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EDITED BY

PROFESSORS MORTON AND SIMONDS.

Ars Veterinaria post medicinam secunda est.—*Vegetius.*

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To the Editor of 'The Veterinarian.'

"Gone is another year;
And on the brow severe
Of chill December the funereal yew,
Holly, and laurustine,
And ivy, whose sad vine
Loves the lorn ruin, wreathe a green adieu
To the sweet hours of Autumn, and the play
Of jocund feeling passed, like leaves, to swift decay."

Sir,—The close of the year 1854, and the completion of another volume of your Journal, present a suitable occasion for offering a few remarks to your readers, and taking a slight glance at our veterinary literature, of which I believe you are the only periodical caterer for the wants of the profession, many as they are. To you, therefore, we are solely indebted for a medium of communication which, if rightly used, might become of inestimable value, by affording means for the free discussion of opinions and modes of practice, and of recording the various discoveries and improvements which, from time to time, result from the employment of so much talent as is now to be found engaged in the noble art of preventing disease in, and administering relief to, the various domestic animals intrusted to the care of man. That this great desideratum has not been more freely taken advantage of is a matter of surprise and regret to all who are capable of forming a just opinion of the incalculable good that would have followed the employment of a means so well adapted to improve the practice of our art; while, at the same time, it could not have failed, in some degree, to raise the qualified practitioner above the ignorance and consequent incapacity by which he was so often surrounded, and with which his claim to merit was frequently confounded. But while we lament with unfeigned sorrow the slow progress that has been made, we yet rejoice that we can, by comparing the past with

the present, still give reason for joy and hope; for who among us capable of looking back for a period of thirty or more years, but must remember with shame and disgust the mode in which young men were sent forth into the world certified as "fit to practice the veterinary art in all its branches;" many of them manufactured out of the *really raw* material, without the least pretension to even a common education, to not a few of whom their own *written* names were almost mysteries, and whose orthography and penmanship would have disgraced the lowest pupil in a parish school of the present day; and yet these men, and such as these, having paid the customary fees and complied with a few other, to them useless, requirements—such as attending lectures which they were utterly unable to comprehend—were said to be qualified to be intrusted with the lives of millions of our domesticated animals, amounting in value to an almost incredible sum. But, thanks to the energies, the untiring energies, of a few noble minds—some of whom, alas! have not been permitted to gain more than a distant and imperfect view of the accomplishment of their dearest wishes—these days are gone, never to return; for we have now at the head of affairs, gentlemen who are not only sensible of the value of general knowledge, but who are careful to require, by a somewhat strict examination of candidates applying for veterinary diplomas, a certain amount of scientific acquirement as a guarantee of their capability of fulfilling their onerous duties, and of their fitness to assist in the regeneration of the profession into which they are about to enter. The advancement of the profession, then, is secured; for these men, (our present teachers,) aided by the press in giving expression to their opinions and publicity to their proceedings, would be as incapable of permitting anything like a retrogressive movement being made, as they would be of inculcating a belief in witchcraft or promulgating the now exploded doctrine of astro-theology. No reasonable doubt, therefore, need be entertained of the future high standing of the veterinary surgeon; but a long time must, I fear, yet elapse before a complete purification of the professional body can be effected; for as "ill weeds grow apace," so they generally resist for a long time all the means employed for their eradication.

Among the Correspondents of the past year, it is pleasing to notice the reappearance of some names that for a brief period have not graced your pages: it were to be wished that they would do themselves and the Journal more frequent honour, and enhance the value of their contributions by an entire absence of controversial personalities, and a more li-

beral employment of that language which, while it is calculated to support their own views or opinions, may yet do so without offending an opponent's self-respect, or endeavouring to lessen him in the estimation of others. Fair and just criticism is rather to be encouraged than otherwise, for by the collision of opinion truth is to be elicited; but truth has a double value when conveyed to the mind in terms of courtesy, than when attempted to be thrust upon us in harsh terms, or accompanied by wide and unmerited abuse.

It would afford me much pleasure could I persuade some of the younger portion of your readers who have not yet contributed to the pages of "*The Veterinarian*" to do so without further delay, certain as I am that by throwing their mite of knowledge into the general stock they would obtain a *quid pro quo* in the esteem of their brethren, and be, at the same time, greatly benefitted by the occasional practice of recording their cases and opinions, and by the efforts of the mind necessary to enable them to do so with facility; a result that would assuredly be speedily and almost imperceptibly attained.

Among the publications of the past year it is also pleasing to notice the re-appearance of some of our most useful works, with several valuable additions to our former stock: an undoubted proof of steady progress, the advance of a science being better estimated by occasional reference to its literature than by any other means.

Your Obituary of the past year is very meagre; yet Time has, doubtless, wrought his usual changes, and the inexorable tyrant, Death, claimed his customary tribute, leaving sad traces of his melancholy visits in the hearts and homes of some of our contemporaries:

> "For what is Life?—an hour-glass on the run,
> A mist retreating from the morning sun,
> A busy, bustling, still-repeated dream,—
> Its length?—a minute's pause, or moment's thought;
> And Happiness?—a bubble on the stream,
> That in the act of seizing shrinks to nought."

Such, indeed, is humanity; and it will be well for us to reflect that we, too, may be soon called hence, and numbered among those who were; and happy will it be for us if we are supported by the consciousness of having endeavoured to leave the world, in some small degree, better than we found it.

> "Yet a few days and thee
> The all-beholding sun shall see no more
> In all his course; nor yet in the cold ground
> Where thy pale form was laid with many tears,

Nor in the embrace of ocean, shall exist
Thy image. Earth that nourish'd thee, shall claim
Thy growth, to be resolv'd to earth again:
And last each human trace, surrendering up
Thine individual being, shalt thou go
To mix for ever with the elements,
To be a burthen to th' insensible rock
And to the sluggish clod, which the rude swain
Turns with his share and treads upon.

* * * *

And what if thou withdraw
Unheeded by the living, and no friend
Take note of thy departure? All that breathe
Will share thy destiny. The gay will laugh
When thou art gone, the solemn brood of care
Plod on, and each one, as before, will share
His fav'rite phantom; yet all these shall leave
Their mirth and their employments, and shall come
And make their bed with thee."

Solemn reflections these, and well calculated to induce serious thoughts, and to stimulate us to be up and doing while it is "*to-day.*"

In conclusion, permit me, Mr. Editor, to wish for yourself, your contributors and readers, health, happiness, and a liberal share of the good things of the season.

I am, sir,
Yours, &c.,

Dec. 26, 1854.

PLEURISY.

FORMATION OF FLUID IN THE PLEURAL CAVITIES; TAPPING; AND DEATH.

By Mr. Barlow, Veterinary College, Edinburgh.

Oct. 16th. 1854.—A bay mare (belonging to the Royal Artillery) six years old, standing 15h. 3in., of strong make, had been in the Leith Fort stables for several weeks prior to this date, and always appeared healthy. This morning she was reported unwell. Being from town at the time, Mr. Chambers, V. S., in company with several students, attended on my account. The mare had been freely bled by the farrier before their arrival. The case proved to be one of acute pleurisy, attended as such cases sometimes are, in the outset, by fugitive abdominal pain. She took medicine, which acted gently on the bowels, had her sides blistered,

and was subsequently treated with nitrate of potass and antimonials. The urgent symptoms subsided greatly in four or five days, and she seemed progressing favorably until the 22d, when there was a sudden relapse.

24th.—I saw her for the first time. The farrier thinks her better than yesterday. It is, however, quite evident, from general appearances, that she is going on unfavorably.

