit; but with respect to that drug, as with many others, the full benefit would not be derived unless due regard was had to the time of giving it. If drugs which might be of benefit when given within ten days or a week were administered at the commencement, they would produce no effect whatever. He remembered a case of idiopathic tetanus which he treated first with nux vomica and belladonna. On the sixth day he gave chloroform, which produced a stop, and no further change took place until the spasm seemed to fall back again. He then administered the drug in thick flour gruel, and the effect was marvellous. The animal began to improve at once, and the use of the drug was continued until she was quite well. In all cases where he had recourse to chloroform for tetanus he had found that the system seemed to get, as it were, used to its action; but there was one fact which should be borne in mind—he had never found any benefit when it was given at the commencement. The way he administered it was two ounces of the drug, by measure, to two quarts of thick cold flour gruel, to be shaken well, and given in doses of two or three small horns, which held about two ounces each, several times a day. The application of drugs by the rectum he had tried often enough, but he had not much to say

in favour of that method. The use of aloes he had discontinued years ago, and he did not believe in that drug at all. His father cured a traumatic case by brandy in large doses, besides which only two small doses of aloes were administered. The patient was about a month on the way. Cold water he (the speaker) had tried in every mode that had hitherto been conceived, but he had nothing to urge in its favour. He had also tried hot water and the steam bath. In one very severe case he adopted the latter course. The case was of the traumatic class, and a mare. She was treated with all the gentleness that could be devised. A temporary bath was constructed for her reception. Steam was let into it, but the experiment produced no beneficial effect, and eventually the patient died. His most successful treatment was with small doses of aconite, chloroform, and Fleming's tincture, two or three drops diluted with water, and given two or three times a day.

Wounds he invariably lanced, if there was heat, disturbance, or unnatural dryness about them. To the remarks he had offered on the use of hydrocyanic acid he could only add that, if they ever got a healthy patient that had to be destroyed, they had better try the effects of a double quantity. By that means they would be able to ascertain what effect the drug produced upon an animal in a healthy state, as well as in a state of disease.

Mr. Cartright, of Whitchurch, said it seemed to him as if there was something inexplicable in the subject, for it was a most extraordinary fact that, in the course of forty years' practice, he had met with only one case of tetanus, and that was during his time at college. The patient was a pack-horse, whose tail, being curved, was amputated high up. The animal died. He had seen a case of tetanus in a dog.

Mr. Broad remarked on the great difficulty of administering the medicine to these patients, and made some suggestions on the subject.

The President then drew the discussion to a close. He said that it would be quite unnecessary for him, at this late period of the evening, to sum up at any length, or even to make any observation, though he could refer to several successful, as well as many unsuccessful cases which had been under his treatment. His thirty years' practice had been attended with scarcely anything but non-success in tetanus. He had had recourse to bloodletting and the application of sheep-skins, blisters, and mercurial ointment, from the neck to the tail. In one patient he used rowels in the thighs in addition, and this case recovered; but when other patients were subjected to the same treatment they died one after another. He had lately had an opportunity to put *Mr. Lawson's* method of treatment into practice. The case occurred in a large well-seasoned cart-horse. He commenced with him in its early stage; he gave six drachms of aloes, which, however, neither nauseated nor purged. He then administered half-drachm doses of the acid twice a day. The animal lived twelve days. He believed the patient would have eventually recovered; the jaws were considerably relaxed, and he

would eat four half-pailfuls of boiled barley in a day ; but he unfortunately got down, and the spasms were frightful. In this case the rigidity was most marked in the loins. The violent symptoms increased so alarmingly that the owner begged that the patient might be destroyed. The animal was raised up, but was so prostrated that he got down again. He was then put into slings, and properly steadied upon his legs for half an hour ; but the prostration was so great that he had to be let down or he would have died in them. Both his fore and hind legs failed him. In this stage the slings appeared to do more harm than good ; they increased the excitement and brought on more violent paroxysms. Through the kindness of the essayist he had been enabled to make an inspection of this horse's brain and medulla spinalis. He found the brain to all appearance perfectly free from disease, and that the medulla spinalis was of one uniform colour throughout its entire length, excepting about six inches of it, which was located in the sacrum. Here it was much darker in colour, and its structure was completely broken down ; in fact, it was approaching putridity. The horse had been dead about twenty-eight or thirty hours.

Soon after this, through the kindness of the same gentleman, he had an opportunity of seeing another medulla spinalis from a horse in whom tetanus had not existed. In this animal the same length of time had elapsed after death as in the case of tetanus ; but he found that throughout its whole length the medulla spinalis was of one uniform consistency and colour. It was very much denser and firmer than the other ; in fact, its structure appeared perfect. It is true the specimen had been in alum and water for several hours ; but he could not for one moment believe that that circumstance caused the great difference in its condition when compared with the other.

With regard to Mr. Lawson's instrument, he could assure the gentlemen present that it is most simple, and it offers the most gentle mode of administering medicine ; but even with it, and using all the care and gentleness possible, you cannot avoid causing some alarm and excitement, and most likely some paroxysms, because you are obliged to raise the head a little. He found that he could give the dose better when he used a small brass or ivory syringe tipped with a quarter of an inch gutta-percha piping, about ten inches long. This he quietly passed into the mouth, and gently raised the head and injected every drop. The smaller the dose the more easily can it be taken, and less will be wasted—say two table-spoonfuls of water and half a drachm of the acid as the maximum dose. Experience had shown him that any treatment which produced excitement of the patient was the worst plan that can be resorted to. The experience of gentlemen present has shown that seclusion, quiet, and a dark place, are the best remedies ; that bleeding, purging, blistering, fomentations, and sheep-skins, did much more harm than good. Drenching through the nostrils was an act to be deprecated. Slings, judiciously applied, so as not to annoy or alarm, might prevent the patient getting down, which must always be avoided if possible. Where medicine is considered necessary, the use of the drug which

has been so strongly recommended by the essayist is the best known for the purpose at the present day. It would appear that it is not essential to success to pay attention to the bowels in these cases.

On the motion of *Mr. Broad*, seconded by *Mr. Dray*, a vote of thanks was awarded to *Mr. Lawson* for his excellent paper. A similar compliment was also paid to the President, and the proceedings terminated.

Mr. Howell, of Rochdale, kindly volunteered to read a paper on "Puerperal Fever in the Cow," at the next meeting, in December.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE fourth quarterly meeting of this Society was held on Friday, October 21st, at Newcastle-on-Tyne, and was tolerably well attended.

Amongst other business which occupied the attention of the members was the subject of holding meetings alternately at Newcastle, Durham, or other towns, as may be decided upon by a majority of the members at a preceding meeting. A notice of motion to this effect was laid on the table for being finally dealt with at the next meeting. The full importance of such a step on the part of the Society was readily admitted by all present; and it was determined to meet the proposition with all the consideration which it deserves, under the hope that those practitioners in the south part of Durham county will come forward and meet their professional brethren of the Association, and thus aid in perfecting a great principle so successfully commenced, viz., that of cementing together one whole brotherhood in one common bond of union, good feeling, and desire for advancement.

It was also agreed that, at the general annual meeting to be held on Friday, January 20th, 1865, when the election of the officers for the year takes place, and other business of importance is transacted, the members shall dine together.

Mr. Hunter, of Newcastle, afterwards read his promised paper on "Navicularthrits," from which we extract a few points.

Mr. Hunter said—

"It does not occur that I have anything novel to advance with regard to this disease; but rather that I am anxious to have it thoroughly ventilated by a free discussion and statements of the members present. It is only by such means that we can arrive at an approximation of the truth.

"I believe this disease to be very generally prevalent wherever there are hard roads, and horses are required for quick work. Being recently in Antwerp and other Continental towns, I was quite astonished at the number of lame horses which I saw, mostly cab-horses, many of them suffering from this disease. It is in this

class of horse that navicularthrititis mostly prevails, partly owing to the nature of the work assigned to them, and also to their being condemned to the same after having previously contracted the affection elsewhere.

“The seat of navicularthrititis is the navicular joint or capsule, which is formed by the perforans tendon as it passes over the os navicularis. The structures entering into its composition, and subject to the changes constituting the disease, are—bone, fibro-cartilage, tendon, ligament, and synovial membrane.

“It may originate from a variety of causes, all, however, tending to the same result, viz., ulceration of one or more of the structures already named. Hereditary predisposition has a great deal to do with its production, less exciting causes being required for its complete development; conformation may also be classed among the predisposing causes, animals with short upright pasterns, stumpy low articulations, being more liable; fibrous laceration of the tendon on its passage over the bone, forming a more acute angle in such states, also inevitable; or the bone itself is bruised, and undergoes the process of inflammation, which, if not relieved, results in ulceration of its cancellated structure, and gradually extends from within outwards, until the dense covering of bone and cartilage becomes involved in the same action.

“In animals of this formation there is greater probability of the disease assuming a chronic character, from the peculiar modifications given rise to.

“Although I believe it to occur in animals of the formation alluded to, it is frequently met with in others of quite the opposite form—with good open feet, bulbous frogs, and in flat feet with low weak heels. In such cases I consider it to arise from a direct bruise from below, as by suddenly coming down upon a loose stone in progression. Animals that have been kept in a state of inactivity for some time and afterwards put to severe exertion, are rendered more prone to contract the disease, owing to the secretion of synovia being diminished from absence of the stimulus of movement.

“The symptoms indicative of the disease are lameness in one or both fore feet; seldom in both to the same extent. Contraction is only associated with confirmed cases. If the foot be lightly struck with a hammer over the seat of disease the animal will wince. He goes on his toes, and, when standing in the stable, points with one or both feet. The temperature of the parts is variable. In progression he goes best up rising ground, the step being short and quick. The sole becomes concave, foot and pasterns more upright, and general action stilty or groggy.

“The treatment required will depend greatly on the stage. In the primary condition antiphlogistic measures are called for—bleeding from the foot, hot fomentations and poultices, the sole having been well thinned previously with the drawing-knife. The animal should also be kept quiet, and cathartic and fever medicine exhibited. If the parts are not relieved thereby, counter-irritants should

be applied to the coronets. By adopting these measures I have frequently succeeded in arresting the progress of the disease.

“In other instances the disease has continued without the slightest impression being made upon it; in which case I resort to the introduction of a frog-seton as the most likely means of affording relief, by bringing our treatment more directly in contact with the parts under the diseased action. I must state, however, that even this treatment I have found very uncertain; perfect success gained in one case is no sure guide to the same result, or a valid reason for its subsequent adoption, in a second. If, after all these means have failed, and our patient probably of very little service, we have recourse to the operation of neurotomy—in performing which it is necessary to take into consideration the suitability of the foot to undergo the wear and tear to which it will be subject afterwards—if it is a good strong foot there will be comparatively little danger of after ill-consequences; if a thin, weak foot, it would be very liable to become bruised, and sloughing to take place as a natural result.

“The immediate effects of the operation are instant relief from pain; and as a result, probably, ulceration may be arrested, granulations and plastic lymph thrown out, joining the tendon and bone together, thus preventing motion, and causing the animal to go stiffly, a termination probably brought about by the extra weight now imposed.

“If ulceration of the tendon or bone has proceeded to any considerable extent, either is likely to give way under the weight thrown upon it.

“Sometimes one posterior branch of the nerve below the fetlock alone is divided, thus depriving the foot partially only of its sensation, a plan which finds favour with some practitioners.

“In all cases where navicular disease is decidedly in existence, I think it very desirable to shoe with leather soles and stopping.

“In concluding these remarks on navicular disease, I cannot but think that its existence is by no means so frequent as generally supposed, and that other pathological conditions of the feet, the nature of which have not been so much investigated, are confounded with it.”

The discussion which ensued occupied the whole of two hours, and was ably supported by the President, Messrs. Thompson, Dudgeon, M'Gregor, Hunter, Armitage, and many others, the remarks of the President being worthy of great reflection.

Mr. Armitage spoke of the evidences which had come before him, indisputably claiming for the disease hereditary tendencies; but of its frequent occurrence among our hard-worked town, trade, cab, harness, and dray-horses, &c., that state which had been so confidently asserted as being in these animals navicular disease he was disposed to deny. Many cases treated as such, and, of course, unsuccessfully—thereby stamping the character of incurability and intractability to a disease which has no other evidence of existence but in imagination—if properly examined, their

previous history obtained, and the maltreatment to which the feet had been subjected in shoeing fairly considered and contrasted with the requirements and adaptation of the parts—in a word, physiologically appreciated—would undoubtedly be found to be disease of the laminae, coffin-bone, &c., with their concomitant effects. The system of shoeing he felt convinced worked irrecoverable ruin upon our hard-worked horses; and where exemption from these consequences are fortunately present, it has resulted chiefly from what has not been done, rather than from pursuing the system of reducing of the feet for the so-called purpose of preparing the foot for the shoe, a practice indulged in to the detriment of a large per-centage of our town horses in a special degree. It is a practice too common among our horse-shoeing community, and is best known as being the principle of “breaking a man’s head, and putting on a plaster afterwards.” The feet are reduced by that modern invention, the drawing-knife, in an ‘unnatural and unwarrantable degree; and, again, by the nails, both from their form and manner in which they are being driven; this course, repeatedly carried on without a corresponding reproduction being possible between each shoeing, is compensated for by leather soles and stopping. The foot properly kept needs no stopping. The system of “thumbing” the sole, as advocated by Mr. Miles, is a most absurd practice, and only actuated by an entire ignorance of the nature of the parts. Paring the feet of animals to such a degree in these cases of lameness is productive of a greater aggravation of the disease; a proper system of shoeing being the best preventive as well as remedial treatment.

Mr. D. M'Gregor much approved of the practice followed and taught by Mr. Gamgee, senior, viz., to avoid such paring, but to protect the foot by nature’s provisions, and agreed with the last speaker in the tenor of what had been said.

Mr. Thompson believed it to be a safe rule to dress out the feet both for shoeing and treatment of these cases of lameness, the exceptions to which, however, being those feet with thin weak hoofs.

Mr. Dudgeon agreed in some measure with Mr. Thompson, and advocated the use of stopping to horses’ feet to prevent their becoming hard, which he considered was a forerunner to diseases.

Mr. Hunter very ably replied at the close to the various arguments adduced by the speakers, and supported the views propounded in his paper.

As to treatment of navicularthrititis, it was generally acknowledged but few good results accrued from that mostly adopted and recommended; neurotomy in a majority of cases offering the greatest chances of success, though by no means without great objections to its general adoption. Frog-setons afford but very temporary relief, but are greatly assisted by rest and blisters to the coronet, &c.

The President concluded the discussion by a lengthened consideration of the subject under discussion, and an analysis of the statements which had fallen from the speakers, urging his conviction that

navicularthrititis was not so prevalent as supposed, and that most of the diseases existing in horses' feet, and confounded with it or mistaken for it, arose and are aggravated by the system of cutting away the feet as described by previous speakers, states being induced thereby which proved as intractable as they were aggravated.

A very interesting specimen of horny tumour in the hind foot was exhibited by Mr. Armitage, which went far to illustrate the ideas he entertained towards foot diseases, and created an animated discussion upon the nature of such occurrences. There was also added a folding balling-iron for the pocket; a contrivance for putting a triangular point to pins used for sutures, and a pocket balling-gun for foals, all having for their recommendation simplicity, portability, and effectiveness for the several purposes for which they were intended. A vote of thanks proposed to the essayist and President respectively, being carried unanimously, the proceedings, with which each member was highly satisfied, were brought to a close.

Mr. Armitage promised to bring forward a paper for the next meeting.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD OCTOBER 5, 1864.

PRESENT:—The President, Professor Spooner, and Messrs. Braby, Broad, Brown, Cartledge, Ernes, Greaves, Harpley, Harrison, Helmore, Lawson, Mavor, Moon, Pritchard, Robinson, Secker, Thacker, Wilkinson, Withers, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

A copy of the letter of condolence to the widow of the late Professor Miller was read, together with Mrs. Miller's reply, thanking the Council for their kind expression of sympathy in her late bereavement.

The Secretary read the correspondence which he had had with the Secretary to the Scotch Board of Examiners relative to a breach of the Bye-laws in the case of Mr. James Taylor, who had been examined, and obtained a diploma, without having strictly complied with the provision of Bye-law 27.

On the letters being read, a short discussion took place, when

It was moved by *Professor Spooner* and seconded by *Mr. Brown*—

“That, as Mr. James Taylor had been admitted to his

examination for the diploma of the College, and passed by the Court of Examiners, without having given the required notice to the Secretary, in accordance with Bye-law 27, he be admitted a member of the corporation; but that the decision of the Council in this case—if in the affirmative—be not considered as constituting a precedent.”—Carried.

The Registrar notified that five deaths had been returned to him during the last quarter, *viz.* Mr. Thomas Burton, London; Mr. John Brown, Warwick; Mr. William Cook, Willesborough; Mr. Robert Ousey, Ashton-under-Lyne; and Mr. John Ellis, Vice-President and Member of the Council, Liverpool.

The Registrar also laid on the table a proof of the *Addendum* and Revised List of the Members of the College.

On the report being received, It was moved by *Mr. Ernes* and seconded by *Professor Spooner*—

“That 500 copies of the *Addendum* and Revised List be printed, and that they be distributed gratuitously, with the Registers now on hand.”—Carried.

It was also moved by *Mr. Wilkinson*, and seconded by *Mr. Secker*—

“That an advertisement be inserted in the journals, stating that the Register can be had gratuitously on application to the Secretary.”—Carried.

Mr. Lawson directed the attention of the Council to the correspondence he had had with Dr. Struthers, relative to a remuneration for his future services as Secretary to the Scotch Board of Examiners.

A considerable discussion ensued as to the duties of the office, and also with reference to the distance that Dr. Struthers now resided from Edinburgh.

It was moved by *Mr. Ernes* and seconded by *Mr. Wilkinson*—

“That the Secretary furnish the Council at its next meeting with full particulars of the duties required, and that the question of the appointment and remuneration of a Secretary to the Scotch Board of Examiners be postponed until then.”—Carried.

The subject of the continuation of the allowance to Mr. Gabriel was next brought forward, when the Secretary read a letter which had been received from Mrs. Gabriel to the effect:—That owing to her husband’s increased infirmity of body and mind, she regretted being under the necessity of asking for a renewal of the grant so generously conceded by the Council in former years, the continuation of which was of the greatest importance to him.

It was moved by *Mr. Wilkinson*, and seconded by *Professor Spooner*—

“That an allowance of £50 to the late Secretary, Mr. E. N. Gabriel, be granted for another year.”—Carried.

The Finance Committee reported that they had examined the vouchers and receipts of payments during the preceding quarter and found them correct. The quarterly balance sheet of the Treasurer’s account showed that the liabilities for the quarter ending October 1st, amounted to £71 14s. 8d., which they recommend should be discharged. This would leave a balance in hand of £598 18s. 9d. The Committee also drew the attention of the Council to an outstanding account of Mr. S. Garrard, the legal adviser of the College.

It was moved by *Mr. Cartledge*, and seconded by *Mr. Brown*—

“That the Report of the Finance Committee be received.”

On this being carried, it was then moved by *Mr. Ernes*, and seconded by *Mr. Helmore*—

“That it be adopted.”—Carried.

It was next moved by *Mr. Ernes*, and seconded by *Mr. Lawson*—

“That Mr. Garrard be requested to furnish the particulars of his account.”—Carried.

It was moved by *Mr. Ernes*, and seconded by *Mr. Braby*—

“That an examination of the pupils take place in the week before Christmas.”—Carried.