The pulse is 75, very defective in volume, also slightly irregular. The respirations are 38, and highly abdominal in character; inspirations no longer than expirations. The ears are cold; mouth clammy, but not hot; the legs are *all warm*. The bowels are sufficiently open, and urination is tolerably copious. Appetite capricious.

On *percussion* there is perfect dulness along the lower third of each sterno-costal region; this dulness gradually diminishes about half way up the sides. *Auscultation* detects no respiratory murmur where the above noted dulness is complete; the respiratory murmur ceases abruptly on both sides along a horizontal line fourteen inches above the sternum; a rubbing sound is heard about four inches higher than this line on the right side; still higher and extending to the heads of the ribs there is increased, but in other respects apparently healthy respiratory murmur. No rubbing sound can be detected on the left side.

The farrier has been giving sedatives until this morning. As fluid, however, is collecting in the chest, and as there is no fever to forbid their administration, mineral and vegetable tonics combined with diuretics are ordered. Good food to be offered.

30th.—Although I have seen her regularly since the above date, a record of daily appearances would be superfluous. The tonic and diuretic treatment has been continued till this morning, but the symptoms have gradually become worse. In addition to other and minor signs, the following indications of "water in the chest" are well marked.

The respirations are 46, and so highly abdominal as to cause great lifting of the loins during inspiration which is shorter than expiration. The head is greatly extended; the alæ nasi are widely dilated during the entrance of air, and suddenly collapse afterwards, thus causing that peculiar *flapping* action, which, taken in connection with great lifting of the loins, I have generally remarked as being distinctive symptoms of this condition. The pulse is 84, weak in tone, and irregular; jugular venous regurgitation is also very obvious. The eyes are clear and prominent, the features "*pinched*," and the facial veins stand out very distinctly.

The schneiderian membrane is of a dull almost leaden colour, and there is a thin mucous discharge from the nose.

Percussion detects perfect dulness, extending on the right side about half way from the sternum to the vertebræ. On the left side the dulness is less extensive. *Auscultation* detects an absence of respiratory murmur below a horizontal line, eighteen inches above the sternum, and a rubbing sound is audible till within a few inches of the vertebral column. A slight friction sound can be heard on the left side, extending only about two inches above the fluid.

There is a slight watery swelling below the brisket, and extending along the abdomen. The legs are less warm than formerly, but they are not cold, nor anasarcous in the slightest degree. The only thing which promises relief is to draw away the fluid; operation is postponed till to-morrow, in order that the students may be present.

31st.—Ten, A.M.—No material change in any way, and certainly no improvement. I introduced the trocar and canula between the upper ends of the seventh and eighth costal cartilages on the right side. A full stream of fluid immediately followed the withdrawal of the trocar, and continued to flow until three gallons were abstracted. No more could be obtained. The fluid was of a dull pink colour in consequence of being tinged with blood: when dried between the fingers, its tenacity was slight, but a considerable amount of albumen was precipitated by acids and heat. After standing twenty-four hours it formed a very slight jelly, and the bottom of the containing vessel, for about two inches deep, was covered with a dirty brown mass, consisting of blood globules and plastic corpuscles. The upper surface of the clot was almost colourless and covered with thin serum.

The patient bore the operation well, and took both food and drink soon afterwards. Ordered iodine ʒj, potass. hydriod. ʒj, ginger, ʒij., morning and evening, and carbonate of ammonia, ʒiv at mid-day.

Five, P.M.—Several students who have visited her at my request, report that she is easier than before the operation. At 8 p.m. the farrier states that she is greatly relieved.

Nov. 1st.—Her general appearance is improved, and she has fed during the night. The pulse is actually down to 62, and more full in volume. Respirations 37, and less abdominal in character. Complete dulness on auscultation extends only ten inches from the sternum on both sides; there is however a strong rubbing sound along the chest for about six or seven inches higher on the right side. The legs are colder than before. Mouth less clammy.

2d.—Pulse 62, and rather hard. Respirations, however, down to 32, and inspiration is now distinctly longer than expiration. Perfect dulness extends fifteen inches high on both sides. She eats moderately well, and is not unnaturally thirsty. Medicine continued.

3d.—Dulness (on auscultation) has extended to fifteen inches on the right side, and within a little of same height on the left. The pulse is 65; respirations 36. Emaciation becomes more obvious.

Tapping was again repeated on the right side, between the seventh and eighth costal cartilages, and four inches outside the sternum. About nine quarts (imperial) of fluid came easily away. The left side was also pierced, but only about four ounces of liquid were obtained. Although the amount of fluid abstracted was comparatively small, yet the respiratory murmur was heard five inches lower down than before the operation. On standing twenty-four hours, the fluid coagulated more firmly than after the first operation; there was also less sediment, and but very little tinge of blood.

4th.—Pulse 66; respiration 32. There is no visible improvement in her general appearance. The fluid has again slightly increased: treatment continued.

5th and 6th.—No material change in the symptoms, but emaciation becomes more and more evident.

7th.—Pulse 70; respiration, however, still 32. Dulness has become as extensive as before the last operation. Ordered three quarts of strong ale daily: all medicine discontinued.

9th. Pulse 74. Respiration 35. Appetite better than for some days past. The ears and legs are now uniformly cold.

11th. Pulse has reached 80, and is again weak as well as irregular. Respiration 40. Anasarcous swelling increasing at the breast and involving the legs. The patient is decidedly worse in every respect. I abstracted ten quarts more fluid from the right side; none could be obtained from the left. She died during the night.

She was dissected on the 13th. The right costal pleura was inflamed from the sternum to the vertebral column. Its lower third was covered with lymph half an inch thick in many places, and a pailful of loose lymph was lying in the chest. There were no adhesions between the right pulmonary and pleural surfaces. About two quarts of actual fluid were found in this side, and a pint in the left. There was a very free communication between the right and left pleural sacs, as the inferior mediastinum was extensively areolated. The left side presented appearances of the same nature as the

right, but to a much less extent; for the costal pleurisy extended only half way from the sternum towards the vertebræ. The pleural surfaces of both lungs were inflamed, but not severely; the right lung was covered with a film of lymph throughout. The dorsal surface of the left lung was perfectly healthy and smooth. The pulmonary structure was compressed and firm, but healthy in texture. The heart was soft, but not remarkably so; its size was greater than natural; weight normal. The abdominal viscera were healthy, except the liver; this organ presented that engorged or vascular and softened state which is almost always present when any prolonged thoracic disease prevents a natural transit of blood through the heart.

This mare lived twenty-six days after being reported unwell. Death occurs at an earlier period in most cases of fatal pleuritis, for we not unfrequently find that this disease, by ending in copious exudation, will destroy life in six, seven, or eight days. As is well known, we sometimes observe a sudden apparent improvement about the fourth or fifth day, or even earlier. Respiration seems easier, the fever diminishes, the legs become warm, the appetite improves, and the patient will even lie down; yet, unless the pulse become slower and softer, all other ameliorations are but fallacious. An increasingly quick pulse then, although the only unfavorable symptom, too often indicates the accumulation of fluid in the pleural sacs. One primary effect of slight watery exudation is to separate the previously contiguous sore and inflamed pulmonary and costal pleuræ; pain is thus mitigated, and greater temporary freedom in breathing is insured; this induces a more perfect aeration of blood in the lungs, and tends to equalize animal heat, as is shown by an increasing warmth of the extremities. As the fluid accumulates in greater quantity, the lungs undergo compression, and we have another train of symptoms. I believe that the presence of a small quantity of fluid, say of a gallon or so, can be most satisfactorily made out by auscultation. When the exudation increases to three, four, and five gallons, there are certain distinctive symptoms which are pretty safely relied upon by those not skilled in stethoscopic practice. The symptoms to which I allude are such as the following—great flapping action of the alæ nasi; extended nose, with dusky schneiderian membrane; transparent eye, pinched features, and prominent facial veins; quick respiration of a highly abdominal character, causing great lifting of the loins; inspirations shallow, and occupying even less time than expirations; a prominent muscular ridge extending along the line formed by the false costal cartilages; working or labouring action of the

ribs, which are plainly seen to move under the skin. I could rarely, if ever, be certain of intercostal bulging being present as we see it in man under similar circumstances, but have generally observed that the intercostal spaces seem collapsed like other portions of the muscular system. Anasarcous swellings are mostly present in coarsely bred horses, but they are not always seen in well bred animals. The legs are frequently cold, but not so invariably. In tapping the chest I have mostly found that fluid has passed from the opposite pleural sac into the one which was opened, so that after obtaining a large quantity in a free stream from one side, (the right for instance), I could rarely procure more than a few ounces by piercing the other immediately after. This of course is explained by the percolation of fluid through the inferior mediastinum which does not in all cases become thickened like other portions of the pleural membrane; it possesses in fact very few vessels, and is areolar in health.

In the case first reported, the quantity of fluid taken away at three times was 31 quarts. This is not a large amount; we have often removed 20 and 25 quarts at one time. I recollect a mare walking a distance of two miles to the College; she arrived at the dispensary hour one Sunday morning; water in large quantity was detected in the chest. The owner consented to an operation, and I removed 40 quarts at once from the right side; only a couple of pints came from the left side. The mare was so much relieved that the owner took her home next day, and she died soon after. We now and then meet with recoveries after tapping; as a general rule, however, the operation merely prolongs life for a temporary period.

HYPERTROPHY OF THE HEART AND ANEURISM OF THE AORTA.

By Harry Daws, M.R.C.V.S.

A black charger, about ten years old, the property of Capt. Hare of the First Life Guards, was sent to the forge in the Regent's Park barracks to be shod on the 9th Dec. That operation was completed in the usual manner, and the horse returned to his stables with a man on his back, kicking up his heels at every step: his corn was in his manger which he commenced eating with avidity, but suddenly the groom

noticed him to reel and attempt to rear up, but the rack chain prevented him. The animal was released and brought to the door of the stable, when he immediately fell and died without a struggle. My attention was immediately directed to him, being then on the spot, doing duty for our late lamented editor, "Peace to his manes." On making a post-mortem examination soon after, I found the buccal, schneiderian, and conjunctival membranes of a lived hue, the peritoneal membrane and intestines were similar in appearance; in fact, venous congestion had taken place all over the body: the liver and kidneys were much darker coloured than usual. Upon removing the sternum, the cause of the sudden death was immediately perceptible. The heart was three times its natural size, the weight of it was not ascertained, but it was supposed to be about twenty pounds. The pericardium contained nearly a gallon of colourless serum. The lungs were not in the least degree affected by chronic or any other disease.

Upon removing the heart an extensive aneurism of the thoracic portion of the posterior aorta was discovered; and the right side of the organ was found filled with grumous blood, distended almost to bursting; the parietes of the ventricle and auricle being no thicker in places than calico. The substance of the heart itself presented the same appearance as the other viscera.

It may be as well to observe, that the animal was of an excitable temperament.

CASE OF "LOIN FALLEN."

By W. A. Cartwright, M.R.C.V.S., Whitchurch, Salop.

A cow eight years old, the property of A. Worthington, Esq. of the Mount, in this town, calved on Tuesday morning the 25th January, 1853. At night the placenta was expelled. She is in good condition, and has a very large udder, and calved without assistance early in the morning, before the family got up. On Wednesday morning she was thought not to be very well, being weak and tottering.

About eleven A.M. I saw her. She is standing up, and there are slight muscular tremors. Pulse about its natural number, but feeble. Her udder is large, and she gave this morning about two quarts of milk more than the calf required. She is weak and evidently totters in her hind parts.

As she stood up to the wall and close to the door, I thought it better to remove her into another stall, more in the middle of the cowhouse. In doing so, she manifested great difficulty in walking there, and had a narrow escape of falling head foremost into the "boosey." She has in short, every symptom of approaching "loin fallen."

℞ Sodæ Sulphatis, ʒxij;
Ol. Crotoni, gtt. xl;
Aloës Capen., ʒij;
Pulv. Capsici, ʒij;
Pulv. Zingiber., ʒss.

One half to be given in some gruel immediately, the remainder in an hour's time. Mustard paste to be rubbed over the course of the spine. In the afternoon a strong liquid blister was applied to the part.

Three P.M.—The animal is down, and moans a little. The pulse is about natural, but she has not dunged, and her paunch and abdomen seem loaded with food.

Eight P.M.—She lies with her head to her side, but she is sensible and can move her head straight out, but it soon falls to her side again.

℞ Sodæ Sulph., ʒiv;
Aloës Barb., ʒj;
Ol. Croton., gtt. xx;
Pulv. Capsici, ʒij;
Pulv. Zingib. et Gentian., āā ʒj.

The food was malt well macerated, which she "gulped" down.

27th.—Nine, A.M.—She is still down, and has not been up since she went down at first. Is sensible, and can move her head a little about, but it is generally on her side. Pulse and respiration natural; skin warm; bowels not acted. Gave Piper. Jam. ʒi., (that has been macerated all night), Ol. Croton. ʒss., Ol. Ricini, ʒvi. Poured hot water along the spine out of a tea kettle. She was evidently sensible of the application as it gave her great pain and made her turn over on the other side. Rub some brandy on her loins.

Five, P.M.—The symptoms are more favorable, or, at any rate, they are not worse. Has not been up yet. On passing my hand up the rectum I withdrew a quantity of hardened fæces. Although I do not think it is of much use, generally speaking, to back-rake or clyster cows, yet I think in this disease it is proper to remove any hard fæces, as they may press on the nerves supplying the hinder extremities. Sits with her head out before her. Does not moan. Has uri-

nated. On raising her she strained to force the dung out, which I consider a favorable symptom.

Several quarts of milk have been drawn from her during the day.

Nine, P.M.—On going to her to give her some more medicine the man found her up.

28th.—Nine, P.M.—On my visiting her I found her up. Udder soft, and the calf had sucked freely, by which the udder was much reduced in size. She looks more lively, and carries her head now straight out before her. Has voided dung once, which is softer, but still mixed with some that is hard. Give some castor oil with Jamaica pepper every hour or two, and allow nothing but gruel and water. Legs to be well rubbed, as she seems weak and shuffling behind. Applied some more brandy and mustard on her, loins.

From this time she got better and was soon all right again, nor has she been ill since.

COW CALVING, WITH BREECH PRESENTATION.

By the Same.

On the 1st of March, 1852, I was called in by Mr. Tapley of Marbury, to an aged cow that could not calve. Several persons had been trying to extract the calf for some hours, but without success. On my arrival I found her down, and the labour pains violent. The hind parts only of the calf were presented, and forced out five or six inches. The os uteri was greatly distended. Whilst preparing to assist her, she got up and changed her position by lying on the other side, and she then began to strain and bear violently down. I laid hold of the hinder parts of the calf and pulled slightly, when it came away, apparently without any great difficulty; the hind parts being presented, and the hind legs under the body. The cow, and calf (which was full grown) did well; and within twenty-four hours the parts had contracted to their former state.

MAL-PRACTICE IN THE EXTRACTION OF A CALF.

By the Same.

The following case is by no means a rare one in my practice; and often I am called to cases where much valuable time has been lost by "knowing ones" interfering; for had any one acquainted with his profession been called in at an early period in this instance, soon after the escape of the water, and before violent straining had come on, there is not a shadow of a doubt but that this cow would have been early delivered and her life saved.