It was moved by *Mr. Braby*, and seconded by *Mr. Lawson*—

“That the Treasurer be authorised to draw a cheque for the Examiners’ Fees.”—Carried.

Notice of motion in connection with Bye-law 27 was given by Mr. Braby having reference to an increase of the Examination Fee. It was ordered to be suspended in the Board-room for three months.

At the conclusion of the general business, *Mr. Lawson* expressed the deep regret which the Council felt at the loss the profession had sustained by the lamented death of Mr. Ellis, and moved—“That a letter of condolence be forwarded from the Council to his widow.” The motion was seconded by *Mr. Secker*, and was carried unanimously.

Cheques were ordered to be drawn for the current expenses.

By order of the Council,

WILLIAM HENRY COATES,

Secretary.

THE PRESIDENT'S BANQUET IN BIRMINGHAM.

THE President of the Royal College of Veterinary Surgeons, Mr. R. L. Hunt, invited a large number of its members to a banquet, at the Plough and Harrow Hotel, Edgbaston, on the 28th instant. Amongst those who attended were Mr. William Field, London, late President of the College; Mr. J. Sampson Gamgee, Surgeon to the Queen's Hospital, Birmingham; Mr. Lawson, Manchester, and Mr. Cartledge, Sheffield, members of the Board of Examiners for Scotland, and of the Council; Mr. Greaves, Manchester, President of the Lancashire Veterinary Medical Society, and member of the Executive Council; Mr. Charles Hunting, Durham, and Mr. C. E. Dray, Leeds, respectively Presidents of the Veterinary Medical Associations of the North of England and of Yorkshire; Mr. Walters, Mr. J. Marston Parker, Mr. E. Stanley, Mr. Davy, and Mr. Tailby, Birmingham; Mr. Blakeway, Stourbridge; Mr. Harbor, Kidderminster; Mr. Perrins, Worcester; Mr. Rose, Warwick; Mr. Elkington, Coventry; Mr. Huntriss, Dudley; Mr. Cartwright, Wolverhampton; Mr. Woodger, London; Mr. Litt, Shrewsbury; Mr. Carless, Stafford; Mr. J. C. Broad, and Mr. J. B. Henderson, London; Mr. T. D. Broad, Bath; and Mr. Leech, Bakewell. The loyal toasts having been duly honoured, the *President* proposed "The Royal College of Veterinary Surgeons." In doing so he observed that he quoted the corporate title in its widest and most correct sense. He doubted if all the members who honoured him with their presence, much more the general body of the profession, formed a just estimate of what was implied by the legal designation of the Veterinary Medical and Surgical body, incorporated in the seventh year of our most gracious Sovereign's Reign. Many imagined that the Royal College of Veterinary Surgeons was merely the institution in Red Lion Square, London, where the Executive of the profession regularly transacted business, and the annual meetings were held; whereas that was only the official headquarters of the body corporate. The Royal College of Veterinary Surgeons consisted of the entire profession, as by law established throughout Her Majesty's Dominions. The charter of incorporation gave to each member admitted into their body, after test of his education and proficiency by the Board of Examiners, full and equal share in the electing of the Council, and in the custody and furtherance of the general interest. Lest his memory should betray him, the Chairman begged permission to quote, in support of his interpretation, the exact words of the charter, which declares, that "all persons as respectively now are, and may hereafter become, students of the Royal Veterinary College of London, or of the Veterinary College of Edinburgh, or of such other veterinary college, corporate or incorporate, as now is, or hereafter shall be, established for the purposes of education in veterinary surgery, whether in London or elsewhere in our United Kingdom, and which we or our royal successors shall, under our or their sign manual,

authorise in that behalf, and shall pass such examination as may be required by the orders, rules, and bye-laws, which shall be framed and confirmed pursuant to these presents, shall, by virtue of these presents, be '*members of, and form one body politic and corporate, by the name of the Royal College of Veterinary Surgeons.*'" After granting privileges relating to succession, the common seal, the power of legal representation and purchase and sale of property, the charter proceeds to enact, that the veterinary art, as practised by the members of the said body politic and corporate, shall henceforward be recognised as a profession; and further, that the Royal College of Veterinary surgeons shall "act and do in all things relating to the said body politic and corporate, as fully and effectually to all intents, effects, construction, and purposes whatsoever, as any other of our liege subjects, *or any other body politic and corporate* in our United Kingdom of Great Britain and Ireland." The President contended, that by these and the other very wise and liberal stipulations of the Royal Charter, the veterinary profession was put in possession of that which for many years had been, and still was, the undisguised want of the medical profession—a deed of incorporation with equal constitutional power and representative faculty to members. He trusted that he might be excused suggesting, that if every legally qualified veterinary surgeon would study the charter, and form an independent and sound opinion of the advantages it conferred upon him, their annual meeting in May would be more numerously attended than was generally the case, and that they would be strengthened whenever they had to seek extended privileges from the State, by the conviction that they had duly valued, and put to use, those they now enjoyed. It was perfectly true, that the first thought of every member of a society should be the discharge of duty in the particular sphere in which he is placed; but it is equally true, that no amount of industry and ability displayed by individual labourers in their own interest, exempted them from the obligation of doing something in their corporate capacity, for the general benefit of their brethren. In the position in which the members of their Council were pleased to place him, he felt very weightily the responsibilities attaching to the honorable office of President, which, he never for a moment forgot, was the highest open to any member of their body; in fact, it was the highest dignity to which any of them could aspire; for what honour could equal that conferred on a man by his most competent judges—his fellow-labourers in the same calling? At the same time he admitted, and he desired to do so most cordially and gratefully, that his task had been greatly facilitated by the example of preceding Presidents; one of the most distinguished of whom had been good enough to favour the meeting with his company that evening. Mr. Field's family had been first in their ranks from the earliest days of the London Veterinary College; and they all remembered how, in the many corporate offices he had filled—as member of Council and of the Board of Examiners, as Vice-President and President—Mr. William Field

had given them the full benefit of his learning, of his great experience, and of his high social position. That gentleman's presidential year would ever be memorable in the annals of our body, for the presence of Royalty at the annual banquet at the Freemasons' Hall in the metropolis. No doubt the Duke of Cambridge, in graciously coming amongst us, was actuated to some extent by his estimate of the importance of our profession, more especially in connection with the artillery and cavalry of the great army so ably commanded by the Royal Duke; but it cannot be doubted, that the chief cause of the visit of the Duke of Cambridge was his desire to testify the high esteem in which he held the President, Mr. William Field. A scarcely less memorable event in the same year was the conversazione in Red Lion Square, where Mr. Field assembled to meet us a large number of those most famous in the Sciences, Lettres, and the Arts. He (the Chairman) could not hope entirely to follow, much less to rival such an example, but he had done his best; and not his least desire was, whilst endeavouring to worthily fill the presidential chair, to promote the social intercourse of his brethren in a manner deserving their unquestionable merits. He had much pleasure in proposing "The Royal College of Veterinary Surgeons, and Mr. William Field."

Mr. Field, in acknowledging the toast, succinctly referred to those great changes in the profession of which he had been a witness, and gave expression to his implicit hopes for the future, provided the members of the corporation followed his friend the President in endeavouring to act up to the spirit of the charter.

The Chairman, in proposing the next toast, said he had to ask them to drink success to the Veterinary Medical Societies of England. Their table that evening was honoured by the presence of the Presidents of three of those bodies, and to prove the utility of unions of this kind he had only to bring to mind, what no doubt was fresh in the memory of many of them, the remembrance of the parent society that was in existence in their College days, when their indefatigable preceptor, Professor Morton, was its guiding star, and which, no doubt, had done much to provoke the thought of establishing these branches in later days. He (the Chairman) had had the privilege of being present at one of the meetings of the North of England Association at Newcastle-upon-Tyne, and also at one at Manchester, when Mr. Lawson brought before the members of the Lancashire Society his very able paper upon Tetanus; and although the scientific facts elicited upon these occasions were of immense value, still the utility of these meetings extends further, by bringing together, in friendly intercourse, the members of a district, dispelling the little coolnesses that might otherwise exist, giving opportunities for consultation, business arrangements, and other details, that all tend to cement men together in one common cause. He hoped that a Midland Counties Association might be formed; not that it was needed in this town on the score of unity; for he thought that Birmingham rivalled any town in England for the kindly feeling of its practitioners. At that moment there were no less than six members out of the seven present, and the absentee had by letter expressed

his regret at being detained by urgent professional business. He was glad to have the opportunity of expressing his deep sense of gratitude for the uniform consideration that he had always received from the hands of his brother practitioners. He would propose success to the "Veterinary Medical Associations of England," and the health of Mr. E. C. Dray, of Leeds; Mr. Greaves, of Manchester; and Mr. Hunting, of South Hetton.

Mr. Edward Colman Dray said—For the very kind manner in which his health had been proposed as President of the Yorkshire Veterinary Medical Association, he begged to tender his best thanks. The chairman, in wishing continued success to Veterinary Medical Associations, had expatiated in such an able manner on the advantages derivable from these societies, that it was needless for him to add but a few observations. The object of these associations is the advancement of our profession, and he firmly believed the foundation of them is now correctly and permanently laid, and hence will follow the sure and gradual extension of the superstructure. The periodical meeting together of the members of our profession must necessarily be productive of good; there now exists a bond of union which was much required before these associations were established. They have a tendency to check backbiting or ill-natured remarks, and the oftener we meet, we not only become better acquainted with each other, but the constant interchange of opinions, stating the results of our different modes of practice, will inevitably bring not only lore to the mind, but raise our status. He felt certain that the time would come when any one would feel ashamed if he had to acknowledge that he was not a member of a Veterinary Medical Association. He therefore advised, not only that those who are not members be enrolled, but an extension, or formation of more associations in other counties. The power and support these associations may be able to give the Council of the Royal College of Veterinary Surgeons of England, no one can foresee. As Mr. Greaves and Mr. Hunting will address you on the same subject, I beg leave, in conclusion, to state that since I have had the honour of being President of the Yorkshire Association perfect unanimity and harmony have marked our meetings.

Mr. J. Sampson Gamgee, in proposing "The Boards of Examiners of the Royal College of Veterinary Surgeons," expressed regret that neither Professor Gamgee, senior, nor Professor John Gamgee, had been able to absent themselves from Edinburgh to share the enjoyment and honour of that evening's entertainment. I cannot but feel (Mr. Gamgee continued) that it would most probably have been impossible to propose this toast but for the action of our President. I do not mean by his invitations to this splendid banquet; but by his influence, first, as an independent member of the body corporate, and subsequently as a member of Council in securing scope for the operation of the Scotch, as well as the English, Board of Examiners. The northern Board, be it remembered, had practically ceased to exercise its functions for some years before the annual meeting of 1858, when Mr. R. L. Hunt asserted and maintained the right of every member to discuss the report of the Council,

The feeling which our President then initiated soon resulted in the emancipation of veterinary education from fetters which had all but fatally paralysed the corporate life, by Royal Charter, given to the veterinary profession. I make this allusion solely as a matter of historical interest, for nothing is further from my intention than to revive the memory of struggles happily past. I, for one, feel that great and ennobling as is the pleasure experienced in contention for great principles, it must yield to the enjoyment of a spirit of conciliation, once the battle is over, and the object won. Nevertheless, dispassionately and impartially, do the events of history require to be called to mind for present instruction and future guidance; and it is because the period and events to which I am now referring are full of interest to the body corporate of which, in common with yourselves, I have the honour of being a member, that I trace this retrospect, and take a glance at its causes and probable results. So long as the Royal College of Veterinary Surgeons obtained its candidates for membership from two schools, of which one headed a schism of the young profession, and the other pursued a scarcely less disastrous plan of action, our Council was under such coercion, that independent action was out of the question. That anomalous state of things ceased, once and for all, with the incorporation of the New Veterinary College of Edinburgh; for by that Royal Act the monopoly of the schools was destroyed. You will, I am sure, gentlemen, pardon me in referring to the course adopted by my brother, Professor John Gamgee, at the critical period to which I am alluding. With the example before him of the old schools, and examining their policy to the profession, he felt that it was high time a new path should be struck out. The difficulties seemed insurmountable, and the temptation to avoid some of them was great, but he never swerved from the straight course in endeavouring to advance veterinary education, and to consolidate and foster the corporate interests of the profession. How far these objects have been attained, it is not for me to judge, but the words of the toast, and the presence amongst us of two distinguished members of the Scotch Board of Examiners, remind me that, at any rate, with the incorporation of the New Veterinary College, the great object was gained of establishing our corporate profession on the sound basis of a plurality of schools awakened to the pressing necessity of self-preservation by the healthy stimulus of unrestricted competition. Nevertheless, it cannot be doubted that some at least of the professors continued to cherish the idea that the charter gives no power to the Royal College of Veterinary Surgeons to interfere with veterinary education; this is certainly true in the sense that the President and Council have no right of interference within the precincts of the existing schools, but it is equally true that our Boards of Examiners are unfettered in the exercise of their discretion as to the standard of competency to qualify for admission to membership, and as to the process by which it is to be tested. I am of opinion that when this latitude of examining power shall be duly understood, your Council and their specially appointed examining officers, will powerfully stimulate veterinary education

and increase the activity of rival schools to fit their pupils for the standard appointed by the constitutional representatives of the profession. When it is desired to improve a breed of animals, or an agricultural operation, exhibitions are organized, prizes offered, and judges appointed to award them. Reliance is placed on the spirit of rivalry, and on the ambition to excel, implanted in the human breast, and the result in practice amply supports the proposition, that if a reward or distinction be offered for an improved article, efforts will be made to produce it in direct proportion with the magnitude and importance of the prize offered. The work must necessarily be of slow development; but provided the examinations were so framed as to elicit knowledge of the right kind, I have no doubt that in a very few years the effect in the schools would be most perceptible. Much as it is to be desired that the more essentially scientific part of the educational course be better cultivated, great care must be taken not to neglect those useful, and mistakenly termed *humbler* branches, without which the stock of professional knowledge cannot be complete. By all means let a candidate for the diploma be versed—the more profoundly the better—in anatomy, physiology, and the allied sciences, but very good care must be taken that he is soundly informed on such great and fundamental subjects as lameness in horses, and the domestic management of cattle in health and disease. The laudable desire to raise the profession, and to be esteemed gentlemen, has, I fear, misled some well-intentioned but narrow-minded persons, who have taught young men that, by taking off their coats and soiling their hands, they would lower their dignity. Such men have mistaken their vocation. As a surgeon, I deem myself bound to do everything, for even the poorest of my hospital patients, that can contribute to the cure of disease or to the relief of pain. What more ennobling after aspiring to the comprehension of nature's highest truths, than to practise the great teaching of nature in all her works—completeness in every detail—neglect of nothing, however seemingly trivial, that can contribute to the attainment of the end in view. It is this knowledge of detail and thoroughness in practice, as well as acquirement in learning, that it is to be hoped that the Boards of Examiners maybe instructed by our Council to test more and more fully, and to stimulate the cultivation of. Happily we may be quite confident that, in whatever measure the Boards of Examiners of the Royal College of Veterinary Surgeons for England and Scotland can help the progress of veterinary education, and of our corporate interests, they will never be found wanting, so long as they are composed of such distinguished men as those who now form part of them. Mr. President and gentlemen, I have much pleasure in proposing “The Boards of Examiners,” and to couple with it the name of my friend Mr. Lawson.

Mr. Lawson, on rising, said—I regret that you have not coupled the name of my friend on my right, Mr. Cartledge, with the health of the Court of Examiners, as I am sure he would have been able to respond to it much more efficiently than myself. This is more

particularly necessary on the present occasion, after the very eloquent and discursive manner in which the toast has been proposed by Mr. Gamgee. I certainly am of opinion with Mr. Gamgee, that the progress of our profession in a great measure, if not entirely, depends on the degree of education and general intelligence existing among its members; and that the united efforts of the various schools, together with those of the Council and the Boards of Examiners, are more than ever necessary to achieve and maintain this most desirable result. Reference has been made to the relations existing between the Examining Boards, the Council, and the schools. Now I think these are pretty well defined. The duties of the examiners are simply those calculated to elicit the amount of professional knowledge which it is expected a student ought to possess, to qualify him to practise the veterinary art successfully, and to see that the public, as well as the profession, is protected against the mischievous results that would ensue, were improperly educated men allowed to practise, with the authority of the Royal College of Veterinary Surgeons. It is indeed a source of much regret, that the curriculum of study at present enforced at our schools should be so limited, as to prevent the Examining Boards looking for more practical knowledge from the candidates who present themselves; but I trust the day is not far distant when a more enlightened era will be inaugurated, by the introduction of a more thoroughly practical and extended course of study. I am sure my fellow-examiners will coincide with me as to the urgent desirability of this step, for nothing strikes us more forcibly at these examinations, than the need there is for improvement in those branches of knowledge which are essentially of a practical character. Let it not be understood for a moment that I wish to detract from the value of those more scientific studies on which our profession is based. On the contrary, I think their value cannot be overrated; but, at the same time, theory must be judiciously combined with practice, science with utility, and the functions of the brain with the use of the hands. Therefore, gentlemen, in returning you my most sincere thanks, and those of my coadjutors in the Courts of Examination, let me assure you that the welfare of the profession is ever before us, when we assume the responsible functions with which we have the honour to be invested; and if any proof of this were necessary, I need only point to the sacrifice of time we can so ill afford to make when fulfilling those important duties.

Mr. Edward Colman Dray, on rising, remarked that the toast that had been intrusted to him deserved more eloquence than he possessed, and he also begged to state that he was unaware, on entering that room, that he should have either to propose or respond to a toast; *ergo*, this circumstance must be his apology for the few very crude and disconnected remarks that he had to offer. He certainly could not help feeling highly flattered by having the honour of what may certainly be considered the toast of the evening intrusted to his care. He was sure the language of Cicero or Demosthenes could not do justice in expressing how much we are

indebted to our worthy President and the Council for their indefatigable exertions in the cause of our profession; their sacrifice of time and money demands our best thanks and gratitude. The Council did honour to themselves when they elected Mr. Hunt as their President; they must all coincide with him they could not have chosen a gentleman better qualified to fulfil the duties; he not only possesses the *suaviter in modo*, but the *fortiter in re*. He felt certain that the interests of the profession will progress under his judicious management; words are inadequate to express his high opinion of his capabilities. The *recherche* entertainment presented by the excellent President to them this evening must be felt by all as a most graceful compliment, which he was sure was highly appreciated. The kind and hospitable manner in which he has treated his friends this night will make it long remembered. They had had proof this evening of the combination of his qualities in a social as well as a professional view—his ability to preside over a feast of reason or a flow of soul; and he trusted they would join him heartily in wishing long life, happiness, and success to our President, and the Council of the Royal College of Veterinary Surgeons.

Mr. Hunt replied that he deeply felt the kind words and earnest manner of his friend Mr. Dray, but was sorry to say that he had greatly overrated his powers and his merits. In the course of his speech he had alluded to the compliment paid to them by the invitation that evening. He (Mr. Hunt) begged them to believe that the compliment was on their side, not his. When he looked round that table, and saw visitors who travelled *hundreds of miles* to be present on that occasion, he might well feel proud to think that he had such a claim upon them as to induce gentlemen, all of whom were actively engaged in professional pursuits, to, at great loss of time, personal inconvenience, and expense, throw aside all these considerations, and honour him with their company. There needed no further evidence than this of the value of continuing these social gatherings so worthily commenced by Mr. Field, as alluded to at a previous period this evening. He (Mr. Hunt) was not egotistical enough to look upon this as a personal compliment; it was one paid to the office that he had the honour to hold. It needed no blandishments of his (so flatteringly portrayed by Mr. Dray) to make these meetings popular, and he was selfish enough to wish that occasions of this kind were more frequent in the profession than they are. From the kind words expressed, and from the look of his friends around, he was induced to believe that no man would leave that room with a worse opinion of his neighbour than when he entered it, and that acquaintances had been made, and friendships formed, that he hoped would be limited only by their lives. Before sitting down, he would again harp upon that string that he always touched when an opportunity occurred; and if they really respected the Presidential chair and the Council as much as the hearty reception of the toast implied, pray let them show it in other ways—support the Council more numerously at the annual meetings in May, and have a voice in sending to that body men who will do their duty in that

assembly, and honour the profession. He begged to thank them sincerely for the Council and himself.

The concluding toasts were—"The Metropolitan Practitioners and Mr. Field," proposed by *Mr. Cartledge*, responded to by *Mr. Field*; "The Provincial Practitioners and Mr. Stanley of Birmingham and Mr. Broad of Bath," spoken to by *Mr. Field*, and acknowledged by *Mr. Broad* and *Mr. Stanley*; "The Vice-Chairman," by *Mr. J. C. Broad*, with reply from *Mr. J. Sampson Gamgee*. The meeting was most fittingly brought to a close in an admirable little speech from *Mr. J. B. Henderson*, under whose care the President had placed "The Ladies."

BEQUESTS TO THE ROYAL VETERINARY COLLEGE.

WE have much pleasure in announcing that the following bequests have just been made to the Royal Veterinary College:

By B. Botfield, late M.P. for Ludlow, twenty guineas, being the amount of a life subscription.

By Captain Randall, late of Tooting, £1000.

MISCELLANEA.

IMPOUNDING OF CATTLE.—DEFECT IN THE ACT.

AT the Banbury Petty Sessions, last week (September 30th); the district surveyor having summoned several persons whose cattle he had impounded, with a view to recover the penalty of £5 in each case, it was discovered that the amended Act of last session, while enacting that the owner of stray cattle should be liable to fine, had entirely repealed the only clause in the old Act which gave authority for impounding them, and had omitted to re-enact it. The cases were, consequently, dismissed.

OBITUARY.

DIED recently, Mr. Robert Ousey, Ashton-under-Lyne. His diploma bears date May 31st, 1843.

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Communications and Cases.

A CASE OF UNUSUAL DISEASE OF THE LUNGS
AND CHIEF ARTERIAL TRUNKS.

By ROBERT LITTLER, V.S., Long Clawson, Melton Mowbray.

October 7th, 1864.

DEAR SIR,—I forward for your inspection a piece of a mare's lung, and the left side of her heart. I also send you the following brief history of the case :

Sometime in July of the present year, a fine cart-mare, *rising four years old*, belonging to Mr. Orson, of Harby, was observed to be losing flesh, to feed badly, to breathe quickly, and to sweat and tire more than usual while at work. At first the persons having the care of her attached no importance to these circumstances, as they considered they were connected with some temporary defect of the molar teeth, and as such she continued in work, which was easy, until the evening of the 3rd of September, when she was submitted to my examination. On this day whilst at work she trembled very much, and manifested more than usual weakness, as also a great difficulty in breathing ; she was also heard to cough occasionally.

I found the mare apparently in fine condition, full of flesh, sleek in her coat, and possessing an animated appearance. Her skin and extremities were warm ; the mucous membranes healthy in appearance, and the mouth moist and of a natural

temperature. The pulse was 62 in the minute, full, but soft and regular. The respiration was, however, greatly accelerated, being not less than 56 in the minute, but the inspirations and expirations, as to time of performance, were equal, that is, each occupied the same period. Nothing remarkable was observed in either the alvine or urinary evacuations. Auscultation of the chest afforded decisive evidence of disease. On either side the vesicular murmur was scarcely audible, whilst the bronchial respiration, although exceedingly feeble, might be distinctly heard in every region. Percussion elicited a clear sound from every accessible part of the chest. The heart was regular in its action; but there was an evident weakness in its impulse, and its healthy sounds had been replaced by a single sound—a murmur much resembling a strong puff.

A soft diet was ordered, diuretic and alterative medicine given, and a strong blister applied to the breast. From the 3rd to the 12th the mare's appetite improved considerably, and she was seldom heard to cough; nevertheless, her breathing was not observed to undergo any change whatever. On the latter-named day, however, her appetite began to fail, and her breathing became more accelerated and also irregular. It was 65 and sometimes 72 in the minute, while each expiration was attended with a faint grunt. The pulse was smaller and more frequent, numbering 66 in the minute. It was, however, neither intermittent nor irregular. The chest still gave a hollow sound on percussion, and the bronchial respiration was better developed, being somewhat rougher and stronger. The heart's impulse and murmur had suffered no change. The mucous membranes retained a healthy colour, and the skin and extremities continued warm.

26th.—There has been rapid wasting of flesh during the last ten days. The appetite is now gone, and the mucous membranes have become of a pale colour. The pulse is 72, small and jerking. The respiration numbers 76 in a minute. The heart, even now, acts regularly, but its impulse is more feeble, and its murmur consists simply of a faint whiff, scarcely audible. The mare has never been down during her illness. She continued until the morning of the 4th of October, when she expired.

Post-mortem examination.—Four tumours possessing a globular form, and differing but little in magnitude—each being about the size of a cricket-ball—were found at the root of the mesentery. They were in close contact with each other, as also with the spine, and the large blood-vessels of the intestines. On cutting into them, I found that they consisted of a pale-

yellow substance, which was easily broken up into a pulpy mass. The material was soft in the centre, and contained a little calcareous matter in a granular form scattered through it.

When the cavity of the chest was opened the lungs collapsed but very little. They had a dark mottled appearance, were also much enlarged, almost filling up the whole interior of the chest; besides which they were consolidated throughout. The cause of this consolidation was apparently the same in every part of the lungs as in the piece sent you. The pericardium and the exterior of the heart presented nothing unusual; but the interior of the left auricle and ventricle—as you will notice—exhibited a very rare appearance. The serous membranes of these cavities apparently contains a deposit of calcareous matter, and a similar deposit was found to exist throughout the posterior aorta and the external and internal iliac arteries, and also throughout the anterior aorta and the right and left anterior innominate. The serous membrane of the pulmonary veins showed the same morbid condition as that which you will observe in the serous membranes of the left auricle. The right side of the heart furnished no indications of disease.

This case is to me one of an uncommon form of disease. It undoubtedly has had a constitutional origin. Is the disease of the lungs cancerous in its nature? Are the circulatory organs loaded with atheromatous deposit undergoing chemical change? I should be glad to know your opinion as to the nature of the morbid condition of the parts, and to have any remarks you may make on the case.

I am, &c.

To Professor VARNELL.

REMARKS ON THE ABOVE CASE BY PROFESSOR VARNELL.

The case to which the preceding letter refers is closely allied to two, the particulars of which were published in the May number of the *Veterinarian* for the present year. They are similar, not only as far as the nature of the disease is concerned, but also as regards the age of the several animals affected. The symptoms likewise, in each of these cases, both in the progress of the disease and its duration, were very much the same, a circumstance we cannot be surprised at when we consider their close identity.

I believe the disease to be cancerous in its nature, and that in all probability it had its origin primarily in the lymphatic glands of the mesentery, from whence its germs found their

way into the circulation, and were thus carried to the lungs and diffused throughout their substance. Numerous collections of these cells being thus formed, they by their rapid growth and multiplication eventually involved the whole of the lung-tissue, obliterating the air-cells, either by pressure from without or by filling them up internally, thereby destroying the lungs as breathing organs. When this abnormal process was completed to an extent incompatible with the functions for which air is admitted to the lungs, death necessarily took place.

The development of this disease must have been so continuous and steady that, could its existence have been determined during the life of the animal, I can fancy that its rate of growth might almost have been ascertained by the gradual increase in the number of respirations per minute; for, as the capacity of the lungs to admit air became less, so would the respiration be in proportion quickened, to compensate for the loss of their aerating surface. In supposing that the same pathological changes in the structure of important organs like the lungs would be accompanied with nearly the same symptoms, allowance, of course, must be made for variations in the age and condition of the animal affected, as well as the temperature in which he is placed and the management which has been observed towards him, circumstances which ought always to be considered when the symptoms of similar diseases are compared one with another.

There is one point in which the disease of the lungs in Mr. Littler's case slightly differs from that described in the May number of the *Veterinarian*, viz., that in the centre of most of the little masses of diseased deposit which pervade the substance of the lungs a few granules of calcareous matter were found, giving to these spots a yellowish aspect. I am inclined to think, however, that this peculiarity is simply the result of the disease in this case being in a more advanced stage; local circumstances having favoured a continuance of life for a little longer period.

This case is also rendered the more interesting from the fact that, in addition to the abnormal state of the lungs and mesenteric glands, the left side of the heart and the blood-vessels connected therewith were affected with a disease which, although apparently dissimilar from that existing in the lungs, I am inclined, nevertheless, to think was closely allied to it.

Mr. Littler has referred to this affection, and described it as atheromatous, which designation to a very great extent I agree with. Without doubt it is one of the stages of the

disease known as atheroma which is so frequently met with in the inner coats of the arteries. The inner surface of the left side of the *heart, aorta*, and its divisions, for about ten inches from the base of the heart, were found to be extensively covered with a deposit of earthy matter. Mr. Littler considers this deposit to be beneath the lining membrane, but I am led to a contrary opinion from not being able to detect the slightest trace of membrane upon the free surface of the calcareous matter, and from the fact of the vessels conveying arterial blood being only affected. So far as I am aware, there is nothing in the *structure of the coats* of the blood-vessels connected directly with the left side of the heart in particular which would predispose them to be thus affected, and consequently one is led to the inference that the arterial blood either contained a greater amount of effete material depending upon defective excretion than the venous blood, or that the rapidity of its flow favoured the deposit in question. The latter circumstance, however, does not explain the cretification of the pulmonary veins. Here and there I noticed, and more especially on the *endocardium*, some milky looking opaque patches, which had a gristly consistence, and were studded in places with granules of earthy matter, as though the animal matter had become dissolved by disintegration and been carried away by the stream of blood, leaving the earthy matter behind it. This hypothesis seems to be borne out, to some extent, by the appearance of the earthy deposit in several other places, especially where it was thickest. Here the surface was comparatively rough, and looking as though one part of the originally deposited matter had been dissolved and removed from the other, which had been left behind in a granular form.

I further observed that the slight depressions, as also the ridges which existed, mostly ran in a longitudinal direction with the vessel, whereas the bony plates which are met with in cases of ossification of the inner surface of the middle coat of an artery, show lines which take the same circular course as the fibres of this coat, which to my mind is an indication that such deposit did not result from the current of blood in the vessels. If these remarks are at all feasible, it appears to me that they establish a connecting link between the disease of the mesenteric glands, the lungs, and that of the blood-vessels and left side of the heart.

In conclusion, I may add that the nature and peculiarity of this affection, its steady advance, as also its duration and

well-marked symptoms, are all points of the greatest interest, and worthy the consideration both of the pathological anatomist and the practitioner. Although my remarks are brief, and do not set forth all which I recognised in my investigation, they may nevertheless tend to excite a desire to examine more closely these and similar cases which may come under the notice of the veterinary practitioner.

LAMINITIS AND NAVICULAR DISEASE.—REPLY TO MR. WILLIAMS.

By T. GREAVES, M.R.C.V.S., Manchester, President of the
Lancashire Veterinary Medical Association.

October 8th, 1864.

DEAR SIR,—If there be one condition which more than any other makes controversy interesting and instructive, it is the conducting it in an enlightened manner, and with an absence of all desire to gain a victory at the expense of principle; I think I can discern this spirit throughout your able reply. The question upon which we still entertain different opinions is principally the nature of these diseases; you deny the hereditary taint, whilst I still maintain it; and, with a view to establish my opinion, I beg to offer a few additional arguments. I do this because I could as soon doubt the existence of insanity in a family in which various members have been known to be idiotic or lunatics, or of scrofula or consumption in families of which various members have fallen victims to its certain and fatal influence; therefore, for the purpose of arriving at correct data, let us endeavour to divest the question of everything that may have the semblance of fallacy. I am not going to say it is a very easy matter to refute this view of yours, but I do think it is not based upon sound physiological conclusions, and I will tell you why I think so, and in doing this I could wish that I possessed more ability and perspicuity to enable me to express myself more tersely and more forcibly than I am able, for it is in this particular where the pith or gist of the whole argument exists—it is here where the principle is involved. You say all these diseases result from extraneous causes, and are wholly independent of hereditary predisposition; whilst I say it is true some few of these cases do result from excessive violence done to the foot, but that in by far the majority of them they are constitutional.

Now, let us bring sound physiological doctrines to our aid, and let the first question we ask ourselves be—

What are Hereditary Tendencies?

Medically speaking, it may be proper to define them as “a strong proneness in the constitution to assume the same characteristics that existed in one or both of the parents.” It will be perceived that this definition will comprise the mental as well as physical peculiarities, the excellences as well as the defects in the constitution, as I take it for granted it is a conceded point that numerous satisfactory examples can be adduced of excellence and talent as well as of the weaknesses and vices of the parents being transmitted to their offspring. Animals may be born free from disease, but with peculiar textures in certain localities of such imperfect kind as to become morbidly affected by causes which would produce no effect whatever on limbs or textures soundly and normally developed. Whenever any special organisms undergo a change, such, for instance, as bone becoming soft, or cellular membrane becoming scirrhous, such changes depend entirely upon organic combination; some special elements have been withdrawn, or have been introduced into it; for aught we know, the carbon, oxygen, hydrogen, and various earthy matters, have varied in their proportions, and, been so arranged, that they have created the developments nature is silently but irresistibly working out, and this, too, wholly and entirely irrespective of any particular conformation whatever as a predisposing cause. All physiologists know that the body I possess to-day is an entirely different body to that which I possessed a few years ago, and that every atom of the structures of which this body is composed to-day will be totally and entirely changed in a few years hence, if I am still in existence. Decay and reproduction are actions constantly going on in every living body; as an apposite example, if you crush your thumb-nail, and it comes off, you will find in eight or nine months an entire new nail will have been produced; it would have been reproduced the same if the old nail had not been crushed off; it is nature’s process, an inflexible condition of vitality going on throughout the entire constitution. But what of the idiosyncrasies? They continue to operate in their own secret, silent, mysterious, but never-varying courses. It is very questionable to my mind whether any known method of treatment can possibly prohibit the development or natural progress of any morbid condition in its legitimate locality;

I am strongly impressed with the idea that it is a pre-existing germ, as certain as the oak is contained in the acorn. Nature's laws are wise; physical defects must assert themselves; the creature has no power to change the inherent conditions of its nature; nature can fully accomplish her task, but she always stops at the limit of her destination; the inalienable attribute was stamped upon the fœtus in utero, and cannot be forged by human invention.

Acute or chronic diseases, properly speaking, belong to a different type to those of an hereditary origin: acute diseases are generally referable to extraneous and violent causes and are comparatively of short duration; chronic diseases are generally referable to the continuance of causes inadequate in themselves to induce acute diseases, but hereditary diseases are referable to no apparent cause, they are a natural condition in the development of the animal. I could illustrate this truth by multitudes of living examples. A mare I was attending the other day for gripes—she is now seven years old—was born a cripple, so lame of the fore feet and legs that for several weeks she had to be held up whilst she sucked; she had spelks, laced boots, and various contrivances to assist her to stand and walk; she got to walk straight and work well, but has never been free from lameness a day. Her sister, nine years old, has been a cripple ever since three years old; their mother was a sad cripple from six months old, and the grandmother was also a cripple. There are no appearances whatever to account for the lameness, only navicular disease. These were each of them long-legged, long-jointed animals, the reverse of stunted upright pasterns. Mr. Pratt, V.S., of Mashan, has kindly furnished me with a number of well-authenticated cases of navicular disease being transmitted to several generations, and where the navicular bones were found, in several instances, to be hollow, and an absence of disease in the joint. I also remember a mare that was shod a great many years at my forge; she had a strange unconquerable aversion to be shod; she was not exactly vicious, but it was exceedingly difficult to keep her foot; all her colts had the same propensity, exactly the same knack of getting their feet from the smith, and the same aversion to be shod.

In the second place, let us inquire into the particular tissues affected.

What is Laminal Tissue?

It is that extremely highly organized structure which connects the coffin-bone to the hoof; one of the most vas-

cular and highly sensitive tissues in the whole body. This condition I presume you concede; then I go on a step further, and lay down the principle which I believe all physiologists are agreed upon, that the rapidity with which intense inflammatory action destroys the vitality of tissue is in an exact ratio with that tissue being in a high or low state of organization. Are we agreed upon this point? If so, we will proceed to the next step, and put the third question.

What is Inflammation, and its results?

Inflammation may be said to be perverted natural action,—congested capillary system in the part affected—causing swelling, heat, redness, and pain; the results or terminations are resolution, suppuration, ulceration, tumefaction, and mortification. Now, it has been my lot to be daily occupied with cases of lameness during the last thirty years, having had four forges during a considerable period of that time. I have been constantly engaged with lame horses, suffering from sandcracks, treads, bruises, crushes, pricks, nail-bounds, &c., &c., and it has been an everyday occurrence to witness the progress, step by step, of the phenomena of *inflammation proper*. Nothing can be more familiar to a veterinary surgeon with large shoeing experience than lame horses, some from injuries with nails; let us take this case for our illustration. The point of the nail penetrates and wounds the highly organized tissues, or it may be two or three nails have thick holds, and bind upon these sensitive laminae. What is the result? Pain, lameness, inflammation,—*inflammation proper*. And what follows? This natural high state of vascularity is intensified, the inflammation runs its stages rapidly; in three days suppuration has taken place. Exhaustion of vitality and death of these highly organized tissues follows, not so much because they are between two hard surfaces so much as owing to their extreme vitality. You rasp the hoof thin, as thin as tissue paper, opposite to the decaying laminae; you remove it, and give exit to the imprisoned matter, and there you find that the laminae contiguous to the wounded portion are all *dead* and *decaying* from inflammation, and also a small portion of bone exfoliating. These are evidences that cannot be disputed as pure results of true inflammation; it is what practical experience teaches. Allow the decaying tissues to slough away, and all is soon well; but in this severe inflammatory action, the true nature of which is positive and cannot be controverted, we have had no laminitis proper, or exudation. We will next inquire—

Do the same Phenomena attend Laminitis?

We have pain—intense, excruciating pain—but there is an absence of the natural law or phenomenon accompanying and attendant upon true inflammation or inflammation proper; or else we must have, as an inevitable consequence, the necessary result—it is a natural process. We must have pus form all around the foot, decay, destruction, and sloughing of the laminæ in *every severe case*; this result we could not help; everyday facts show us the truth of this theory. In those cases of laminitis where the disease rages with the utmost intensity we never have the true terminations of inflammation resulting; we have debility in the sentient vessels, bulging of the inferior surface of the bone; effusion. A train of processes are set up, but none of them resemble those attendant upon true inflammation. We will now inquire—

If Laminitis is not Inflammation, what is it?