On the 25th of Feb. 1854, I was called up at night to see a cow "that could not calve," the property of Mr. Reddrop, of Hanley Park. A man who pretended to some knowledge in these matters, had been with the animal the greater part of the day, but he could not remove the calf, and he stated his belief that it was impossible for any one else to do so. When I arrived I found my patient lying all at length on the ground, and she did not even lift her head once from it whilst I was with her. I ordered her some brandy to rouse the vital powers, and on examination I perceived that one of the fore legs had ignorantly been cut off at the shoulder joint. The fore legs had been first presented with the head far back under the side. In ten minutes, by careful manipulation I got the calf away. Whilst removing it, the cow had only very slight labour pains, and she died in an hour or so afterwards.

ON THE BREEDING OF HYBRIDS.

By Thomas Gregory, M.R.C.V.S.

Sir,—A bitch, the produce of a cross between a *sheep-dog* and a *vixen fox*, belonging to Mr. Maddox of Bransbridge, five miles from this town, was sent last spring or summer to London for sale, I believe at Tattersall's. She was also advertised in *Bell's Life* for this purpose; but not finding a purchaser in town, she was sent to, and remained some time at, Maidstone, and not being sold, was taken home and tied up in her old kennel. For about five or six weeks (I cannot give the exact date), her owner, to his great astonishment, on

going to see her one morning found her suckling six puppies to which she had given birth during the night. By the time of her littering, it is supposed that a terrier dog at Maidstone was the father. The puppies are now weaned, and yesterday, in company with a medical friend, of this town, I saw two of them. They are both of a fox colour. The other four were two black, and two brown. The bitch is in colour brown and tan, with a head and ears like a fox; body dog-like, but more lengthy; the tail is in length and make similar to a dog's, except the under part, which is like the brush of a fox; her bark is more like that of a fox than a dog, and when tied up she weaves or tramps backwards and forwards at the length of her chain like a tame fox: in fact her general appearance, except in colour, resembles more a fox than a dog. She kills rats quickly, and when loose with her owner (who only she will follow, being very timid and shy of strangers), should she for a time elude his vigilance, and there be fowls in her way, "woe betide them." She also buries her food in the ground near her kennel. My object in sending this is, that I have never heard of or met with a similar case, and to ask, Is it a case of a Hybrid breeding? or is the produce between a dog and fox Hybridous or not? Blaine, in his Encyclopædia of Rural Sports, says, p. 447, "that the fox and dog will breed together we believe there are sufficient proofs, though the *fact is yet disputed by some.*" But here is a case of the progeny of dog and fox breeding again. Perhaps, after all, you may know or have heard of a similar case; if so, there is no harm, I hope, in writing you; but such a fact never before having come to my knowledge, I thought I would just drop you a line upon the subject. With best respects, I am, dear sir,

Your obedient servant,

TUNBRIDGE, KENT; *Dec.* 14, 1844.

[Hybrids are not *necessarily* sterile, although generally so. Such cases as the above are therefore not unfrequent. Mules are well known to breed in Spain and other countries. Buffon, also, observes that, in the city of Valencia, a horse and she-mule produced colts on five different occasions, and the same mule subsequently bore another colt by another horse.]

CASE OF INFLAMMATION OF THE LUNGS FOLLOWING LAMINITIS.

SIR,—Deriving, as I do, some pleasure on the first of each month from the perusal of your Journal, perhaps it is a

duty I owe to render what assistance I am able to its support.

I confess, Mr. Editor, that although engaged in one of the largest practices of this county, but few of the many extraordinary cases reported come under my notice; some of which, sir, I should fear, are but the production of fertile imaginations, and like figures in Banquo's glass—

"Come like shadows, so depart."

Be this, however, as it may, they at least serve to excite one's "special wonder," and it is hoped also, afford gratification to their authors.

A case, presenting to me some peculiarities, however, occurred in my practice very recently. The subject was an aged cart-mare employed in the conveyance of coals from a distance of nine miles, which on the day of this attack had been twice accomplished—i. e. she had travelled six and thirty miles. On her return from her second journey she was sent into a river to fetch water, on account of its scarcity in the town; and, the mode of collecting it being slow, she remained in the river for nearly an hour. Nothing beyond the mare being tired was observed that night, nor on the following day: she fed well, rested as usual, and the carter had no reason to suspect her being unwell.

The day after, however, she was found to be lame in one fore leg, to account for which all engaged in the yard were greatly at a loss. It was at this juncture that my attendance was requested. I found the mare with a pulse numbering 44 in the minute; feeding with an evident appetite on oats, bean-meal, bran and chopped hay, and, excepting excessive lameness in *both* fore feet, there was nothing to complain of. To begin with, it was obvious I had a decided case of "Laminitis." The shoes were removed, the soles pared as thin as we dared venture to do it, and owing to the flatness of her feet, the shoes were merely tacked on, and the feet after some hours steeping in hot water, were enveloped in large linseed poultices. All this was done under the superintendence of my assistant, who also, by my direction, gave—

℞ Aloës Barb. sol. ʒvj;
Tinct. Crotoni, ʒss;
Sp. Æth. Nit., ʒiij. Misce fiat haust.

Absence from home on the day following compelled me to leave her still under the watchful eye of my assistant, who reported her to be "doing well," and which I afterwards had an opportunity of confirming. A few days elapsed, and our

patient was rapidly recovering from her lameness, and otherwise her health was apparently as good as we could desire: so far indeed had she advanced towards convalescence that nearly our last visit was considered to have been made. Shortly after this, but before the mare had resumed her work, we were again summoned to attend her. For twenty-four hours only indisposition had shown itself, by the mare being off her feed merely. When our attendance was this second time requested, we found that all lameness in the feet had passed away; the chest was now the seat of disease, and the animal was "holding life on such terms as made it scarcely worth possession." She died that day. In the *post mortem* examination which was made, the lungs were found to be highly inflamed, and the chest contained much water. Metastasis in this case had been both unexpected and rapid in its progress.

I am, Mr. Editor,
Yours obediently,
A Yorkshire V. S.

Dec. 1, 1854.

CASE OF ABSCESS IN THE CEREBRUM OF A HORSE, FOLLOWING AN ATTACK OF INFLUENZA.

By George J. Vincent, M.R.C.V.S, Redgrave.

On October 6, 1854, I was requested to look at a bay riding-horse, the property of Mr. ——, Wortham, Suffolk. The groom stated that he had fed but little for a day or two previously to my seeing him, and he now seemed to swallow with difficulty, and appeared as if choked.

On my arrival I found all the symptoms of influenza to be present. The coat looked dull; the mouth was hot and dry; ears and legs cold; pulse 58 in the minute, and rather weak; respiration undisturbed. There was slight shivering; a yellow viscid discharge from both nostrils, the parotid gland was enlarged and tender, and when pressed upon the animal coughed considerably; the fæces were hard, and passed in small quantities, and the urine was voided only occasionally, and with apparent difficulty.

℞ Aloës Barb., ʒiij;
Pulv. Digit. ʒj;
„ Zingib., ʒij;
Sapo Dur. q. s. Fiat bolus.

This was with some difficulty swallowed. Apply Lin. Tereb. Comp. to the throat, and repeat it at night; and give Pulv. Pot. Nit., ʒiv. in his water, or mixed with a mash; the legs to be bandaged and body well clothed.

7th.—I find that little or no alteration has taken place in the animal's appearance. The bowels, however, have responded to the medicine, showing the small quantity of aloes sufficient to operate in an affection of this kind. Repeat the stimulant to the throat, and give a cough-ball. The legs to be well hand-rubbed, and Pulv. Pot. Nit., ʒiv. to be given night and morning in a bran mash.