I have endeavoured to show that it is not attended with the same phenomena that attend true inflammatory action; I believe, with that distinguished teacher Professor Spooner, that it is to all intents and purposes belonging to the rheumatic class of disease, and I also believe that it is essentially of hereditary origin. You call my attention to “a severe case of laminitis, which after a few hours of suffering, passes off.” Do you believe that most severe inflammatory action can take place in such a tissue as this, and quit it radically upon the instant? No; let me tell you, in such a case as the one you mention, if there is no obvious cause of it, such as new tight shoes, &c., I take it for granted it is a proof of morbid susceptibility and defective condition of the feet. Can you say that it is not a precursor, or is incompatible with the existence of disease in the feet in one form or another? We must not be over-confiding; disease is delusive; in a few weeks the same symptoms occur again; it is intermittent; in a probationary state. Depend upon it, it is a temporary cropping out of a permanent defect; it is at all times critical; it is portentous. I have no sympathy with the philosophy which looks with complacency upon an ominous symptom, although it may be, on this occasion, temporary, as indicating a defect, and allowing it to drift on to permanence. To me such an instance would intimate a tangible, apparent constitutional defect, although of an unsettled existence. We will now ask ourselves the question—

What is Rheumatism ?

This disease is not, strictly speaking, peculiar to itself. It partakes of, and is confounded in some of the characteristics of inflammation. It partakes of both the acute and chronic form, but its attacks are always confined to the white fibrous tissues. Its great distinctive peculiarity is its remarkable migratory or oscillatory characteristic, and it is conceded by all pathologists to have a constitutional, if not an hereditary, origin; it differs from inflammation in its nature, not being reducible or removed by the same treatment, neither is it the same in its terminations, scarcely ever producing suppuration or destruction of the tissues attacked. The most reliable knowledge we can acquire of its nature and effects is from our fellow-man who may be the victim to it; he can tell us with almost unerring certainty when a change in the weather is about to take place. The morbid susceptibility of the affected tissues are so acute and delicate as to be acted upon by conditions which are wholly inappreciable to our senses; but to assume that the increase or decrease of pain and lameness is caused by the change of the weather, or to some slight disordered state of the digestive organs, is, to my mind, very inconclusive indeed. I am rather inclined to the opinion that the one primary cause—whether it be a peculiar electrical state of the atmosphere, or whatever else it may be—that brings about the change in the weather, affects in like manner man and animal that is the subject of this peculiar disease.

Is Navicular Disease of an Inflammatory Nature ?

I have studied carefully the character of navicular disease—its stealthy, subtle progress; its concealed advances. I have seen it in foals and in colts unshod. In others it has made itself patent during breaking. In plenty of cases I have felt quite satisfied that no injury to the joint or laceration of the fibres of the tendons had taken place; no laceration of fibre could possibly have ever occurred, but simply and purely a radically defective condition of the bones, and the ligaments connecting the bones together. The theory of rubbed-off cartilage is very ingenious; but I have seen colts perfectly free from lameness or navicular disease, and whose navicular bones were covered with the small nodules of bone of the size of millet-seeds you speak of, in which there was a perfect absence of inflammation. In all cases of navicular disease you have stiffness and rigidity of the ligaments, and in many cases

disease in the interior of the bone. In some few, as you very correctly observe, ulceration of the surface exists; this latter state may be the result of severe compression or concussion, but I do not believe it is necessarily so. In the next place, let us examine the—

Post-mortem Evidence.

In 1855, when I wrote my former papers on laminitis, I made numerous examinations of feet affected with this disease. During the interim I have never ceased to feel a deep interest in the subject, and have frequently procured the feet of some familiar cripple after death; and now, again, during the last six months I have selected at the knackers' yards about a dozen of the worst cases of convex feet, and carefully examined them: and what do I find? Do I find evidences of destroyed laminæ at some former period, the hoof or sole attached to the bone by some scirrhous structures in the place of laminæ? No, nothing of the kind; I find beautiful, fine, delicate laminæ, perfect to all appearance. There is, however, in every case, outside the horny laminæ,—between it and the crust—a defective state of horn, like an extensive seedy toe, but besides this there is a wasting of the bone; I never have seen a case in which the bellying out, or bulging, of the under surface of the coffin-bone was not the most prominent characteristic, and the bone very much roughened upon its anterior and superior surfaces. That beautiful arch, described by Mr. Gangee, at page 78 of the *Veterinary Review*, has been broken down. The horny sole and the bony structure, having become defective in firmness, have yielded to superincumbent pressure. I refer you to the paper I have alluded to, also to page 205, and all the other papers on the foot by the same author, as being the best productions in our own literature. In my examinations into the navicular joint of numbers of well-known old cripples, cases that all experienced practitioners would call chronic navicular disease, it has been found that a morbid state has existed involving the whole of the parts, causing thickening and stiffness, and general rigidity in the soft parts, and wasting in the bones. In only a limited proportion of them have I found evidences of disease having existed at all in the outer circumference of the bone itself.

I remain, &c.

To W. WILLIAMS, Esq., V.S.

OBSERVATIONS ON "SOUNDNESS."

By R. H. DYER, M.R.C.V.S., Torquay.

(Continued from p. 695.)

Now and then we meet with a horse which we suspect to be labouring under that disease termed by some modern nosologists "navicularthrititis." It is highly important that we diagnose one of three, or even more diseases, or we shall most likely fall in a for a share of odium if we mistake the disease which the subject of our examination labours under. If, for example, we see a horse resting or pointing his foot, it is at once believed by some that the navicular joint is the seat of disorganization. A second practitioner will affirm that the joint situated above is the part affected; while a third will declare it is a chronic case of laminitis; and a fourth believes that neither is right, that the pointing is referable to a small splint which he discovered situated very posteriorly, and that this small bony growth is the sole cause of the pointing. We have, no doubt, all been alive to this, and have watched its progress. In some horses the symptom has been seen for years, during which time they have worked hard and well. This, it may be argued, is no proof of the healthiness of the navicular joint; nor is it any guarantee that the other structures and parts before mentioned are respectively the seat of disease; one thing only is certain, that the horses have been free from lameness.

These papers being intended to bring out opinions, &c., as to *soundness*, they must necessarily fall short of interest as a work on pathology; still, they may go some length in adding to the stock of knowledge which we already possess. A faithful record of cases as we meet with them in practice will be of infinite service to all who have only had the opportunity of practising but for a short time; and it may serve our purpose if I relate the particulars of a case which recently occurred, bearing upon this particular symptom — *pointing*. Although the case may not deserve great merit, it affords an opportunity of knowing how those persons assuming the name of *veterinary surgeon* without being *legally* qualified to possess it, will sometimes treat those who hold the College diploma.

A few months ago I was directed to examine a black gelding, the property of a gentleman, for an army officer. The horse was a hunter. When I went to the box in

which the horse was tied I was just in time to see the near fore foot in advance of the body, some twelve or fourteen inches. The voice of the groom, together with the noise of opening the upper door, caused the animal to withdraw the foot quickly, but not sufficiently so, as I had caught sight of it. I made no remark, but put the animal under examination. During the trial I fancied he stepped short occasionally; this I mentioned to both the seller and buyer. As a last test, I rode him about the street; sometimes he trotted decidedly lame, at others he seemed sound. A difficulty having arisen, I informed the two gentlemen what I had observed before the horse left the stable. The owner, distinctly asserted that he had *never seen the horse point* his foot during the six months he had been his property, and that he would give a warranty to the effect that the horse had not been lame while in his possession. The purchaser replied that he employed me to examine the horse with a view of dispensing with warranties; moreover, he declared that he would not take the horse unless I recommended him to do so.

I requested that *more time* might be allowed in the examination, in order that I might again see the horse in a box-stall. This was agreed to, and in the course of ten minutes the same foot was advanced as before, *which both gentlemen witnessed*. This rather staggered the seller, who, of course, declared, as before, that he had never known any defect to exist in the horse. A small splint was present, which took its course *behind* the suspensory ligament, and which I believed explained the symptoms. The horse was purchased, and carried the officer well for some months (twelve weeks), when one day he met with an accident in jumping over a fence, the *near* foot coming down among some large loose stones, which caused much pain and lameness; so bad was he that it was with difficulty he was walked home. This being between thirty and forty miles from my residence, a "vet." who does not hold the College diploma was summoned to attend the animal at once.

Mr. "Veterinary Surgeon" carefully examined the foot, and was of opinion that a *fracture* had occurred to one of the bones; at which the owner became alarmed, and was desirous of having a second opinion. The "vet." used the "speedy-talking-wires," and ordered another of his metal to attend the summons, and to sit in conclave upon the case of fracture.

The consultation between these wise men of the north

lasted sufficiently long to enable them to agree that a fracture had taken place.

Three or four days afterwards, so I was informed, the horse became comparatively sound, to the astonishment of the resident "vet.," who had been extremely attentive to his patient, when all at once he came to the conclusion that the case was some chronic affair, which he had made out against the horse and *against me*.

It appears that this practitioner had made inquiries relative to the animal, and learned that once upon a time he had suffered lameness; but being somewhat at sea as to the true nature of this, and being desirous, of course, of placing the onus upon *my broad shoulders*, he wrote a long letter to the officer, detailing all he had heard with reference to the black gelding. The owner became perplexed, and I was favoured with a sight of the animal, in order to set the matter right, as he asserted. I found the foot had been reduced in size; the wall was fully one inch shorter than the other; the sole had been pared extremely thin; all very *good treatment* in his mode of practice, I dare say. And to hide the effects of his knife he had *carefully trimmed* the hair close to the coronary substance, so that the two feet should be as *nearly alike* as possible, as he had heard that I was to see the horse. I inquired of the groom who had exercised his skill in the way described, when he told me that it was Mr. "Veterinary Surgeon." I found the foot had received considerable *compression* and *concussion* during the accident; that the anterior portion of the wall had been bruised and *cut through*, and had caused injury to the lamellated structure, which I supposed was the true cause of the excessive pain witnessed at the time the animal was *first* seen. The treatment adopted was counter-irritation, and rest for a week. While my servant was rubbing the vesicatory on the coronet a large quantity of pus oozed through the wounded horn, which was sufficient to show that the soft parts aforementioned were injured, and not the bone.

In a fortnight the horse was sent to work, and in a month from the time I saw him he was carrying the officer again across the country as well as ever. All that unpleasantness and malpractice, as shown by Mr. "Vet.," was referable to the symptom of *pointing*. It will thus be seen that some care is required in the examination of the feet, and that hasty opinions are at once at variance with sound practice.

NAVICULARTHRITIS (this is an ugly word) is a disease to be dreaded by owners of horses especially, nor are *we* at all times placed in an enviable position with reference to it. We

will suppose a client has employed us to give an opinion as to soundness, and the animal is believed to be sound, and our client purchases him: the horse, in all probability, is shod in our forge, and in the course of a few weeks the animal goes lame from some cause or other, which, as a matter of course, has the effect of ruffling the temper of our client, who either complains that the horse has been improperly shod or that some mistake had taken place in the examination. In either case it is an unpleasant position for a veterinary surgeon to be placed in.

After a careful examination of the limb we come to the conclusion in our own mind that the navicular joint has suffered, although we hesitate to advance so much, as the owner will at once jump to the conclusion that the case is of *long standing*, and that an oversight had occurred at the examination as to soundness. It is sometimes difficult to make a client believe the disease in question can be, and often is, produced in a moment, especially if he learns that the same animal has at any former period been the subject of lameness in the same foot. I repeat, it is sometimes difficult to make your client believe the truth; there are always, and everywhere, kind-hearted (?) persons ever ready and willing to put in a good word for us, as it frequently favours them with an opportunity of advancing their *own* opinions to the detriment of ours.

Navicularthrititis may be produced in many ways, viz., over-jumping, a slip *after* a jump, a fall, a jar of any sort, but more particularly, constant concussion upon irregular and hard surfaces. Before, however, we speak especially of the causes and symptoms of this disease, it may be wise to take a glance at its history. It is both interesting and advantageous to do so, as the disease known as navicularthrititis in the present day, was supposed to be a different one altogether, at the beginning of the present century.

(*To be continued.*)

PARTURIENT APOPLEXY IN THE COW TERMINATING IN PARALYSIS OF ONE THE HINDER EXTREMITIES.

By W. P. TOLL, M.R.C.V.S., Lichfield.

CASE 1.—On the 11th of November, 1863, I was called to attend a cow of the short-horn breed, the property of Mr. Thomas Nicolls, of Fradley, near this place, which had

calved on the morning of the 10th. The presentation was natural, and the labour an easy one.

On my arrival I found the cow down, and in a state of semi-consciousness. She was very restless and making frequent efforts to get up, although unable to stand even when assisted. In addition to these symptoms the pulse was quick and feeble; the eyes staring, lids swollen, conjunctiva highly injected, and tears running freely down the face. The breathing was increased and laboured; bowels torpid, with all the other indications of dropping after calving.

I administered a strong cathartic, combined with Pulv. Zingib. ζ iss et Ammon. Carb. ζ ij in gruel; stimulated the whole length of the spine with a liniment of ammonia and mustard, and had the animal warmly clothed. On leaving I gave instructions that she should be kept as quiet as possible, and in eight hours take a second dose of medicine, and have the liniment again applied to the back.

12th, 8 a.m.—Patient quite prostrate. Pulse scarcely perceptible; breathing slow and deep; ears and horns cold; eyes closed; tears flowing freely; head turned back by her side, and the tongue hanging out of the mouth. She was quite unconscious. There was scarcely any milk in the udder, and no action of the bowels.

I gave Mag. Sulph. ζ vij, Aloës Bbds. ζ j, Pulv. Zingib. ζ iss, et Ammon. Carb. ζ ij, in gruel, as before, and repeated the stimulating liniment to the spine. I also removed the fæces from rectum and gave an injection, which was subsequently repeated several times during the next twenty-four hours. Half-pint doses of brandy were likewise ordered to be given every three or four hours.

7 p.m.—Still prostrate and unconscious; ears and extremities warm; breathing not so deep; no action of the bowels excepting what comes away with the clysters. Give half the dose of the cathartic medicine, and continue the brandy during the night.

13th, 9 a.m.—Patient looking more favorably. Is able to hold her head up and notice surrounding objects. She has also taken some meal and water, and a little bran mash. The bowels are acting freely and a fair quantity of milk exists in the udder. The pulse and breathing are less disturbed, but she is unable to rise. A carminative powder was administered and repeated at night. A liberal supply of bran mashes was also ordered.

14th, 11 a.m.—Patient going on well, but is not able to get up. The bowels are acting freely, and the appetite as good as could be desired. There is also a fair supply of

milk. From this date she progressed favorably; ate and drank well, and milked freely, but did not get up until the 24th, when it was found that she had lost the use of the near hind leg from paralysis. She hobbled about on the fetlock-joint with the foot turned back, up to the 23rd of December, when I was again called to see her. I found on examination that extensive ulceration had taken place at the fetlock-joint, and also at the point of the hock, and that a large abscess was deeply seated in the gluteal muscles. I advised her being destroyed at once, but it was some time before my advice was acted upon, as, strange to say, even in this pitiable condition, she was yielding sufficient milk for making eight pounds of butter per week, and absolutely had laid on flesh.

CASE 2.—The patient was a cow of the short-horn breed, the property of Mr. James Thorniwork, about five miles from this place, to which I was called on the 15th of March, 1864. I was informed that she had calved the day before, had had an easy labour, and appeared to be going on well till this morning, when she got down and could not be made to rise. She could hold her head up, but not keep it steady. The eyes had a peculiar stare. The pulse was not much disturbed. The extremities were cold and the breathing heavy.

A brisk purgative was given combined with Zingib. and Ammon. Carb. in gruel. Strong liniment of ammonia, with mustard, was applied to the whole length of spine, and the body warmly clothed.

8 p.m.—Very little change had taken place. The medicine was repeated, and also the stimulant to the spine. Half-pint doses of brandy were likewise ordered to be given several times during the night.

16th, 8 a.m.—Patient worse. The head is turned backwards by the side. The breathing is slow and deep; tongue hanging from the mouth; eyes closed; ears and horns cold, and no action of the bowels.

I repeated the medicine, and applied more clothing to the body, and ordered the brandy to be given every three hours. I also removed some fæces from the rectum, and threw up a clyster.

6 p.m.—A decided improvement has taken place. She holds her head up and is looking more natural. The body is warm, and she has taken a small quantity of mash and drunk a little meal and water. The bowels are not responding to the medicine, but some soft fæces have come away with the clysters.

Gave Mag. Sulph. lb.ss. with Zingib. and Ammon. Carb.

17th.—I learned this morning that the cow had not been so well during the night, but had rallied a little towards morning. She would not, however, take anything. The extremities were cold; pulse feeble, and the breathing quick. The bowels had acted a little.

Gave a carminative dose, and repeated the brandy.

7 p.m.—Patient better; holds her head up. Has taken a little scalded hay, and a bran mash. Bowels acting freely. The quantity of milk increasing. Makes frequent efforts to get up, but is unable to rise.

Repeated the carminative.

18th, 10 a.m.—Going on favorably; bowels acting well; eats and drinks freely, but is not yet able to get up. The milk has increased in quantity.

12th, 12 a.m.—Patient is able to get up, but has lost the use of the near hind leg. She eats and drinks pretty well and milks freely. Bowels are getting rather costive, and as such, a laxative dose was given, which was ordered to be repeated as might be required.

The loss of her limb continuing, her owner soon became discouraged, as a cow with a paralysed extremity is not a very desirable animal to a dairy farmer. I suggested that, as she was doing so well in other respects and was giving a fair quantity of milk, she should be kept to fatten the calf, after which she could be slaughtered if no better. This plan was determined on; and by the end of May she was so much improved as to be able to walk out in the field during the day, but was taken up at night. At this time she was giving more milk than any other cow in the dairy, which she continued to do all through the summer, when she was able to walk any reasonable distance, but showed a little weakness of the extremity. Her owner has put her to the bull again, but with what prudence will be best seen when she calves.

The above cases are recorded rather with a view of calling forth observations from the profession relative to paralysis of one of the hind limbs as a sequela of dropping after calving than anything else. They possess to my mind much interest, and go far, I think, to establish the true pathology of this disease.

[We regard these cases as a valuable addition to our accumulated facts relative to parturient apoplexy in the cow. The sequelæ of this disease are as various as can well be imagined, and we have ourselves seen cases very analogous to the one first described. Several instances of sphacelus of

the mammary gland, and of deep-seated abscesses in the muscular structure of the limbs, particularly of the hind ones, which had been greatly pressed upon while the animal was recumbent and in a comatose condition, have also occurred in our practice. Cases like these go far, as Mr. Toll rightly observes, to establish the true pathology of the disease, and should teach the junior practitioner not to be over-confident of the animal's ultimate and complete recovery, even when the apoplectic symptoms yield, and the cow is restored to a state of consciousness again. Apart, however, from all such considerations as these, parturient apoplexy must ever prove a very fatal affection. Death or recovery hangs on a very slender thread, and chiefly, on the circumstance as to whether the congested vessels of the brain give way or not under the pressure which is put upon them. While coma exists partial stagnation of blood may occur in any one organ or part of the body, and all the ill consequences of such a condition of the vascular system will follow, and be in proportion to the amount and duration of the stagnation.]

CASE OF EXTENSIVE MELANOTIC DEPOSITS.

By T. GREGORY, M.R.C.V.S., Tunbridge.

ON April 27th, 1864, my attention was called to a fourteen-year-old white gelding, the property of Benjamin Brown, Esq., of Roughway and Hampton Paper Mills, near this town. The horse was in good condition, and very handsome in appearance, but, to quote the words of the horsekeeper, "about two years ago a lump, about the size of a walnut, was noticed on the front of the chest. It had gradually got larger, although the horse fed and worked as usual until the lump, from its great size, prevented his wearing his ordinary collar."

At the time of my visit the tumour alluded to was of the size and shape of a large cocoa-nut. It was situated just above the point of the sternum, inclining to the off side. A careful examination convinced me that it was of a melanotic character; but, for several reasons, I did not consider the extirpation of it judicious, even if practicable. 1st, the age of the patient; 2ndly, the constitutional nature of the disease; and 3rdly, that the expense of keep and attendance before the horse could be worked, even if all went on well,

would be more than he was worth. The collar was altered, and iodine and other agents applied locally, but without any benefit. He was kept at his work, and I saw him only occasionally. The tumour slightly increased in size, and retained the oval form, the patient during the time feeding, looking, and doing well.

September 22nd.—Mr. Brown again consulted me as to the propriety of removing the tumour, when I expressed my conviction, that melanotic deposits existed internally, although even now there was little or nothing to indicate their presence. After weighing in our minds the chances *pro* and *con.*, it was decided to let the horse take his chance, so long as he did not work in pain.

27th.—I received a hasty summons, as “my patient had, after doing some ordinary work, been suddenly attacked with alarming symptoms. He staggered, refused all food, shivered, and sweated profusely.” On examination I found all these symptoms present in an aggravated form; and, in addition, the visible mucous membranes were blanched, the pulse imperceptible, and every other indication of the animal’s sinking fast from internal hæmorrhage. He was removed to a loose box, and lived about three and a half hours.

28th.—The *post-mortem* examination revealed the melanotic tumour attached to the sternum to weigh ten and a half pounds, a large quantity of blood in the abdominal and thoracic cavities, and melanotic deposits within and upon the liver, kidneys, stomach, intestines, mesenteric glands, heart and lungs. The walls of the heart were soft and attenuated. The spleen was enormously enlarged, its shape altered, and its thickness increased to fully six inches in the centre by these deposits. On being placed in the scales it was found to weigh no less than six and a half stones, or fifty-two pounds. The brain was not examined, as decomposition had set in so rapidly, and the head and neck had become so much swollen. The carcase emitted an offensive and very unusual odour.

Melanosis is not an uncommon disease, but I have never met with it in any coloured horse except either gray or white. Is it always so? The largest spleen I had seen previously to this was one of twenty-four pounds, taken from an old white mare, at Arundel, in Sussex, in the year 1835. These cases show to what a great extent the spleen may become diseased without interfering either with the natural functions or the usefulness of the animal, and are in this respect alone of great interest to the pathologist.

THE UNREDRESSED GRIEVANCES OF THE
INDIAN ARMY VETERINARY SURGEONS.

DEAR SIRS,—Will you please give insertion to the enclosed petition to Her Majesty's Secretary of State for India in the *Veterinarian*, in the hope that it may be the means of inducing my ill-used professional brothers in India to follow my example at as early a date as possible? At the same time, it is to be remembered that there must be *no combination*. The petitions will have to be forwarded through their respective commanding officers in *quintuplicate*.

I am,

Yours faithfully,

F. G. SHAW,
Veterinary Surgeon.

To the Editors of 'The Veterinarian.'

TO THE RIGHT HONORABLE

THE SECRETARY OF STATE FOR INDIA.

The Humble Petition of

VETERINARY SURGEON F. G. SHAW,

Madras Army.

Showeth—

1. That your petitioner holds a commission in Her Majesty's Veterinary Medical Service, and prays that Her Majesty's Royal Warrant dated 1st July, 1859, may be put into force in India, so as to entitle your petitioner to the increased rank, pay, and pension, therein granted to veterinary surgeons.

2. That the Royal Medical Warrant published in 1858, and subsequently held in abeyance, having been recently carried into effect in India, your petitioner is emboldened to pray that the Royal Warrant affecting the veterinary department dated 1st July, 1859, and cancelled as regards India by the order of the Governor-General of India, gazetted Fort William, 3rd April, 1860, may also be carried out.

3. That your petitioner entered the Madras Army on 6th February, 1857, and under the old rules still ranks as a cornet in the receipt of eight shillings per diem, and must continue to do so until he has completed ten years' service; whereas, had the Royal Warrant dated 1st July, 1859, not been declared inapplicable to February veterinary surgeons in India, your petitioner would have been entitled from the date of that Warrant to an increase of pay of two shillings per diem

till 6th February, 1862, and from that date to the greater increase of three shillings and sixpence per diem, so that up to this time your petitioner has been a loser of about £250 by the order of the Governor-General dated 3rd April, 1860, above quoted.

4. That, besides the loss of pay, your petitioner is also likely to suffer from loss of rank, as February surgeons of the Royal Army, according to the Royal Warrant of 1859, take rank as subalterns on joining, and are eligible for promotion to the grade of "first class," with the rank of captain, after five years' service; whereas your petitioner must serve ten years before he can attain the rank of lieutenant.

5. That promotion on examination under the Royal Warrant of 1859 has been withheld from your petitioner, as within the last two years he has on three several occasions made application for an examination to the Horse Guards, through his Excellency the Commander in Chief of the Madras Army, unsuccessfully.

6. That as the Royal Medical Warrant of 1858 has been carried out with retrospective effect, so the Royal Veterinary Warrant dated 1st July, 1859, still held in abeyance as far as Her Majesty's Indian services are concerned, may in like manner be carried out with retrospective effect from the date thereof.

And your petitioner, as in duty bound, will ever pray.

F. G. SHAW,
*Veterinary Surgeon, Remount Depot,
Oosoor.*

COMMUNICATION FROM MR. MITCHELL, IN REPLY TO MR. E. C. DRAY.

LEEDS; *Nov. 14th, 1864.*

GENTLEMEN,—I shall not trespass upon your space further than to state that my professional brethren, whom I have consulted, not only do not agree with the remarks of Mr. Edward Coleman Dray in your last number, but consider them impertinent, and even unjustifiable. I may also state, that they, being members of the Royal College of Veterinary Surgeons, were not a portion of the happy trio who did "*not* consider me any acquisition to their society."

I am, Gentlemen,

Yours respectfully.

To the Editors of 'The Veterinarian.'

REMARKS ON VETERINARY MEDICAL ASSOCIATIONS, AND THE POSITION OF THE PROFESSION.

By GEORGE POYSER, M.R.C.V.S., Ashbourne.

I AM tempted to say a word or two respecting the formation of provincial associations and the position of the profession, in consequence of some conversation I have had with a member of the Lancashire Association, and also from reading the letters in your Journal of Mr. Dray and Mr. Mitchell of Leeds. The question at issue between these gentlemen appears to be this—whether men possessing the Highland Agricultural Society's diploma, or rather certificate, ought or ought not to be admitted as members of these associations? I contend that all the gentlemen who are practising as veterinary surgeons under cover of the Highland Society's certificate have been misled, if they believe they are legally entitled to the name of veterinary surgeon. The separation of Professor Dick from the Body Corporate soon after the obtainment of the Charter, and the circumstance of the Highland Society acting the part of a foster-mother to the Edinburgh Veterinary College, are to be regarded as the cause of the discord which now exists, and which is yearly increasing in our ranks.

I am led to believe that every possible effort has been made by the different Presidents, as well as by the Council of the Body Corporate, to remove this objectionable state of things, but without success. Now, however, that these provincial societies are being formed, they too ought to direct their influence in a proper channel, and thus help to arrest the continuance of discord. It is not the gentlemen practising with the Highland Society's *pseudo* diploma against whom the Body Corporate ought to make a stand, but against the system which produces them.

I again assert that these gentlemen have been misguided if they believe they are entitled to the immunities and distinctions conferred by the Charter, although the Edinburgh College and Professor Dick are mentioned therein. The former is only a recognised school, while the latter can never be said to constitute a President and Council in himself. Where, then, exists his right, or the right of the Highland Society, to elect a court of examiners? It has been said that Professor Dick only fell back upon his original rights. Who gave that right? What legally constituted tribunal?

To me it appears that Professor Dick, by being a party, of his own free will to the obtainment of the Charter of Incorporation, vested for ever in the Council, elected according to the provisions of the Royal decree, his power of granting diplomas. The Highland Society may feel great sympathy with its veterinary professor, grant subsidies to his school, institute orders of merit, and otherwise encourage scientific attainments therein, but they too have no right to lead the young men educated at the college to believe that the certificate they issue is all that is required for legally constituting them members of the veterinary profession. It is high time that the Body Corporate made a stand against this innovation—this right of its Council. I know of no other chartered body who would for a day—much more for a series of years—allow such an infringement of its corporate rights. But the want of union—a departure from the motto of our arms—is the great evil of the veterinary Body Corporate. If the members would individually exert themselves with their Council, wrongs would soon cease to exist or become visionary; for with men, so with a cohort of men, they who respect themselves, or their moral and legal rights, are, and have them, most respected by others.

I can quite understand the feeling of kindness and conciliation that would dictate Professor Morton's reply to Mr. Dray; but the "diplomas of recognised schools" is but a vague expression; in fact, it has no meaning in the sense I have taken it to be used, for veterinary schools or colleges in Great Britain have no right to grant diplomas. Even the Royal Veterinary College of London is in one respect only a "school of instruction in veterinary medicine."

The plan of action in this matter, as it appears to me, would be to get the Council of the Body Corporate to pass a resolution allowing all gentlemen possessing the Highland Society's certificate, who are not already members of the body corporate, to become so by passing a nominal examination, with no fee save the expense of the diploma itself. I would pave a way of honour for the escape of these misguided gentlemen from the anomalous position in which they stand to the veterinary profession. I would peremptorily discountenance the creation of any more, by petitioning the Principal Veterinary Surgeon to the army to admit none in future to military appointments who do not possess the diploma of the Body Corporate; by petitioning the Home Secretary of State upon the illegality of the matter, and by showing the courts of law in Great Britain and Ireland that gentlemen possessing the Highland Society's certificate alone

are not legally constituted veterinary surgeons, and therefore can neither sue nor be sued, nor are they entitled to the emoluments and distinctions of such as are members of the body corporate.

It is of no use for those who hold the Highland Society's certificate arguing about the examinations at the Edinburgh College, or the position or attainments of some of their number; their abilities have never been questioned. I would ask them, as men of discernment and understanding, men who can appreciate the sentiments of the human heart, whether it is not more likely that prejudice exists where personal and pecuniary interests are involved rather than with those who seek for union simply on the ground of friendship. Why, then, stand aloof from the Body Corporate? Why not make our profession one in heart and body? Why countenance the perpetuation of discord among us? Come and grace the table of a *réunion*, with hearts true, noble, and kind.

THE NECESSITY OF MICROSCOPIC DEMONSTRATIONS.

By W. H. CROWHURST, M.R.C.V.S., Peasmarsh.

I CANNOT refrain any longer, after hearing Professor Spooner in his introductory address speak so highly of the use of the microscope and of the study of histology, from suggesting that one of the best microscopes that London can produce be placed at the College for the benefit of the students, and also the professor himself. If properly managed by one or other of the professors, the students would learn considerably more thereby than by all the diagrams imaginable. The College may truly be said to take a high position; standing, indeed, second to none as a school of veterinary medicine and a hospital for animals; and it is fitting that within its walls the students should be enabled to microscopically examine and study both the fluids and solids of the body. They hear of this being done, and are instructed by some of the teachers in the revelations of the microscope, but many of the students neither possess a good instrument nor have sufficient opportunities of examining for themselves either healthy or diseased structures.

I am sorry that I had not the opportunity when at College of thus investigating the various tissues of the body, although I was informed thereof, and instructed by

diagrams. There is nothing like seeing things for yourself. If it be difficult to examine anything, as it is said to be, with a microscope, this seems to me a greater reason why there should be one at the Royal Veterinary College for the use of the students.

Facts and Observations.

DO BACTERIUMS CAUSE DISEASE?—In a former number we gave an account of M. Davaine's experiments, in which death followed the inoculation of healthy animals with a few drops of blood containing *bacteriums*, and taken from other animals suffering from spleen disease. MM. Leplat and Jaillard have communicated counter experiments to the French Academy. They obtained bacteriums from vegetable and animal solutions, and introduced them into the circulation of animals without producing any evil effects. From this they conclude that in M. Davaine's experiments it was the diseased blood, and not the bacteriums, that caused the mischief.

The question is, however, far from settled by the new experiments, and their authors are by no means entitled to assume that, because vibrions are much alike in appearance, their properties must be the same. It would be more in accordance with observation to state exactly the contrary, and affirm that very similar bodies of this kind are connected with different kinds of fermentation and putrefaction.

FRESH EXPERIMENTS ON BACTERIUMS AND DISEASE.—M. Davaine has communicated to the French Academy another series of experiments on the propagation of disease by inoculating with blood containing the *bacteriums* which he affirms to be always present in spleen disease (*sang de rate*). The bacteriums causing the disease he proposes to call *bacterides*, and, so far from their being identical with bodies of somewhat similar appearance, which act as ferments of putrefaction, he finds his bacterides perish when the blood putrefies. He propagated the disease by causing animals to eat portions of the liver or other viscus removed from creatures

affected with the *sang de rate*. Portions of putrid liver from healthy animals did not, when swallowed by others, produce anything like the mortality occasioned by pieces of non-putrid liver containing the bacterides. Females with young did not communicate the disease to their foetal offspring.

THE ALKALOIDS OF OPIUM.—M. Claude Bernard states, in *Comptes Rendus*, that out of the six proximate principles found in opium, only three, *morphine*, *narceine*, and *codeine*, produce sleep. *Narcotine*, *papaverine*, and *thebaine*, have no soporific properties. Morphine produces the most profound sleep. Codeine leaves the nervous system excitable, and when the animal wakes up from its action it is in a natural state, not frightened and scared as by morphine. Narceine produces sleep in smaller doses than codeine, and the sleep is sounder, but not so leaden as when morphine is employed. There is also an absence of excitability by noises which is noticeable in morphine sleep, and still more so in that of codeine. The awakening is natural.

M. C. Bernard recognises three properties in these alkaloids—soporific, convulsing and exciting, and poisonous. In soporific power narceine stands first, then morphine, then codeine. The convulsive series runs—1, thebaine; 2, papaverine; 3, narcotine; 4, codeine; 5, morphine; 6, narceine. The poisoning properties are shown in the order—thebaine codeine, papaverine, narceine, morphine, narcotine.

A SOURCE OF OZONE.—*Cosmos* mentions a process of M. Bælger for obtaining a continuous supply of ozone. He mixes two parts by weight of finely powdered permanganate of potash with three of sulphuric acid. A mixture of one part of the permanganate with that of the acid is so powerful an oxidizer as to produce inflammation and explosion if brought into contact with essential oils.

POISONING FROM CONTACT WITH TOBACCO.—M. Namias communicates to the French Academy the case of a smuggler who suffered under strong symptoms of tobacco poisoning, through hiding under his clothes, and all over his body, in contact with his skin, a quantity of the leaves of that plant.

FERMENTATION OF WINE.—M. Berthelot finds that the skin of grapes bears on its surface, not only spoils of ferments, but often actual *globules*, and hence fermentation is easily excited as soon as the grapes are crushed, notwithstanding any precautions to exclude germs floating in the air.

THE VETERINARIAN, DECEMBER 1, 1864.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE REQUIREMENTS OF THE PROFESSION.

WE invite attention to the "communications" of our present number, which, apart from some interesting and instructive reports of cases of disease, are of a nature to demand much thought and consideration. It will be seen that they deal with subjects of vital importance to the success of any calling, viz., the *education*, the *position*, and the *prospects*, of its members.

Our present issue being, however, the "index number," we are compelled to rest satisfied with a few passing remarks on some of these questions; for were we to attempt to discuss any one of them *in extenso*, we should have to draw far too largely on our limited space, and perhaps also on the patience of our readers. A necessity for the *special* education of the student of any art or science being made as perfect as possible will not, we opine, be questioned; most assuredly not by any true friend to its advancement. The means to accomplish the end may, however, be a debateable question, as men are found to widely differ as to what in reality constitutes an improved education. Some contend that all improvement rests upon a better practical acquaintance with the subject, while others affirm that a more perfect knowledge of its fundamental truths is alone required. We do not stop to discuss these postulates on general principles, but pass on to remark upon the *special* recommendation put forth by Mr. Crowhurst for the better instruction of the students of veterinary medicine.

However desirable it may be for microscopical demonstrations of healthy and diseased structures to be made for the complete understanding of the sciences of anatomy and pathology, it is almost practically impossible for them to be efficiently carried out in a class of upwards of one hundred students. We know of no school of medicine in

which the plan has been attempted with success, or, indeed, where it is now practised. To be of real benefit, demonstrations of this kind can only be given to a selected few, or to a class specially formed for the purpose. Even then several microscopes are required, and a lecture theatre expressly adapted for the object, on a plan analagous to that of the Royal College of Surgeons. Besides the experience needed in the use of the instrument, the time which is required to prepare and properly exhibit specimens is immense, and the slightest tampering with the instrument, or freak on the part of those waiting for "a look," will upset the work of hours, and perhaps do great mischief to the microscope itself. Many other practical difficulties force themselves upon us, which, however, we cannot now discuss. Those of the Professors of the College who possess microscopes have ever shown a readiness to give an *optical demonstration* to an inquiring pupil of any structure or object he especially wished to investigate, and they have never failed to explain to the class the general knowledge which they had themselves thus acquired. It is true that a sight of an object will make a more lasting impression on the mind than the best description, and this, we contend, is not denied a pupil seeking *special* information. "A College microscope" could only be made to supply the place of a private one, and be employed in the same manner. It could not be that the pupils should have free access to it, and as we have shown, each of the teachers who make microscopic researches is already in possession of an instrument of the best construction.

We turn from the special education of the pupil to the *position* of the profession. To improve this is a far more difficult thing to effect, and it will require all the energy and talent which Mr. Poyser has manifested in his first communication on the subject, to be perseveringly adhered to in attempting its accomplishment. We most fully agree with him, that our position as a profession suffers greatly from the present state of things. No house should be divided against itself. Earnestly have we laboured to effect a union, and shall still continue so to do. Would that we saw the beginning of the end, but as yet we confess

to be unable to do this. If a "year of grace" will unite us, the sooner it comes the better; but come it never can unless a faithful pledge be given that the abuse shall end. Great faults have been committed on both sides, and we regret to see even now a disposition to repeat some of them. Forbearance was never more needed than at present, and Mr. Poyser will find that he also has something to learn on this matter, and that several of his views must be modified and adapted to existing circumstances. We say this with no wish to discourage; nay, we court the expression of the opinion of all who desire, like himself, to effect a fusion into one body corporate of a now divided profession. These ideal droppings must suffice for this occasion. The subject is one which will yet call for a free use of our pen, and we forbear therefore from entering upon its further discussion now.

The third thing, alluded to by another of our correspondents—Mr. Shaw—is the *prospect* which the profession has of justice being done its public services.

The Indian Army Veterinary Surgeon has good cause of complaint, and we counsel no forbearance here. The petition of Mr. Shaw must be followed by others; nay, every man must speak for himself, as well as act in concert with his professional brethren. "Agitate" must be the watchword, and no tongue be silent till full justice be done. We need scarcely say that our pages are open, as they have ever been, to all who seek to improve the standing of the profession, and that we shall not hesitate to use our "*Lancet*," to extract "cold blood" from official veins. Sir Charles Wood has done well to attend to what our sharp-cutting contemporary has had to say of "the deep wrong inflicted on the Indian Medical Service by his Warrant of May last." While these remarks were passing through the press, we have observed with much satisfaction that, as Secretary of State for India, he has superseded that Warrant and issued another, and thereby repaired the injustice done the Medical Officers of the Indian Army. Be it remembered, that our complaints stand on an equally just ground, and must receive a like attention.

Extracts from British and Foreign Journals.