10th.—I find my patient improving; the cough is less frequent; the discharge from the nostrils is somewhat increased; throat not so sore, and he drinks freely of water and has eaten his mashes tolerably well. Give a cough-ball night and morning, and repeat the stimulant to throat. Allowed a little walking exercise.

14th.—Patient considerably improved. The soreness of the throat is scarcely discernible upon swallowing a ball; the discharge from the nostrils has decreased, and he coughs but seldom. Ordered the exercise to be increased to a gentle trot.

17th.—Patient still going on well, and the coat looks less staring. Give a tonic ball, night and morning, consisting of—

℞ Ferri Sulph.,
Pulv. Zingib., āā ʒij;
Mass. Comm., q. s. Fiat bolus.

A few oats to be scalded and given with the mash.

19th.—Patient going on satisfactorily. Continue to give the balls as before. The quantity of corn to be increased, and animal exercised daily.

26th.—My patient is now convalescent. Discontinue all treatment.

November 4th.—Early this morning I was again called to attend this horse, and requested to come immediately, he being very ill, and indeed expected to die before I could get there. He was found by the groom, on going into his box, very much excited, and upon his approaching him he reared upon the manger, breaking it down. After this he stood reeling, as if he would fall. On my arrival I found him with his head hanging down nearly to the floor of the stable; he staggered from side to side, but especially forwards, appearing as if he would pitch upon his head. The pulse was 60 in the minute, full and intermitting. With difficulty I succeeded in bleeding him, he being so restless. After the abstraction of

about four quarts of blood, which flowed freely, the bleeding almost immediately stopped. Give Aloës Barb. ʒvj. in a ball, it being useless to attempt to give a draught. Apply a blister to the head, stimulate the spine, and throw up injections of tepid water per rectum. I gave the owner but little hope of the horse's recovery; but being a valuable animal, he wished all attention to be paid to him, and requested me to use every devisable means for his restoration.

I remained with him till about noon, during which period he gradually grew worse. Having several cases of influenza to attend to, I was then obliged to leave him for a few hours.

6 p.m.—My patient is now more violent; pawing with his fore feet and pushing with his head against the wall of the stable with great force. If made to move by pulling him with a halter, he being quite unconscious when spoken to, he soon again gets to some corner of the box and stands with his head resting against the wall, thereby supporting the greater part of the weight of his body. Patches of perspiration bedew the surface of the body. I continued with him till 10 p.m., when I left him for the night.

5th.—On visiting my patient this morning, I found him much more tranquil, and partially restored to consciousness; but the pulse was increased to 90 in the minute. On some water being placed before him, he for the first time since the attack, drank with avidity; a bran mash was then offered, which he immediately began to devour, seizing each mouthful in the same manner as a pig. During the day he ate several mashes in the same way. The owner thinks him decidedly better, but I do not, as the pulse is very indistinct and intermitting. Patches of perspiration still bedew the surface of the body, and the ears and legs are hot. From the effects of the blister, and the forcing of his head against the wall, the head has become very much swollen, and the eyelids so much so, that he is unable to open them. The owner visited the animal frequently during the night, but soon after he left him he fell down, and lay perfectly tranquil till the morning.

6th.—7 a.m. After being with the horse about an hour this morning, he became restless, raising his head and striking it violently against the floor of the stable, and in this state he continued for about six hours. I advised the owner to have him destroyed, but he thought, like many other persons, that as long as there was life there was hope! I remained with him during the day at the owner's request, and left him about six in the evening, feeling persuaded that he

could not survive many hours, stertorous breathing having come on. The animal died about an hour after I had left him.

Post-mortem Appearances.—On opening the cavity of the chest, the lungs, from general sympathy, and the animal's lying down so much, were found quite black. On removing the membranes of the brain, nothing very unusual presented itself till I cut into the substance of the left lobe, when a large quantity of pus made its escape; nearly the whole lobe being one mass of matter. The other lobe was scarcely affected, though it was darker in colour than natural.

I may just mention, that after seeing the horse on the 26th October, I gave orders to have him used occasionally, if wanted, for short journeys. A day or two after this, the owner rode him out, but he seemed very different from what he had been before; to use his own words, "he appeared sluggish, and once or twice seemed as if he would fall." This his owner took little notice of, and thinking it the result of debility from his previous attack of influenza, he ordered him a more liberal allowance of oats. I had intended to let him rest for a month or six weeks longer, although this might not have prevented this termination.

Should this case be thought of any interest to your readers, I have another similar one, as it regards the symptoms, arising from a tumour pressing upon the cerebellum. Although I took no notes at the time, I may be able to collect the substance of it together at some future period.

ON UMBILICAL HERNIA.

By J. Younghusband, V. S., Greystoke.

Dear Sir,—I have neither time nor inclination to write much; but perhaps a short paper on the following subject, particularly at this season, may prove acceptable to your readers.

I beg to remain, your well wisher, &c.

It is upon umbilical hernia I wish to make a few remarks; and chiefly upon the old method of "skewering" for its reducement. It is now a great many years since I first became acquainted with this method, and had a few times performed it; but until I read Mr. Tombs', V.S., account of its success, I must own I did it not without some misgivings.

The operation although simple in itself, is, or may be, attended with unpleasant effects; particularly in animals of riper years; for instance, there may be adhesion of the intestines (in young subjects this is not likely to exist) to the sac. Inflammation and fever may supervene, and prove troublesome attendants; and lastly, though not least, that formidable disease, tetanus, may set in, and at a time too when we are not looking for it, and thus blast our most sanguine hopes of success. For my own part I have been exceedingly successful hitherto, having lost only one patient out of many I have operated upon, from the age of six months to that of three years.

My experience goes to prove that the best period for the operation to be performed, is at the time of weaning, as then there is least constitutional disturbance attending it, and therefore less danger than at any other time; moreover colts then need little or no preparative measures. The two years old were in general prepared for the operation, and were soon convalescent, *i. e.* within from twelve to fourteen days, when they again took their accustomed exercise. The three years old mare did not progress so favorably; being of a nervous temperament. Both inflammation and fever set in, and with a rapidity that nearly bid defiance to our remedial measures; but with care and attention she subsequently got better, and in a short time appeared as if there had been no hernia at all, the place being only detected by a close examination.—After some time the owner called upon me, and expressed his pleasure, and that in a manner I need not describe, at the success of the operation, and moreover made me a most handsome present over and above my accustomed charge.

So far, so good. Being thus led imperceptibly on, under circumstances which induced me to think that there was (as some have stated) little or no danger to be apprehended, from the means adopted, I was, as may be expected nearly unsuspicious of any supervening; but the following case will show how soon our brightest hopes may be blasted.

In the beginning of October, 1854, I was requested to operate upon a stout and apparently healthy nine months old foal, for a *large* umbilical hernia. After keeping her upon a rather low diet for a few days, on the 12th, I performed the operation, only inserting three skewers, instead of five or six as advised, finding in them all I wanted: the operation took but little time and gave the patient as little concern.

I visited her on the 19th, and found a slight engorgement, &c. around the ligature, with small drops of serum issuing from the integument, which felt cold and tense; there was

little or no fever, and to all appearance she was going on favorably.

On the 29th, I paid her another visit, when I found the integument had sloughed away; the swelling was reduced, and all progressing as favorably as circumstances would admit.—Ordered a little exercise, and a more liberal diet, and I left in high spirits, from the operation having succeeded to the utmost extent of my wishes.