THE PROGRESS OF ZOOLOGY.

(Continued from p. 652.)

By SHIRLEY HIBBERD.

THE facts accumulated by Darwin and his coadjutors in this inquiry place the question of species in a very different light to that in which it was regarded by Lamarck. External influences and a power of adaptation to circumstances, are terms that sound well and promise much, but they come to little when severely tested. *Felix qui potuit rerum cognoscere causas.* If the wading birds have acquired long legs by treading tiptoe on the muddy flats where they seek their food, how is it the ostrich has not, during more than 3000 years, accomplished a stretch of its wings? for it flaps them fiercely enough during its perambulations to cause growth if they were conformable to the alleged law of modification by circumstances. The fancy pigeons, which assume so many forms that we almost doubt at last if they are pigeons, maintain the specific characters of the wing almost unaltered. The ibis of to-day is the same in all its characters as the ibis on the oldest Egyptian monuments; the same is the case with the African elephant as figured on ancient coins, and it becomes now a question whether any departure from type can long maintain its ground—whether, in fact, variation in a marked degree is not the first step in the process of the extinction of the race in which the variation has occurred. The turnip and the potato as now cultivated in our fields are varieties secured by *artificial* selection, and they appear to be fast declining in vigour, so much so that farmers are seeking substitutes for both, to fill the places in the routine of tillage which they threaten soon to leave vacant. In these cases the process of nature seems to be only permissive as regards varieties, and that but for a season; they must revert to type or disappear.

In the applications of zoology, especially in connection with physiology, which is the key to zoological secrets, this question of species has more than a technical value. The whole interests of civilisation are bound up with it. The patriarch Jacob was evidently an adept in cross breeding and the selection of races, and observed the law that “like pro-

duces like," with as much discretion as Mr. Jonathan Webb, the modern master of the art of sheep breeding. Dr. Beke, who has just traversed the country where Jacob grew rich in tending Laban's flocks, reports that "ring-straked, speckled, and grisled cattle," abound there, and apparently within such a circumscribed range as to render it probable that the race has maintained its integrity since the day of the patriarch's servitude, which our marginal Bibles place at a date 3600 years antecedent to the present time. The tailless cats of the Isle of Man, and the tailless poultry of Burmah, are scarcely to be traced back to their parentage, and have all the characteristics of true species as far as their constancy of reproduction is concerned. In his twentieth chapter Livingstone says, "Near Massangano I observed what seemed to be an effort of Nature to furnish a variety of domestic fowls capable of bearing with comfort the intense heat of the sun. Their feathers were curled upwards; thus giving shade to the body without increasing the heat. They are here named 'kisafu' by the natives, and 'arripiada', or shivering, by the Portuguese. There seems to be a tendency in Nature to afford varieties adapted to the convenience of man. For instance, a very short-legged species of fowl was obtained by the Boers, who required one that could be easily caught in their frequent removals. A similar instance of securing a variety occurred in the short-limbed sheep of America." Such things as these are matters of daily observation; the question is, to what law are they subject, or, in other words, what is the philosophy of their occurrence? If Mr. Darwin had sent forth his book as a collection of data, instead of as the statement of an hypothesis, there would have been the same broad field for discussion, but with the advantage of greater freedom; for it is in vain to seek for the philosophy of varieties until we have arrived at an unexceptional theory of species, which we certainly have not, unless it be the vague definition that a species is a congenital expression of all the forces concerned in its production. Our conclusions, for the present, are provisional, and each new conclusion arrived at simply pushes the inquiry a stage farther back. The subject is as much one for experiment as for inquiry into the accidents of nature. The intermediate form between the horse and the ass is a mule, which is infertile with another mule of the opposite sex, and it is thenceforth concluded that all hybrids of a given class are incapable of procreation among themselves. But M. Rouy, of Angoulême, is reported to breed hybrids between the hare and the rabbit by thousands for the market, and these leporines are further stated to be fertile both with the

hare and the rabbit, and with each other. Some of these leporines have borne young in the gardens of the Zoological Society, but whether they are of the first cross is at present unknown. The differences between the two types are many, yet they are rather in degree than kind. The heart of the hare is nearly five times the weight of that of the rabbit, the lungs are nearly four times as heavy, the calibre of the trachea three or four times as great. Furthermore, the period of gestation in the hare is understood to be a month, that of the *wild* rabbit three weeks; the young of the rabbit are born blind, those of the hare see; the rabbit burrows, the hare seldom goes to earth. There is one great peculiarity of these hybrids of very great importance as to the question at issue—the males show a great disinclination to copulation, which is very different to the males of the (so-called) species, and if we were to suppose such a cross to arise in nature, we must also suppose it would soon be lost through this very peculiarity. But much more interesting cases, bearing on the same question, were communicated by Dr. Crisp, in the paper from which we have gathered the above particulars.* Four hybrid ducks were bred at the Zoological Gardens between the summer duck (*Anas sponsa*), the pochard (*Fuligula ferina*), and the ferruginous duck (*Fuligula nyroca*). It is true that in these instances the parent species are in structure and habits very nearly allied, and the only difference of importance is that the summer duck has eight pairs of ribs, the others have nine; but an extra pair of ribs is no proof of specific distinctness, for in man an extra pair occurs occasionally, and in the anthropoid apes there is sometimes a pair of ribs and one or two vertebræ above the typical number, and the ribs themselves are but elongations of processes with which every segment of the vertebral column is furnished. But these facts compel us to ask, still more eagerly, what is a species? Are the three species of duck just named specifically identical, and did the hare and the rabbit originally proceed from the same stock?

(*To be continued.*)

* *Proceedings of Zoological Society*, Feb. 12, 1861, paper by Edward Crisp, M.D., F.L.S.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF
THE LORDS OF THE COUNCIL AS TO THE VACCINATION
OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VAC-
CINATION IN PREVENTING SHEEP-POX.

By JAMES F. MARSON, Esq., F.R.C.S., Resident Surgeon
of the Smallpox Hospital, and

Professor SIMONDS, of the Royal Veterinary College.

(Continued from p. 633.)

THE vaccine disease in the sheep, even when developed to its fullest extent, is very unlike the same disease in the human subject. In the sheep it is but seldom anything more than the production of a small papule, which occasionally results in the formation of a minute vesicle, or more commonly a pustule, which is sometimes, although very rarely, surrounded with a slight areola. Generally, however, neither vesication nor pustulation follows, but a small scab is produced, which soon falls from the site of the puncture, leaving no trace behind. The disease passes quickly and irregularly through its several stages, so as to have ended by the eighth or ninth day, or not unfrequently even before this time. Lymph is but rarely obtainable, and never but in the smallest quantity, and this on the fifth or sixth day succeeding the vaccination. The effects are only local, and the animal's health never impaired. In man, on the contrary, vaccination can nearly always be made to take effect, a vesicle being formed on the eighth day, affording regularly lymph for the vaccination of others, which is always, or nearly always, followed by areola, the vesicles being never so small as those observed in sheep, excepting in what are called abortive or spurious cases, which, however, in well-conducted vaccinations, are of very rare occurrence.

Our observations, therefore, fully confirm the remarks of Mr. Ceely, of Aylesbury, who says, "That imperfect development and premature decline, with little or no areola, is the rule" in the vaccination of sheep.

Besides the 200 ewes, two rams were vaccinated. In one ram, effects rather greater than those usually observed were produced in four of the punctures, and in two of them in the other ram. Both these animals were subsequently ovinated and contracted the sheep-pox, passing regularly through its several stages. Both recovered. Six lambs were also selected for vaccination, four of which were operated on with Smallpox Hospital lymph, and two with primary lymph. The Smallpox Hospital lymph took effect in all four

animals, but the primary lymph failed in each case. The six lambs were also ovinated with success, and all recovered. No difference in the course of the disease produced by the ovinations being observed between those in which the vaccination took effect and those in which it failed.

Besides the preceding instances of ovination after successful vaccination, twenty-five sheep, which had also been successfully vaccinated, were ovinated, and contracted the disease. Two of these animals died; and it is especially worthy of comment that both of them had shown effect *twice* from vaccination, thus proving the non-protective power of even a double effective vaccination.

Sixteen sheep which had been vaccinated with success were exposed to the sheep-pox and took it naturally; and out of this number no less than eleven died, thus proving that the severity of the disease was in no way mitigated by the vaccination.

Our experience of the vaccination of sheep therefore agrees with that of Hurlrel D'Arboval, who gives the following details:

"1523 sheep," he says, "were subjected to the operation of vaccination, and of these, 1341 contracted the vaccine disease, and 182 were not affected. Out of the 1341 sheep, 429 were subsequently exposed to sheep-pox, either by direct ovination or by being placed among infected animals, and 308 of them were attacked with the malady." Hurlrel D'Arboval infers that the escape of the remaining 121 sheep was probably to be attributed to either their non-susceptibility or to some defects in conducting the experiments; and he concludes that "vaccination cannot be substituted for ovination."*

There is an impression, nevertheless, on the minds of some persons in France, as well as in England, with which, however, we do not concur, that vaccination gives to sheep a short temporary immunity—say for a month to six weeks—from the infection of smallpox. The following extract relating to this subject, from Gasparin's 'Des Maladies contagieuses des Bêtes-à-laine,' has been kindly furnished us by Mr. Ceeley:

"§ 151. On ne cite qu'un très-petit nombre d'expériences semblables, qui donnent un lueur d'espoir pour le succès d'une telle opération; mais les expériences qui lui sont contraires sont nombreuses et décisives. C'est ici, l'opposé de ce qui nous arrive pour la clavelisation; dans celle-ci, les expériences affirmatives sont nombreuses, et on ne cite que quelques expériences négatives.

"MM. Husson et Verrier vaccinèrent 233 moutons dans un troupeau où venait de se manifester le claveau. Au bout de

* 'Dictionnaire de Médecine Vétérinaires.'—Art. "Clavelée."

quelques jours, la maladie éclata sur les bêtes chez qui la vaccine n'avait rien produit, et ce ne fut que le *quarante-cinquième jour* qu'il se déclara sur celles qui avaient eu la vaccine; la maladie y fut aussi fâcheuse que sur les autres; un grand nombre de bêtes succombèrent.*

“ *Cette expérience semblerait prouver que la propriété préservative existe pendant quelques jours, que la peau a besoin de se remettre de la réaction causée par la vaccine avant de se re-devenir capable de contracter le clavelé, et elle expliquerait le prétendu succès des contr'épreuves tentées par quelques vétérinaires.*

“ § 152. Mais d'autres savans soumettaient aussi la vaccine à des expériences tout aussi peu satisfaisantes. Brugnone, à Turin, se prononçait contre ses prétendues propriétés, d'après ses expériences.†. Valois, à Versailles, vaccinait 50 moutons; dans chacun eût de deux à quatre pustules bien caractérisées, *et trente-trois jours après la majeure partie de ces animaux fut atteinte de la clavelée.* Elle fut benigne ou confluente dans la même proportion que chez les animaux non-vaccinés; quatre y succombèrent.‡

“ Enfin plusieurs propriétaires, parmi lesquels nous citerons M. Chancey, après avoir vacciné des moutons, les voyant ensuite attaqués du clavelé, en concluaient qu'ils avaient eu la fausse vaccine, *quoiqu'elle eût été accompagnée d'une aréole très-apparente.*§

“ Il fallait en conclure que la vaccine n'était pas *un préservatif suffisant.* Voilà quels sont les travaux qui ont été entrepris relativement à la vaccination des troupeaux. Ils me paraissent offrir des résultats fort clairs, et on ne peut plus guère conserver l'espoir d'aneantir la clavelée par cette méthode. Ce résultat est désagréable, sans doute, mais il n'en est pas moins vrai.”

It will thus be seen that, in one instance, some vaccinated sheep on exposure did not show the disease for forty-five days, and in another instance for thirty-three days.

Even were it proved, but which it has not yet been, that vaccination does protect sheep for one or two months against contracting smallpox by infection, the owners of sheep, we should imagine, would never have recourse to the trouble and expense of having them vaccinated for so short a period of protection, with the uncertainty also of only 35 per cent. of them, on the average, taking the vaccine disease.

(To be continued.)

* ‘Rapport de la Société centrale de Vaccine,’ 1811.

† ‘Memorie della Societa Agraria di Torino,’ 1812.

‡ ‘Annales d'Agriculture,’ tome 53, page 60.

§ ‘Bibl. Brittan. Agr.,’ tome 10, page 216.

HEALTHY STABLES.

IN the annual review of the progress of hygiene presented to the Army Medical Department, by Professor Parkes, of the Army Medical School, and lately issued, notice is taken of the recent report on cavalry stables, made after an inquiry into the subject by the Barrack Improvement Commission. The question is entirely solved whether or not the men should be placed over the stables. As regards the men, there was much to be said against this arrangement, but there was something to be urged for it. But the horse's health has turned the scale. The stables cannot be properly ventilated or lighted if the men's rooms are overhead. In some of the cavalry stables examined, the air was so foul that it was matter of surprise how animals could breathe it and retain any measure of health. In the old troop stables at Hounslow each successive horse, from the corners to the centre, is supplied with air fouled more and more by the other horses. Many animals would perish under the treatment inevitable in the older class of cavalry stables but for two things—their daily exercise in the open air, and a certain habit which their constitutions acquire of resisting air poisoned by continued exposure to their action; but this resisting power of habit can only be trusted to temporarily, and inevitably ends in loss of health and life. If the horse is to be in health and strength, he must have a free diffusion of the atmosphere, including absence of stagnation, abundance of light, good drainage, absence of nuisance, and sufficient space to live in. The inquiry has shown beyond question that the best form of building is a one-storied stable and one or two rows of horses; the ventilation to be by the roof, and formed by a louvre 16 in. wide, carried from end to end, and giving four square feet of ventilating outlet for each horse. The stables recommended to be built in future would give each horse 100 ft. of superficial, and 1605 cubic feet. A course of air-brick would be carried round at the eaves, giving one square foot of inlet to each horse; an air-brick is introduced, about six inches from the ground, in every two stalls; there is a swing window for every stall, and spaces are left below the doors. In this way, and by attention to surface drainage and roof lighting, it is anticipated that stables will become perfectly healthy. In old stables ventilating shafts are to be carried up and air-bricks introduced. More window space is to be given.—*Times*.

Translations and Reviews of Continental
Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, May, 1864.

MORBID FERMENTS AND THEIR NEUTRALIZATION BY THE ALKALINE SULPHITES; BEING AN ACCOUNT OF SEVENTY EXPERIMENTS MADE BY DOCTOR GIOVANNI POLLI, OF MILAN. FROM THE ITALIAN OF DOCTOR JANSSENS, OF BRUSSELS.

IN a series of articles published in 1861-2-4, the Belgian medical press has drawn attention to the scientific principles which serve as the basis of the new *intro-chemical* doctrine formulated and defended by Dr. G. Polli. The theory of ferments played a very important part in the pathology of the last century, of which modern science has availed itself. Stripped of its exaggerations, it is based on the most recent discoveries in organic chemistry and experimental pathology. The therapeutic applications to which it has already led seem to presage a revolution, both in the interpretation and the treatment of most of the acute dyscrasic affections which are constituted by a qualitative alteration of the blood, and against which the so-called classic medicine has hitherto been powerless, and has only shown the incertitude of science and the impotence of our art. For these reasons we are convinced that we are rendering a service to science, as well as to our colleagues and humanity generally, in propagating the knowledge obtained by these experiments, which support the doctrine of catalytic maladies and morbid ferments. They serve to remove all doubts on the efficacy of the alkaline sulphites either to prevent or combat the special alteration of the blood produced by morbid ferments. To this end we publish now the first essays made by M. Polli on dogs, to show that sulphites administered to an animal really counteract the toxic effects of certain substances which, introduced into the blood, have the power to develop a catalytic malady. The results of these experiments practised, *in animâ vili*, united to the numerous therapeutic applications of the alkaline sulphites during the last three years, and which we have recorded in a recent article in the *Presse Médicale Belge*, prove to every impartial individual that the doctrine of M. Polli cannot be compared with those speculative theories which are built at pleasure, and are destined to live only a day; but merits, on

the contrary, the serious attention of all those who do not profess a blind opposition to all inventions whatever, and who do not confound, in an unjust condemnation, all rational suppositions, the object of which is truth. Among the seventy experiments made by M. Polli we will select some of the most conclusive, in order to avoid a repetition of details nearly identical; but we will, at the end, give a succinct summary of the whole of these experiments made by the author.

Experiments made with pus.—To a dog weighing four kil., ten grammes of sulphite of soda were given in the space of five days. On the 19th of November, 1860, at 3 p.m., one gramme of thick putrid pus was injected into the saphena vein taken from an abscess on the back of an old man. This pus had previously been diluted with an equal bulk of water, to render it more fluid, and to prevent it forming obstruction in the veins; immediately after the injection the dog seemed stupefied, lay down, and refused all food during that day. On the next day he had recovered his liveliness and appetite. Two more grammes of the sulphite were given in two doses. On the 19th another injection of pus was made into the jugular vein. The same symptoms of stupefaction and prostration appeared for a few hours after the injection, but the next day the dog was better. He was subjected regularly to taking two grammes of the sulphite of soda until the 23rd. The dog rapidly recovered his liveliness and his appetite, the wounds resulting from the apertures assumed a favorable aspect and cicatrized rapidly; so much so, that the animal might be considered as perfectly recovered five days after the second injection of pus; and even during that time the general state of the dog, as well as the wounds made for the injection, presented but slight signs of derangement. On the 17th and 19th similar doses of the same pus were injected into the femoral veins of another dog, bigger than the former (weighing about eight kil.), but to which no sulphite of soda was given neither before nor after the injections. These operations were easily accomplished, and the dog seemed to suffer very little. After the first injection the dog was stupid and dull; the next day he had somewhat recovered, and took his food; after the second injection he was very much distressed, and had several watery evacuations; the next day he lay down continually in his kennel; he refused all food. The pulsations at the heart were feeble and accelerated (140 per minute), the respirations frequent (14 per minute). The following days he became much worse; he could hardly move, and when made to walk he took a few steps.

limping, and then fell down. The wounds extended and assumed an unhealthy aspect; the right hind leg became tumefied; the typhoid state persisted; gangrene set in, and the dog died ten days after the second injection.

Autopsy.—Lungs, heart, and liver normal; the mucous membrane of the stomach presented a vivid red colour towards the pylorus; that of the duodenum showed some traces of inflammation, and also some small ulcerations, the largest of which was about a centimètre in circumference, and was situated near to the pylorus; they affected the intestine even to the peritoneum, which at that place presented a violet colour. The colon contained soft ingesta of a dark-red colour, and presented a great many slate-coloured spots, some of which showed traces of suppuration in their centre. The difference in the results of the experiments practised on these two dogs cannot be more evident, and cannot be explained otherwise than by attributing to the sulphite taken by the first subject, before the injection, an antiseptic effect which neutralized the effect of the purulent ferment, while in the other it developed its morbid effect without any obstacle, and to which he fell a sacrifice. To remove all doubts on the results of this experiment, M. Polli wished to make a counter proof that the strength of the dog who fell a sacrifice to the injection of the pus was greater than the one which resisted the effect after having been treated with the sulphite. This was of great value, but he wished still further to eliminate the influence depending on the individual resistance of the inoculated animal, so as to attribute to the remedy neither more nor less than that which absolutely belonged to it. The same dog which had, thanks to the protective influence of the sulphite, so well resisted the injection of the pus, continued to be in perfect health, was submitted to the following experiment five days after leaving off the sulphite; another injection of one gramme of pus was made, and this was repeated two days after, without, however, the administration of the sulphite during the interval. A few minutes after the first injection the dog seemed prostrated, he vomited and had several evacuations, was dull, and remained lying down the whole of that day. The next day he had recovered a little of his vivacity; but immediately after the second injection he was greatly prostrated, and remained down the whole of the day; the following day he was able to take a little food; the day after, having remained prostrated in his kennel and taken very little food, but drank a great deal, he walked with great difficulty and limped; the

wounds where the inoculation had been made became enlarged, and had a bloody, fetid discharge. At the end of six days the dog presented all the symptoms of typhoid fever; he began to recover a little, that is to say, after another six days he regained his strength and appetite, the wounds began to cicatrize, so that, twelve days after the last injection, he might be considered convalescent. The dog was now killed by a blow on the head with a hammer. At the autopsy traces of old inflammation were found in the intestines, such as injection of the mucous membrane of the duodenum and vascular arborisation on the whole of the small intestines.