Now, mark the sequel! On the 3d of November I was summoned to attend my patient again, which I very soon did, almost dreading the consequence. Upon my arrival and looking at the animal, I at a glance saw we had that direful disease, tetanus, to contend with.—The symptoms, I need not describe, as they are too well known to every member of the profession, and in this case they were too plainly marked, to be mistaken; and in addition, there was considerable engorgement of the extremities, both posterior, and anterior. I may here remark; that while under the effects of the operation, she was kept upon spare diet, which reduced her in flesh, but after a more liberal allowance, she regained her condition rapidly. Could this have anything to do with, or be in any way connected with the tetanic affection? as I afterwards learnt that she had been most carefully attended to, even to excess of food.

From this time, the 3d, until the 13th, I tried every curative means I could devise, or could glean from instructions, but all proved unavailing. She gradually got worse, the spasms became more severe, and on the 13th inst. she paid the debt of nature, which all animated beings owe. Now, as Mr. Morton remarks, "the above may appear a thrice told tale, varying, but not improving," "still at times the memory wants refreshing, and where doubts exist, reiteration may be allowed."

The cases above described may be scarcely worth communicating, but through a sincere desire for the welfare of the Veterinarian, I take the trouble of transcribing them as a small return for the kindness always shown to me.

TUMOURS IN THE THORACIC CAVITY OF A COW, CONTAINING GRANULAR OSSIFIC MATTER.

By R. P. Foster, V. S., Spalding.

Dear Sir,—In the spring of 1846, I was requested to see a cow that was reported to be very ill. When I arrived,

I found her looking very thin ; coat staring, and the jugular veins distended apparently almost to bursting; the pulse was indistinct at the jaw, nothing more than a waving being felt; the action of the heart laborious, and the symptoms generally were very unfavorable. This being altogether a novel case to me I was almost at a loss to know what to do. I, however, bled her largely, which there was no difficulty in doing without a cord, but I was much perplexed in pinning up the orifice, in consequence of the distension of the vessel; the cause of which was then to me unknown. After the bleeding she was somewhat relieved ; I then gave her aperient and febrifuge medicines, and left her for the day. On the next day I visited her again and found the laxative operating freely, and altogether I thought her a little better. Repeated the fever medicine. She seemed to improve for two or three days, after which she experienced a relapse. I bled her again, and repeated the medicines, but without any beneficial effect. She continued to get worse in fact, and I therefore told the owner that I could do her no good, and advised him to have her destroyed. To this he did not consent, but said, he would let her die, as she was worth nothing if killed. I asked him if he would let me know when she died that I might examine her? and this he did in the course of a few days. Being from home at the time, I did not arrive before they had partly cut her up, but I saw enough to convince me of the cause of her illness and death. The heart was surrounded by a mass of calcareous matter, contained in cells of various sizes, resembling a bunch of grapes, which was adherent to the parietes of the chest, completely filling that cavity, and compressing the heart so that its free motion was impossible. The lungs were only slightly diseased. I did not weigh the mass, but I suppose it weighed at least two or three stone.

In the summer of the same year I attended another case of the same kind, presenting similar symptoms, but the animal was more emaciated. I at once advised the owner to have it destroyed, which was accordingly done, and the appearances after death were precisely the same as those above recorded. These are the only two cases of the sort I have ever seen.

I am, dear sir, yours truly.

[The existence of osseous tumours within the thoracic cavity of the genus bovis, is by no means uncommon, as from the archives of veterinary science many cases might be brought forward similar to those here recorded. Nevertheless

they are of interest, and probably as yet they have not received that amount of investigation which they merit. Chemical and microscopic examination of these accumulations, show them to be made up of bone-earth—the phosphate and carbonate of lime—deposited in animal matter in a granular form, but not constituting true osseous tissue. The immediate cause in operation which gives rise to them we are perhaps ignorant of, unless we view them as the result of long continued disease, depending, probably, on the nature of the food.]

EXTRACTS FROM BRITISH AND FOREIGN JOURNALS.

ON DIURETICS AND THEIR USES.

By Dr. Baines.

A paper on the above subject was read by Dr. Baines at a recent meeting of the Western Medical and Surgical Society of London.

"After some introductory remarks of a general character, he divided diuretics into two classes,—the direct and the indirect. The direct were considered as local stimulants to the kidneys, their active principles being conveyed to the glands, and thereby exciting them to increased action. Some of these excite the same action, by being excreted entire by the kidneys, as is the case with nitrate of potassa, which salt is always found to be thrown out of the system in the same proportion as it has been administered. Other salts of this class, however, experience some change in the body, their elements becoming re-arranged, and are presented to the kidneys in different states to those in which they were administered; thus, the acetates and tartrates become carbonates, and in this state produce their effects upon, and are excreted by, the renal organs. Analogous facts were mentioned as occurring during the administration of mercury, when the bile has been found to contain traces of this mineral; as also, that ether and alcohol were found in the brain, an organ upon which their specific effects are pro-

duced. In the case of indirect diuretics, however, the fact is different, their effects being caused through the system generally, rather than by any positive action on the glands themselves. Some of these produce diuresis secondarily, the primary effect being manifested on the absorbent system generally, whereby the blood becomes charged with water, and the kidneys are then called upon to excrete it from the blood. Mercury and iodine, were adduced as examples of this class. Other indirect diuretics act primarily on the stomach, and secondarily upon the kidneys, this end being accomplished either by lessening arterial action, and thereby promoting absorption, or by increasing the quality of the blood, and so causing the kidneys to share in the general improvement of the body. Examples of this kind are seen in digitalis and the preparations of iron. The beneficial effects of digitalis in cases of dropsy were then discussed, as was also the necessity of relieving the portal system in cases where the liver and its veins were gorged and congested, before we could hope to rouse the renal glands to increased action. Colchicum, mercury, and taraxacum were instanced as examples of diuretics acting indirectly by relieving the portal system, if congestion be present. The circumstances modifying the action of diuretics were stated to be—1. The state of the skin, a profuse perspiration preventing the establishment of a full diuresis. 2. Active catharsis suspends the operation of diuretics by diverting the fluid of the system from the kidneys to the intestinal glands; a good instance of the kind being seen in Asiatic cholera, in which the kidneys do not act, simply because all the fluid of the body is drained off by the stomach and intestines. 3. No obstruction must exist in the course of the intestinal canal to prevent the flow of the medicine swallowed, as shown by Dr. Barlow. 4. If there be extensive disorganization of the kidney, the due secretion of urine cannot take place. 5. If the anasarca or ascites be very extensive, the pressure consequent upon it, acting upon the veins and lymphatics, prevents the absorption of the remedies, and of the fluid to be evacuated. In these cases, tapping or puncturation of the limbs must first be resorted to, and then, the pressure being removed, the kidneys are more easily stimulated by the action of diuretics. The subject of the dilution of the saline diuretics was then alluded to, and as their absorption was considered to depend upon the ordinary principles of endosmose and exosmose, the opinion that to be absorbed, and to act as diuretics, they must be so far diluted as to be below the specific gravity of the serum of the blood, was upheld; other-