If in this second experiment the dog had died like the others the conclusion in favour of the prophylactic and therapeutic virtue of the sulphite would have been certainly more evident; but nevertheless it does not fail to give us an important proof of the efficiency of the remedy, inasmuch as in the first experiment the artificial poisoning of the blood produced only a slight indisposition, and, on the contrary, provoked a grave malady in the same animal when not under the prophylactic influence of the sulphite. The experiment confirms the necessity pointed out above, of always taking into consideration the peculiar impressibility of the individual operated on, so as to avoid the possibility of erroneous conclusions.

Experiment with putrefied blood.—To a greyhound, weighing eight kil., sixteen grammes of the hyposulphite of soda were given in two days, in one-gramme doses. On the 9th of March, 1861, at 3 p.m., two hours after the administration of the last dose, three grammes of blood in a state of putrefaction were injected into the femoral vein of the right leg. The blood used in the five comparative experiments which follow was always the same; it was blood of an ox defibrinated and exposed to the air for a month (November), and was quite putrid; it was afterwards preserved during three months in a bottle corked up. It was of a red-violet colour, extremely fetid, and of an ammoniacal odour; by the microscope some red corpuscles, fringed or starred, as described by Richardson in ammoniacal blood, were discovered. A few minutes after the injection the dog vomited some mucous matter mixed with blood; afterwards some whitish viscous matter; fæcal evacuations also occurred at the same time. Some balls in which the last doses of the hyposulphite were incorporated were next administered. After this the dog did not seem so much distressed; he remained seated in the usual way on his hind legs. On taking him to his kennel he ran into it with alacrity, and without limping. However, during the rest of the day he

appeared dull, and refused his food; but towards evening he drank a little broth, and lay down quietly during the night. The next morning he was still a little stupefied; he drank some broth, and swallowed two balls of meat containing each one gramme of the sulphite of magnesia; the third day he fed as usual, was lively, but seemed inclined for repose; the wound resulting from the operation was red, dry, and of a healthy aspect; the fourth day the animal was considered recovered; he was lively, fed well, and the wound was progressing towards cicatrization. On the same day, and nearly at the same hour, three grammes of the same putrid blood were injected into the right femoral veins of two other dogs, weighing from seven to eight kil. each, to which no sulphite had been administered. One of them directly afterwards was in a state of stupor; he stood without moving, his head hanging down; his strength left him, he fell on his side, got gradually worse, and died at the end of five hours. On the autopsy the lungs were found to be covered with small ecchymosed spots, the liver was marbled with black-violet spots, the right ventricle of the heart contained black fluid blood, the gastrointestinal mucous membrane was coloured with a deep red, and the small intestines presented a sanguino-mucous exudation. The other dog, after five hours of sickness, during the whole of which he refused his food, could not stand up, but remained constantly lying on his side in a state of stupor; he also died after the wound made for the injection had assumed a gangrenous aspect.

The autopsy presented in the lungs, which were of a bright-red colour, a great number of black, ecchymotic spots, one of which showed a tendency, in the centre, to suppurate; some grumous black blood was found in the right cavity of the heart and large blood-vessels; in the left ventricle there was a large fibrous coagulum, of a yellowish colour, which extended like a polypus into the aorta; the intestinal mucous membrane was throughout much injected, thickened, and covered in places with purulent matter. Nothing can be more conclusive than this experiment. It shows in these two dogs, inoculated at the same time, a difference in the power of resistance to morbid action; but both succumbed with the same symptoms, and the same lesions were found on the *post-mortem*; while the dog which had been sulphited, after having suffered from a slight stupor, consequent on the operation, recovered his normal state, and, after a few days, his perfect health. To show more evidently that this dog was indebted for his safety to the antifermentative action of the sulphite of soda, which

had been injected, M. Polli performed the following experiments, as other proofs. In a dog weighing seven kil. he injected only one gramme of putrid blood on the 31st of January, 1861. The animal seemed very giddy after the operation, he remained down, and was dull; he refused his food during the five following days, and only moved with difficulty; when made to do so, he limped. The wound extended and suppurated. Towards the sixth day he began to recover, and to take a little food; was more active. In about a fortnight he became convalescent, and recovered his usual vivacity, and the wound advanced towards cicatrization. This experiment confirmed the uniform deleterious effect of putrid blood, when introduced into the circulation, and shows that, if the dose is not large enough to kill the animal, it provokes a serious malady. The same day (January 31st) he injected into the right femoral vein of another dog, of the same size as the last, one gramme of the same putrid blood, mixed with three grammes of sulphite of soda in solution. After the operation the dog remained stupefied; the whole of that day he did not move out of his kennel; about the middle of the next day he took a little food and drink; the third day he was lively, ate all his food eagerly, ran about, but holding up the leg on which the operation had been made. The wound was dry, and had a favorable aspect. On the 9th of February, 1861, the same experiment was repeated on another dog, in which was injected into the femoral vein, first one gramme of putrid blood; one minute after, one gramme and a half of sulphite of soda, dissolved in five grammes of water; the animal became somewhat stupefied, refused his food during two days, but was not in a state of somnolence; he afterwards became lively, and recovered his strength; three days after that he was again in perfect health. These three experiments evidently show that, though the introduction of putrid blood, mixed with sulphite, affected two of the dogs, it only caused in them a slight derangement, in which the typhoid symptoms, or the signs of septic infection, were ascertained to be absent. This, however, characterised the malady in the third dog, in which the putrid ferment was injected without the sulphite. They also demonstrate that it is really the effect of the sulphite on the putrid ferment which neutralizes the morbid influence in the blood itself. They also demonstrate that the sulphite of soda is not a poison, for three grammes of the saturated solution had been introduced in one injection, which is equal to two grammes three demigrammes of the solid sulphite. In a dog weighing

six kil. ten grammes of the sulphite of soda were administered daily, made up into five balls with bread-crumbs, for three consecutive days. On the 9th of June, 1861, the dog was in good health, and eight grammes more of the sulphite were given to him. Afterwards, a gramme and a half of putrefied human blood was injected into the right femoral vein. The dog became stupefied, sad, and refused his food during the whole of that day; the next day he was lying down in his kennel, but without stupefaction. On the third day after the injection he began to feed; became more active. On the fourth day he had completely recovered; the wound assumed a healthy aspect. Eight days after this the dog died without having previously shown any sign of illness, except great hæmorrhage from the wound, which took place during the night on which he died.

In order to make a comparison between the two preceding experiments, one gramme of the same putrid blood was injected on the same day in a small dog (weighing five kil.) without being submitted to any preventive remedy. Directly after the injection the dog vomited, and alvine evacuations and tenesmus supervened. He seemed anxious and agitated, remained standing on his four feet, as if petrified, for several hours, holding his head down. Death took place six hours after the injection. At the autopsy the lungs were found engorged, and presented ecchymotic spots on their surface; black clots of blood were found in the right ventricle of the heart; the liver was of a dark-red colour; the mucous membrane of the stomach was normal, but that of the intestines was of a dark-red purplish colour in places, even to the rectum, though a little less dark coloured in the ileum. Thus it is shown that in the two other dogs the administration of the sulphite and hyposulphite of soda succeeded in protecting the animals against the morbid effects of a toxic substance, which in smaller doses killed another dog not fortified by the same remedy. In order to give still greater value to these results, the dog which had been preserved by the hyposulphite was submitted to a counter-proof, the result of which was most conclusive. Eleven days after this experiment, when the dog was considered in perfect health, a fresh injection of one and a half gramme of the same putrid blood was made into the femoral vein, without any previous administration of sulphite. The dog died in three days, from gangrene in the leg where the injection had been made; the lungs were gorged and covered with ecchymotic spots; there was extravasated blood in the stomach, the mucous membrane of the intestines was purple, and

there were traces of these lesions in the rectum. If we are not mistaken, the interpretation of the facts which constitute this group of comparative experiments would appear difficult to us to demonstrate experimentally in a more evident manner—1st. The tolerance of the anticalcific remedy introduced into the blood, either by absorption or direct injection. 2ndly. Its preventive effect on the organism when the mass of the blood has been artificially poisoned. 3rdly. The direct neutralization of putrid forms in the blood itself, effected by inoffensive means.



Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The Journal of British Ophthalmology, and Quarterly Report of Ophthalmic Medicine and Surgery. Edited by JABEZ HOGG, Assistant-Surgeon, Royal Westminster Ophthalmic Hospital, &c. &c. London: John Churchill and Sons, New Burlington Street.

FRIENDS to the division of labour, from a conviction that it is conducive to the perfecting of the whole, whether in science or in art, we hail the appearance of the first number of the above periodical.

Although with us it may be that the diseases of the eye have not been so carefully studied in their various forms as they deserve to be, because the occasional loss of the organ in the lower animals is not attended with the same inconvenience as in man, nor is merely partial relief that may be afforded of any real good, yet we feel convinced they would nevertheless amply reward the investigator, while, by comparing the affections as they show themselves in the human subject, and noticing the surgical and other methods adopted for their removal, the loss of sight might be prevented, and the usefulness of the animal secured, as well as suffering lessened.

The introduction to the journal states, that it "will be a fair and impartial exponent of the views and practice of

English ophthalmic surgeons. It will give prominence to, and extended notices of, the additions constantly being made in this special department of the profession among our countrymen. At present there is no national organ of discussion in which native worth is allowed fairly to compete with foreign genius and pretension. The *Journal of British Ophthalmology* is therefore projected to supply the much required medium for the interchange of individual opinion, in the freest course of which real progress can only be expected to make good and certain way. Wherever this is active and honest, it will always be accompanied with a desire to bring experience, the basis of all knowledge, under the critical notice of others less interested than the immediate agents engaged, so that the true value of suggestions made, or treatment adopted, shall satisfactorily appear in the discussions raised."

The work will contain original articles and cases, reports of hospital and other practice, reviews and critical notices of books and papers, with correspondence and other matters relating to ophthalmology, British and foreign. It is well got up, printed on tinted paper, and liberally illustrated with woodcuts.

THE YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

THE quarterly meeting of this Association was held at the Unicorn Hotel, Ripon, October 10th, at 3 p.m. The President Mr. E. C. Dray, occupied the chair; there were also present Messrs. Fryer, Secker and Carter, Vice-Presidents; Richard Lord, Treasurer, and William Williams, Hon. Secretary; Mr. T. Greaves, Manchester, President of the Lancashire Association; MacTaggart, Halifax; Edmondson, Harmby via Bedale; Pratt, Masham; Paterson, Dewsbury; Bale, Otley; Horne, Barnsley; Broughton and Cuthbert, Leeds; Thomas Secker, Ripon, and Taylor, Wetherby. After the preliminary business, viz., the reconsidering of the rules, &c., had been transacted, Mr. Fryer read a highly practical paper "On Hernia," this gentleman having met with numerous cases of hernia in its several forms in his practice, and having been most successful in his method of operating. Previous to the reading of the paper the President made some remarks on the subject, observing that he felt confident they should have from the essayist a most valuable and

practical description of hernia, in consequence of Mr. Fryer having had many first-class horses under his care for this disease.

The discussion that followed was entered into by several of the associates present, each freely giving his experience, his method of treatment, and the success attendant upon his practice. Indeed, never was the good of veterinary associations so palpable as at this meeting; all freely and without any attempt at secretiveness laying before the meeting what they considered best to do in difficult cases of this kind.

The discussion being concluded, the retiring office-bearers received votes of thanks for their past services, and, as marks of approval the President, Treasurer, and Secretary, were re-elected. The Vice-Presidents, Messrs. C. Secker, Fryer, and Carter, would undoubtedly have also been reinstated in office had it not been felt that this would be an injustice to the other members; and, as such Messrs. MacTaggart, Halifax; Naylor, Wakefield; and Cuthbert of Leeds, were elected Vice-Presidents.

The next meeting of the Association—the annual meeting—will be held at Leeds, on the last Friday in January, 1865, at 1.30 p.m., when the Secretary will read a paper “On Counter-irritation.” After the business meeting, the members intend holding their *first* annual dinner, to which the Professors at the different veterinary colleges, and others distinguished in veterinary science, are to be invited.

(Signed)

J. WILLIAMS, Bradford,

Hon. Sec.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

A meeting of the above association was held in the Clarendon Rooms, North John Street, Liverpool, on the evening of the 15th November. Present—Messrs. B. Briscoe, R. Lucas, Eph. A. Friend, G. Heyes, J. Simpson, sen., J. Simpson, jun., Thos. Proctor, C. Twist, G. Kirkham, J. Brydon, R. Chambers, W. A. Wilson, Thos. Harwood, W. Dobie, Thos. Greaves, President, and Thos. Taylor, Hon. Sec., of the Lancashire Veterinary Medical Association.

Mr. R. Lucas was unanimously elected President of the association, in room of the late Mr. John Ellis, to whose memory he paid a well-merited compliment, referring in very appropriate and eloquent terms to the great loss sustained by the profession generally, and the veterinary surgeons in Liverpool in particular, by the death of so eminent and distinguished a member; one, he said, “who was not only an ornament to his profession, but a wise counsellor, a firm support, and a warm friend to all.”

Mr. Greaves then delivered the following able address on "The advantages and tendencies of Veterinary Associations:"

GENTLEMEN,—It is proper and becoming that my first remarks should be an expression of the sorrow I feel at the great loss your Association has sustained, and which we all mourn, in the death of your late respected President—Mr. Ellis—a gentleman highly and deservedly respected, not only in Liverpool, but also in Manchester, as well as in the Council in London; not only as a man of honour and integrity, but as a man of talent and a most distinguished ornament of the profession to which he belonged. Rightly did my friend Mr. Lawson remark, in the Council Chamber, that "the profession had no truer friend than was to be found in Mr. Ellis." Personally, I felt proud when apprised that you had done yourselves the honour of electing him your President, for such a selection may be said to have added a grandeur to your Association and to the high office he had been so worthily placed in. The honour, the interest, the usefulness and dignity, of the Association would have been in safe keeping in his hands; and full well do I know that you will gladly and proudly take charge of his fame and revere his memory.

I leave the question of his successor entirely with yourselves, but I may be permitted to say it is very desirable that he should be a man whose social and professional position commands respect; a man of kind conciliatory manners, and of a courteous and gentlemanly bearing; but above all should he be sincere, intellectual, indefatigable, and earnest, and have his heart and soul in the interest and welfare of his profession. Let it be held a sacred principle that this Association shall be conducted in a fair and proper spirit, and that it shall require from its members the observance of an honorable professional conduct. Let the straightforward conduct of its officers be such as to put an irresistible check upon any one who might be disposed to be so unscrupulous as to practise any intriguing, dissembling, or foul play, which, alas, is occasionally such a fruitful source of enmity and heartburning, especially in large towns, where competition runs high. It is one of the main objects of these associations to keep in check this overreaching, unprofessional conduct, and to create a purer and higher tone of professional honour. We do not expect to change the nature of man, or to eradicate his evil propensities or sordid passions, but we seek to keep them within reasonable bounds, so that we shall not go on like idle lads in the street scrambling for a few coppers thrown amongst them.

I have, perhaps, had more to do with Provincial Veterinary Medical Associations than any other man has had. I had the high privilege to call together the first society of the kind in England, fourteen years ago. That society existed only two years. Of the twelve members of which it was composed three only remain. Speaking figuratively, this society may be said to have expired like a smiling babe in its cradle, as if it were falling asleep and dreaming of a glorious future. After a lapse of twelve years I had

the high honour to call the society again into existence. I can compare that calm and silent repose like unto the powers of a great nation for a time laid aside—the sleep of the warrior, snatched during the interval of action—a repose but to acquire fresh power and energy—the sleep of a child, but the awakening of a giant. The society is now two years old, and looks like a cedar of Lebanon planted by the river of Jordan. Its roots strike deeper and deeper, and its wide-spreading branches shoot up higher and higher. It can now shelter and protect those who reared it, and who now meet under the most favorable auspices; for our Association is a firmly established institution, acknowledged and encouraged by the professors and the colleges. Each member is animated by a desire to advance the usefulness of our noble profession. It encourages a personal goodwill, and we feel individually fully conscious of the good fruits of thus associating together. Emulation having been excited, the progress we have made encourages us, nay, demands from us greater efforts and greater intelligence. Every educated person who studies the times in which he lives, and wishes earnestly to further the mission he has to perform, feels a new stimulus in these associations, for they undoubtedly exert an influence, unperceived by us at present, perhaps, but which nevertheless is doing good. The Providence which governs this world creates nowhere success or prosperity for an ignorant, indolent, individual society or nation, and we may be assured that the highest interests of our profession and of its individual members are identical. It is a dangerous symptom when man becomes indifferent to the interest and welfare of his fellow-man; it is only ignorance and cupidity which prevent their uniting to the common advantage of both. To dispel that ignorance, and to show how advantageously to himself man can help man, in the present state of civilised society, should be the aim of every philanthropic person. We must remember, gentlemen, that friendship is a tender, fragile plant, which can live only where it is reciprocated. Our day of opportunity will soon be passed, and we ought to take advantage of it, whilst it is here, to stimulate each other to individual exertion. If we desire to make any considerable progress in our profession, we should remember that no human pursuit makes any material progress until science, quickened by a stimulating intelligence, has been brought to bear upon it; then indeed, although it may have been slumbering for ages, at the touch of her magic wand it advances with strides which amaze and almost awe the beholder. Is it too much, my friends, to anticipate such a future for our own profession, as the result of united concentrated effort? Let us, I beg of you, discontinue our icy bearing towards each other, and henceforth treat one another with kindness, gentleness, and charitableness. Do not discourage us, do not frown upon us; remember that an unkind word of criticism may have the same effect upon us as a cold blast, which, passing over some tender shoot, shrivels it up, and checks the flow of the sap, which was rising to produce abundance of flowers and fruit.