wise, in the place of a diuretic action, a purgative effect would be produced. The effects of acetate and bitartrate of potassa were instanced as bearing out this view. Blood depuration by the kidneys was then considered, and viewed as possible in some cases. The various cases in which the blood in disease is, by means of the kidneys, thus naturally depurated, were mentioned. Thus, in jaundice, where the flow of bile, or its secretion, is impeded, the urine often eliminates it from the system. Again, in cases of portal congestion, the urine becomes loaded with purpurine; and in excessive pulmonary disease, Dr. Hassal has detected indigo in the urine, both of which principles are highly rich in carbon. In health, the solid contents of the urine can scarcely be increased by the administration of diuretics, their effects being confined to the increase of the water of the secretion. Thus, if nitre is given in a healthy state of the system, we shall find, that in the urine secreted the amount of solids excreted only exceeds that under other circumstances by the amount of the salt exhibited, the whole of which passes entire by this secretion. This result, too, would be expected when we remember that, in health, the processes of repair and waste go on *pari passu* in direct relation to the wants of the system, and that, consequently, we cannot expect to do more than increase the fluids, without affecting the amount of the solids, of the urine. But in disease where the whole animal economy is involved and suffering from the various effects of faulty assimilation or perverted nutrition, it is possible that some of the morbid elements may be capable of removal by the action of diuretics, as we know the poison of lead is eliminated under the curative effects of iodide of potassium. The diseases most likely to be thus benefited are gout, rheumatism, scrofula, and some (perhaps all) kinds of fevers. In confirmation of this view, the treatment of rheumatism by nitrate of potassa and acetate of potassa, and that of gout by the latter salt, were alluded to. The administration, too, of the acetate of potassa, according to Dr. G. Bird, has been very successful in agues, the quantity of the solids being more or less according as whether the fits occurred or not. The salts most likely to produce this effect in the system are those which are known to exert chemical changes in albumen and albuminous tissues."

ON INCREASING OUR SUPPLIES OF CAVALRY HORSES.

By Willoughby Wood.

Sir,—I address you once more on the subject of horses. My object in doing so is, the great importance to the country which an adequate supply of cavalry horses is beginning to assume. During the two last years, the demand for every description of useful horses has exceeded the supply. Agricultural horses never were known to be so scarce, nor to fetch such prices. Three year old fillies have in many districts fetched upwards of £50, and colts of the same age £60, while even foals have commonly been sold for £20 each—a price which, some years since, would have bought a colt of an age fit to work. The prices of hunters have been, and still are, enormous; indeed, of those which combine power with good looks, it may be said that the value is pretty nearly what the owner chooses to put upon them.

Such being the case, it cannot excite surprise that it has lately been found necessary to raise the price given for cavalry horses, which may be regarded as forming a class between those used in agriculture and those devoted to the chase. Of ordinary troop-horses, indeed, a certain number would, if not purchased for the army, have been employed in farming operations, being the most active and best breed of that class; while the remainder would have found work as low-priced hunters, as hacks, and carriage-horses. It is thus evident that an extraordinary demand for troop-horses must always, of itself, tend to diminish the supply and raise the price of the general stock of horses throughout the country. But at the present time, coexistently with such a demand, there is also a greater demand than usual for farm-horses, while the call for hunters does not appear to diminish, and that for hacks and carriage-horses is probably also on the increase. Under these circumstances, the supply of horses is, for many years to come, likely to fall short of the general demand for them; and, as a natural consequence, their price will be higher than it has ever been.

It becomes, then, a question of importance alike to the community and to the agriculturist—How is the supply of horses fit for cavalry purposes to be increased? It is an anomaly which ought not to be borne by a nation so celebrated as ourselves for horses, that we are only able to send our cavalry by hundreds, when our enemy sends his by thousands into the field. If, therefore, we are to increase

the force of our cavalry regiments, as not only patriotism but common prudence calls upon us to do, it follows that the agriculturist will find highly-remunerative employment for his capital in the breeding of horses.

To point out the manner in which he must proceed in order to produce the best animals, and thus to realize the highest prices of the market, has been the object of the letters which I have already addressed to you. In the present communication I propose to confine my remarks to one point—viz., the choice of a sire.

A paper appeared a few months back, in a highly popular publication, on the subject of cavalry horses, in which the writer assumed that the bulk of those at present used in our army were too large; that to cross our ordinary breeds with thorough-bred horses would only add to the evil, inasmuch as it would add upright shoulders and washy constitutions to overgrown size; and suggested as a remedy the cross with Arabian sires. The assertions of the writer with regard to thorough-bred horses I shall at present pass over, with the remark that they can only have been made by one practically unacquainted with the noble breed which he libels. But are our cavalry horses too large for their work? Certainly not those of the ordinary regiments. With regard to those of the Life Guards, the Blues, and other heavy regiments, the answer may be doubtful; but, at any rate, the weight they have to carry must be lessened before the horses themselves can be reduced in size and substance. The work which a troop-horse has to do much resembles that of a weight-carrying hunter, with the proviso that it is more severe, and that speed is not so primary an object. Now, the best size for a hunter is from 15 hands 2 inches to 16 hands, both inclusive. A horse below the former height seldom fetches more than a moderate price for this purpose; and a tolerably long experience in the hunting-field convinces me that this is not a prejudice, for, although I have possessed many excellent horses of small size, not one of them was entitled to the appellation of a first-rate hunter. That is to say, whatever might be their speed, however extraordinary might be their powers of fencing, they were unable to go through a severe day, in which both endurance and speed were required in the highest degree, without exhibiting undue signs of distress. On the contrary, I have had several horses above the size I prefer—that is, more than 16 hands—which were able to go through runs of more than ordinary severity, with ease at the time, and without requiring a longer rest than usual to recruit them. I conclude, therefore, that from 15 hands

2 inches to 16 hands is the best size for cavalry horses, as for hunters.

With regard to the use of Arabs as sires for cavalry horses, I wish to speak with considerable diffidence, because my own personal experience of them is but limited. As far, however, as it extends, it is decidedly adverse to their employment, unless in exceptional cases. The few Arabs I have seen were characterized by the upright shoulders which the writer to whom I have alluded attributed to our thoroughbred horses. They were, moreover, low in the forehand (an unpleasant conformation to the rider), and apt to be too drooping at the pastern. The progeny of Arabian sires, out of English mares, is usually small and light of bone, though pretty, and possessed of showy action. Their character is that of park-hacks or of ladies' horses; and they would at once be rejected by any officer purchasing troop-horses, as unfit to carry even the lightest of our so-called "light cavalry" troopers. Unless, then, for the exceptional case of an oversized or enormously powerful mare, it is useless to expect cavalry remounts from the use of Arab sires.

A much higher authority has recommended that recourse should be had to sires like the weight-carrying hunter, with the view of perpetuating the breed of horses under consideration. I am convinced that such advice, if largely carried out, would lead to the most fatal results. Your readers may perhaps recollect that I have always strongly insisted upon the necessity of purity of race on the part of the sire, whatever may be the class of animal which it is desired to produce. That the male ought to be thorough-bred, or of an accredited pedigree, and of a higher caste if possible than the female, is a maxim I believe unanimously upheld alike by the highest theoretical and practical authorities in breeding. For my own part, I never knew it departed from without signal failure. Taking only one or two of the more obvious considerations connected with such a course into account, it is obvious that such must be the almost inevitable consequence. On what ground does any man, who reflects at all, select a sire? Why, that he wishes his offspring to resemble him. But it is well known that the power possessed by either parent of imprinting their own type upon their offspring depends upon the purity of blood and antiquity of race of each. Thus the offspring of a thorough-bred short-horn bull and a common cow will frequently resemble very closely the character of the pure short-horn. In like manner, when a hackney mare or a Welsh pony is put to a thorough-bred horse, the offspring shows indications of being much more

than half-bred, or in other mares it resembles its high-bred sire more closely than its low-bred dam. Supposing then that a person wishes to have a horse resembling a three-parts bred weight-carrying hunter, the most unlikely method which he can take to gratify his desire is to put a mare to a stallion so bred. Like effects are produced by like causes, and by no other. His weight-carrying hunter having been produced not thus, but quite otherwise, so he may be assured that only as it was produced, and in no other way, has he any chance of obtaining its like again. A three-parts bred sire, let his individual excellence be what it may, is a mongrel and nothing else; and it is against every calculation of probability to assume that he will perpetuate his own good qualities to the exclusion of the baser elements which exist in his pedigree.