I will now come more closely to the subject immediately before us. I wish to speak as a practical man to practical men ; and I would ask you individually this question—would it not be much better and more agreeable for the members of our profession, especially those who are in large towns, to shake off old reserve and exclusiveness, to cultivate a more cordial feeling, and to feel that their separate individual connections and businesses were more secure ; that there was less to deplore in some of the members of the profession, less of that secret, underhand influence working, which in past times has been such a disgrace to our profession, and which even now occasionally exhibits itself in its despicable character and hideous deformity ? If you answer, “Most certainly it would be far preferable,” then I say to you, one and all, join this Association, and see that it is conducted in a proper spirit. If you tell me that the same spirit will still prevail and operate to the same extent, even when the Association is in full force, I deny the possibility of its doing so ; the mind is imperceptibly led to establish sympathies which will effectually prevent it ; if there is only one case of unprofessional conduct where there are ten now (which is what we anticipate), surely that will be a great encouragement. Let us banish the thought at once and for ever ; let us dissipate the delusion that there is no honour in the members of the profession ; but if, unhappily, there should be a few nondescripts who are still disposed to act unworthily, let us prove to them by our example that “honesty is the best policy ;” let us force them by very shame to follow in our wake. And here allow me seriously to warn the young practitioner, aye, and the old practitioner too, of the lasting injury he sustains by loss of confidence. The knowledge soon spreads secretly amongst his fellow-practitioners that “he is not to be trusted ;” “will do you a dirty action,” and not one of your fellow-vets. dare to leave his practice in your care in his absence. This character, once established, has its blasting influence upon you throughout life ; no man can succeed with such a drawback, for none can speak respectfully of him ; they all secretly dislike him, and the public see it, and are influenced by the impression. But the young practitioner, and his senior also, who is ever careful to act with strict integrity and honour, and who is true to his fellow-practitioners, soon reaps his reward ; they one and all respect and esteem him ; they feel a confidence in him, and experience a pleasure in entrusting him with the care of their practice ; they will any of them do him a good turn ; the public see it, and are not slow in appreciating it, and his success in life is rendered certain. If we will only act faithfully to each other, we have the whole thing in our own hands ; there will be no more breaches of professional etiquette ; we shall then have a confidence in each other, a right spirit will prevail, and peace of mind will be enjoyed ; our noble profession will then be a pleasure to follow ; it will be elevated to a higher sphere, and estimated in society with more respect, and hence it must occupy that status to which it legitimately belongs. Let our watchword be “onward and upward,”

and there can be no doubt but this our Association will soon be a united, faithful, respected, and happy body; then we shall feel a pleasure and a deep interest in being in each other's society; we shall be able to speak our minds freely, without reserve, for each other's good; and not only will our connection and practice be legitimately respected and safe, but our characters and our honour will be safe in the keeping of our fellow-veterinary-surgeons. Thus it must follow that this Association will become in reality everything that its most ardent advocates can reasonably expect.

Practically, we know it will ever happen in the common order of things that a customer will leave one practitioner and go to another, and *vice versá*, owing to some whim or caprice of his own, to some real or fancied superiority of one professional man over another, or to any one of a thousand trifling circumstances; and he has a perfect right to do so without asking leave of any one. So long as no illegitimate influence has been exercised, none but a very narrow mind indeed would entertain ill-feeling towards the practitioner who obtains the custom, neither would an educated and liberal-minded man feel it to be a severe trial of friendship, but would look upon it as an event which must be expected, and which will occur, however clever he may be, and however attentive to his business. If, however, a customer of mine has one of his most valuable horses suddenly attacked with some serious illness, and I cannot be found, or if found I can be of no service to him through being in a state of intoxication, and this having unfortunately happened before; or if I am found and am sober, but my knowledge of my business is such as to lead me to adopt a method of treatment which is entirely unsuccessful, and this result has unfortunately happened repeatedly before, in such a case it is not to be wondered at, nor is the employer to be blamed if he determines to try another surgeon; and I have no right to complain, or to take umbrage if you, my neighbouring practitioner, get the customer and happen to keep him—"this is legitimate." If, on the contrary, I am always on duty, always sober, and I adopt a plan of treatment which is attended with as great a measure of success as any other practitioner, and with which my employer is entirely satisfied, and in this state of things some other practitioner obtrudes himself unasked, unsought, and repeatedly solicits the business, offering to do it at 10, 20, or 50 per cent. below the price I am doing it for, and endeavours to raise himself by trampling upon my fair name, this is what I characterise as *mean, dastardly, unprofessional conduct*, richly meriting to be visited by the severest censure this Association can inflict. Let such a one, I say, be "anathema maranatha," for we may be sure that the man so acting is either a low-bred, unprincipled, necessitous fellow, or else he is fully conscious of his own inferiority of ability, and offers the article he has to dispose of at his own low estimate of it, as an inducement for the employer to make a trial of a cheap thing; but long experience has taught me this lesson, that such bargains are nearly always soon regretted, and never satisfactory; they sooner

or later bring their own retribution; it is unrighteous and discreditable to both parties, and no man of an honorable mind could stoop to do business in such a mean, disreputable manner. Depend upon it, it is suicidal to our professional interests and honour; you are doing, so far as this act of yours goes, a gross injustice to your fellow-man, and you are branding your own name with infamy; you are trying to bring down your own profession to penury and ruin; you must incur disrespect while living, and be despised when dead. Is there any one within hearing of my voice, or who may read these words hereafter, ready to answer "It matters but little whether we possess the respect of our fellow-veterinary-surgeons or not so long as we get our turn served, and it is a matter of sheer indifference to us whether our memories are respected or disrespected when we are in our graves"? To this despicable creed I can offer no argument—it can only be met by silence; but to the individual entertaining such views, I can only say he is utterly beneath the contempt of every man possessed of a well-constituted mind. There is no hope for such a one; he may be safely left to himself and to his own reflections (and this is the course I should recommend). By his fellow-practioners he is sure to be stigmatised as one alike devoid of honour and utterly unworthy of sympathy.

I trust that in your Association, as well as in our own at Manchester, there will never be found one single member to tarnish its fair name, but that each will flourish as the green bay-tree, and much good be the necessary result. Let us hope that these institutions will become what their warmest advocates most ardently desire them to be, viz., mutual improvement societies in every sense of the word, and that the interchange of ideas which will take place at the meetings will be fruitful of much good, as thereby we shall be taught to respect ourselves, respect one another, and to love our common profession; and when life's toils are over, and the things of earth are fast fading from our vision, we shall be cheered by the consciousness that no act of ours has tended to tarnish the fair fame or honour of our profession; but that, on the contrary, we have on all occasions endeavoured to do our duty.

A unanimous vote of thanks was, on the motion of Mr. Friend, awarded to Mr. Greaves for his excellent address; after which, Mr. Simpson, jun., read a carefully prepared paper on "Colic and Enteritis in the Horse," which was warmly applauded, and followed by an animated, interesting, and instructive discussion.

After a vote of thanks to the essayist for his able paper, and to the President for his services in the chair, the meeting terminated. Notice was given that Mr. Brydon would read a paper at the next meeting on "Laminitis."

(Signed) GEORGE MORGAN,
Hon. Sec.

OBITUARY.

DIED, at Weston Hill, Norwood, October 31st, E. N. Gabriel, Esq., F.R.C.S. and V.S., late Secretary of the Royal College of Veterinary Surgeons, aged 64 years. His diploma bears date July 3rd, 1822.

Perhaps few passing from among us will awaken more regret. Yet, it may be, the event was not altogether unexpected, as Mr. Gabriel's health had been long impaired. He became early connected with the corporate body, taking an active part in associating with those who saw, and rightly saw, that the obtainment of the Charter would prove the means of raising the profession in the estimation of the public, while at the same time it would promote a feeling of friendliness and amity among the members of a body long too much estranged from each other.

On the retirement of Mr. T. W. Mayer from the office of Honorary Secretary to the Council, he undertook the duties and responsibilities thereof, performing them much to the satisfaction of the Board, and receiving from time to time its hearty acknowledgments and thanks; and, while as yet the funds of the institution were low, he received no other remuneration for his services, which were not light nor unimportant.

He was active and energetic in mind, gentlemanly in his demeanour, and ever maintained his position in society, and was respected most by those who knew him best. He is gone, and we, too, must shortly follow.

"All will soon be over. Life's fitful fever
Will soon wear out this garb of brittle clay."

Death, termed the King of Terrors, should not, if rightly viewed, possess any cause for dread. It is a name given to a change that is inevitable, although the nature of it we do not understand. It ends nothing, and is not, cannot be, the final state of man, but in reality is the beginning of his true existence. It is the passing of the narrow sea that divides time from eternity, yet timorous mortals start and shrink to do so, few being courageous enough to essay this without some apprehension as to the future. Here it is that Faith steps in, with a steady gaze looks upwards, and, resting firmly on the promises, is turned to sight, and "Hope in full fruition dies."

We have also to record the death of Mr. George Smith, Coxpol, Ferry Hill, Durham. His diploma bears date April 30th, 1862.

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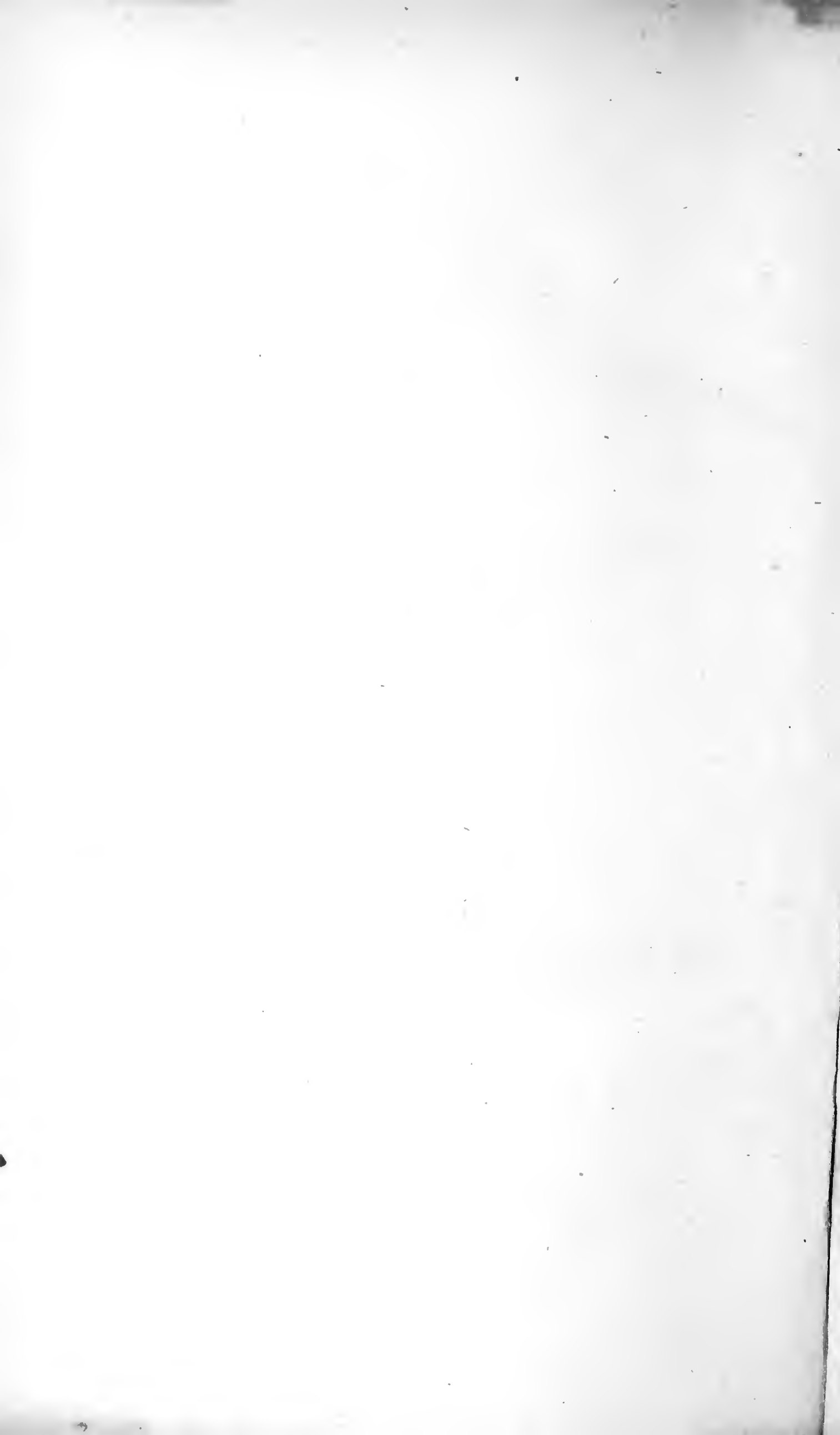
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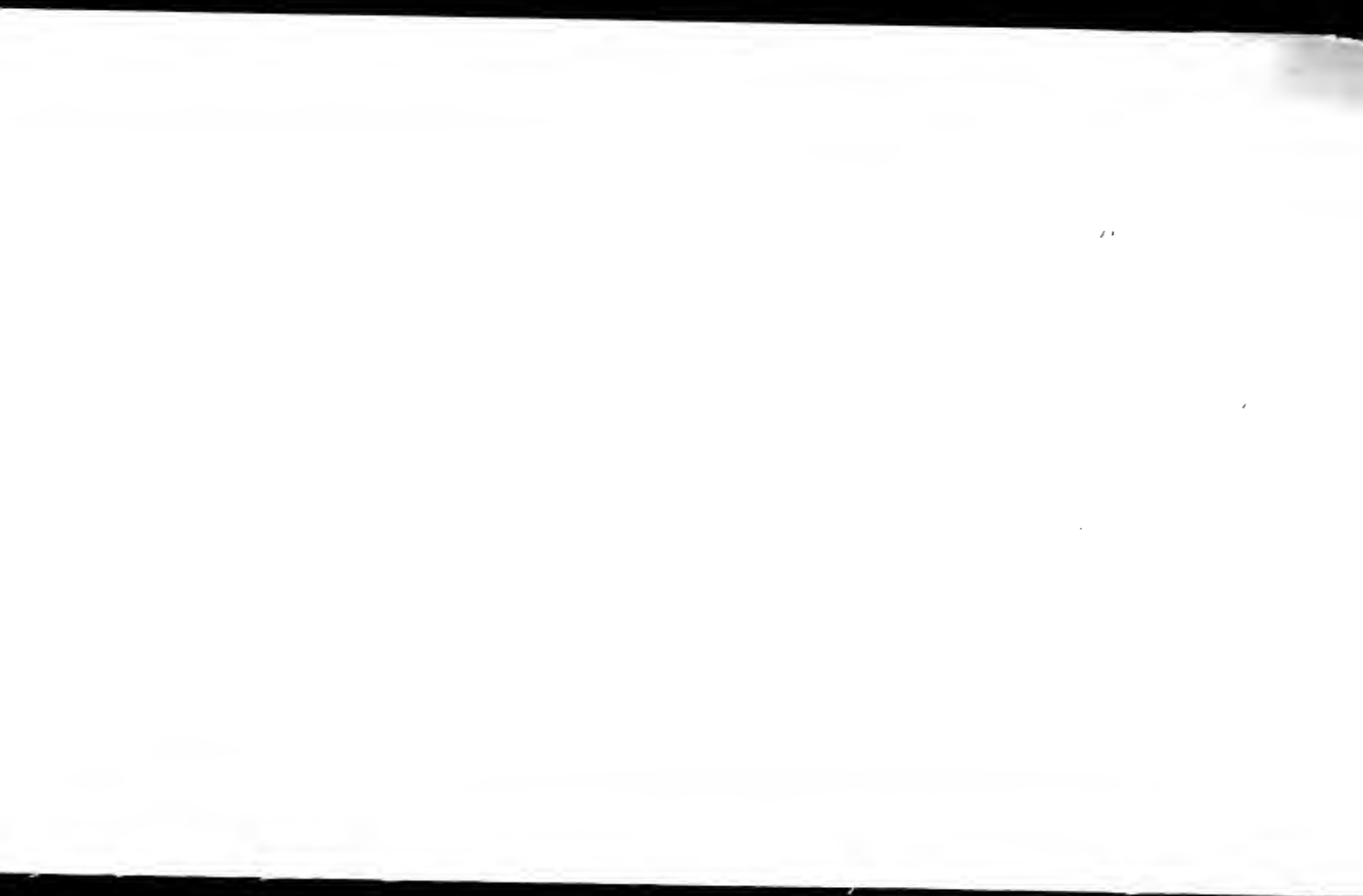
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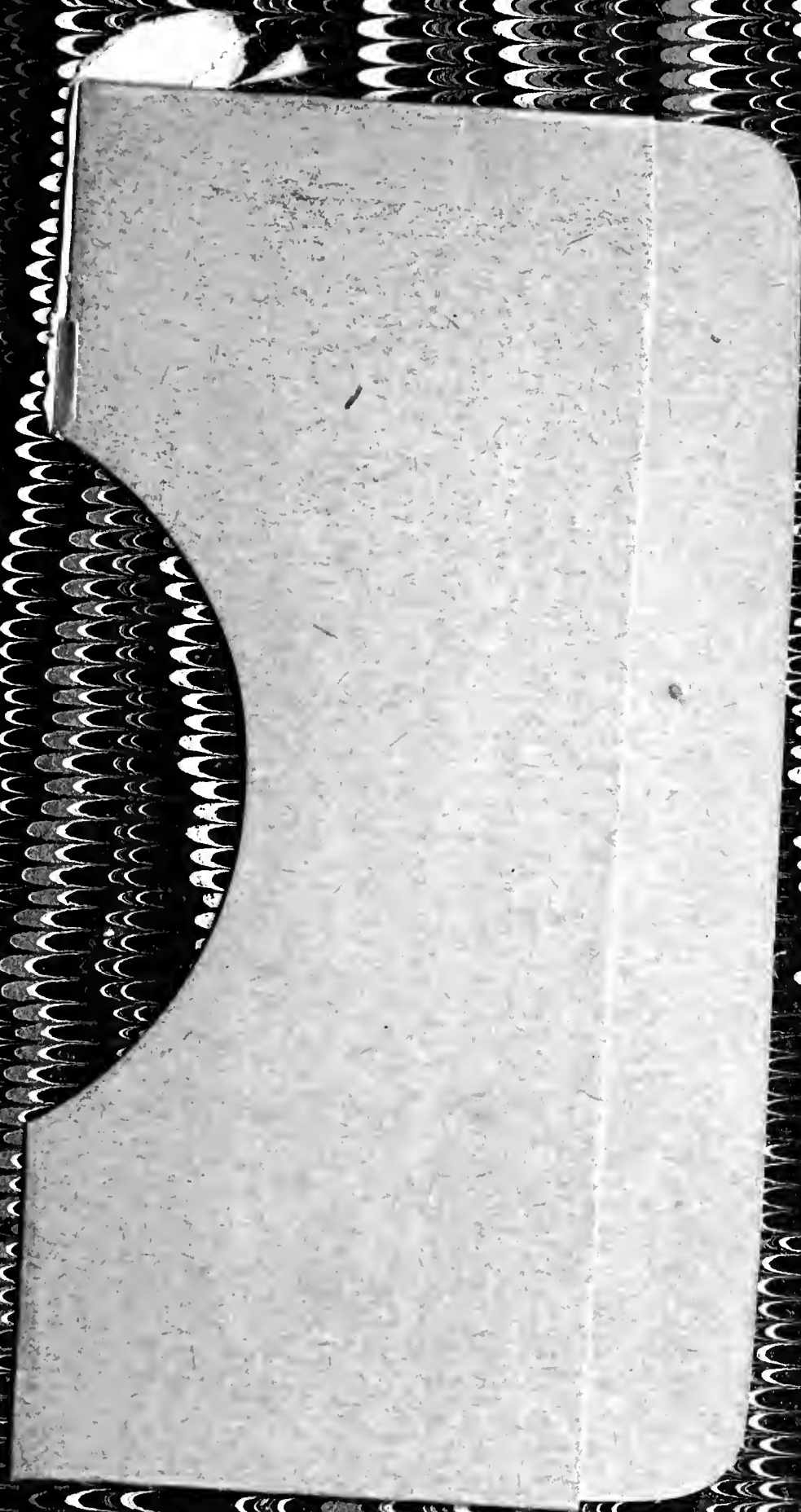
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