Or, to view the subject for a moment under another aspect. It is quite possible that the great grandsire of the three-parts bred stallion may have been a cart-horse. It is notorious that in numerous cases the offspring partakes less of the character of its immediate parents than of its remoter ancestors. Who then shall guarantee the offspring of such a sire from exhibiting one or more of the undesirable qualities of such a cross, either the heavy shoulder, or the deficient courage of the cart-horse? Let not authority then, however high, tempt the farmers of England so far to depart from sound principle as thus to breed; for they may be assured by so doing they are, in a matter sufficiently dark and intricate, throwing away every guide and landmark which might otherwise aid them in their course.

The only method of increasing the number of really valuable horses which can be depended upon, is for every man who has a good mare, of whatever breed, (always excepting those only adapted for the dray) to send them to the best thorough-bred stallion within his reach. If a mare is worth breeding from at all, she will in this manner produce a better foal than any other. Suppose, for instance, that she is a cart-mare, at once powerful and active, a good bay or brown, quick stepping, and with a roomy frame; it is highly probable that her offspring by a well-selected thorough-bred horse will turn out a handsome carriage-horse, or one well-adapted for artillery service. Suppose, however, that her owner does not desire to sell her for either purpose, and only wishes to breed for the purpose of recruiting his team. Well, in that case he will obtain an animal which will accomplish, if well kept, at least one-third more work than an ordinary farm-horse. Were the teams of my Staffordshire and Derbyshire

neighbours thus bred, they might diminish their number by one-third without impairing their real strength. The old-fashioned prejudice that because a horse is fit for a higher occupation than drawing the plough, therefore he is not fit for that, is deeply-rooted over a large portion of the kingdom; but it must yield at last to the force of truth, and ocular demonstration of the contrary. Or take the case of a mare of somewhat inferior grade—such, for instance, as the farmer drives in his trap, or the tradesman in his light cart; what useful and valuable horses might we not expect from their union with a thorough-bred horse? It is from animals so bred, that horses for almost any conceivable purpose are furnished. According to individual peculiarities exhibited by each, will one colt make a hunter, another a light or heavy cavalry-horse, another a hack, or another still a brougham or cabriolet horse. In one, power may predominate; in another, action; of some, their figure may be the chief recommendation; while a fortunate few will possess all three in due and happy combination. These are the high-priced hunters or the guardsman's chargers.

Of mares more highly bred than the two classes I have alluded to, I shall not here speak, since they are certain, if used for stud purposes at all, to be put to thorough-bred horses. I wish to impress upon agriculturists, and to induce landowners to impress upon their tenants, the expediency, under present circumstances, almost amounting to a duty, of providing an increased supply of horses available for the military service of their country. The course which I recommend is one, which, so far from causing them extra expense, will, if properly carried out, bring them in as large a share of profit as the rearing of any other kind of stock. The real state of the case is this:—In every district there are to be found numerous mares with abundant strength, and with many other good points, but wanting that one quality (without which the horse ever remains the pariah of his tribe), viz., the power to move with speed and ease. Put such mares to a stallion no better bred than themselves, and you perpetuate the disqualification in their offspring. Such is the parentage of the hundreds of low-priced brutes which disfigure our fields, and are a drug in our fairs. It seems as though some evil-disposed enchanter had cast his spell upon them, and condemned them for the term of their existence to the slavery of the higgler's cart, since for lighter labour they are utterly unfit. No effort of their own, no external persuasion, could take them over four miles in half an hour. A horse which cannot on a pinch do thus much is worthless indeed. But

put the mare which I have described to a thorough-bred horse, with good action, and the spell of immobility is removed as regards the foal. He will pick up his feet freely, and set them down in front of him; his muscles will be supple, his bone flat, and his gait easy: and all this without the sacrifice of power or substance. Indeed, I would caution the inexperienced breeder who has such a mare, not to select too large a stallion, for the offspring of such a union is apt to err rather in oversize and in clumsiness than in deficient power.

In former letters I have adverted to the strange mistake so commonly made, of connecting the idea of high breeding with want of substance It may suffice here to repeat, that by no other means than by those I am now recommending, is so much EFFICIENT POWER to be obtained. If, indeed, you want a "stand-still horse" for show, there is nothing like a dray horse; but if you required one to carry from fourteen to seventeen stone on his back at a moderate pace, or to draw a heavy carriage, or to assist in moving a gun, depend upon it there is nothing superior to the offspring of a useful, clean-limbed, working mare by a thorough-bred horse.

It is an important matter to be certain that the stallion you employ is actually thorough-bred. Many horses travel up and down the country with long and showy pedigrees, professing to be thorough-bred, which are not so. I last summer, in Yorkshire, saw in the same field two mares, one the daughter of the other. The elder mare was not only the better shaped of the two, but gave tokens of being better bred. I inquired of the owner whether the sire of the younger was a thorough-bred horse? He answered that his owner asserted him to be so; but that he suspected this was not the case. On looking at the horse's pedigree I found that he could not be thorough-bred. Such I believe to be a by-no-means-uncommon case, even in Yorkshire. But farmers who would not grudge trouble with regard to any other department of their business, are in this matter unaccountably remiss. They put their mare to the first horse which walks into their yard, having no knowledge whatever of him; while they are ignorant of the very existence of horses of first-rate reputation standing a few miles from their own residence, perhaps in the very town whose market they weekly frequent. The only proof of a horse being thorough-bred, which ought to be relied on, is the fact of his being in the Stud Book. It is a great advantage if he is also to be found in the Racing Calendar. It is by no means necessary for ordinary purposes that a horse should have been a brilliant winner; but a

preference ought certainly to be given to one who has done something. For my own part I would far rather pay £5 for putting a mare to a horse whose speed and bottom had been proved by frequent victories, than £2 for the services of one who, never having been tried, might be a worthless brute.

Of the other essentials of a stallion, next to high pedigree and proved prowess, I would place the formation of the shoulders, the position and conformation of the fore-legs, and the shape of the neck and head. On these, space not permitting me to dilate, I must condense my meaning by saying that no horse ought to be used for the class of mares I am speaking of, which has not shoulders well receding, a good fore-hand, a refined head, and a neck long enough, yet with sufficient substance: above all, his action must be as good as possible, as much of the value of his stock will depend upon their inheriting this quality.

The convictions which I hold on this subject are the result of no brief experience, and of no cursory observation. Since, however, I have been the owner of Red Deer, they have received additional strength from the opportunities which I have possessed of watching the progress of his progeny from the mares which have been sent to him by other persons. I must say that in numerous instances in which I have prognosticated failure, I have been agreeably mistaken, and that mares whose exterior was of the most unpromising kind have produced excellent foals by him. In point of size and substance especially, his stock more than bear out what I have always maintained on this subject. I will quote one or two instances. A farmer put two mares of his team—the one to Red Deer, the other to a cart-horse. The difference in size is so striking between the two foals, that persons at a distance always mistake in guessing which is the son of the thorough-bred horse. Another farmer put an insignificant-looking little mare, about 15 hands high, to Red Deer. The foal promises to obtain great size, while his action and general appearance seem well suited for making him a hunter. I have two foals of my own out of thorough-bred mares, one by Red Deer, enormously lengthy, and of great strength; the other by a Yorkshire coach-horse (the mare having belonged to a farmer previous to my purchasing her), which is small and insignificant, compared with the first. It is probable that the coach-horse might weigh half as much again as Red Deer, and therefore to the inexperienced would seem to possess more substance. The surplus, however, being chiefly made up of fat and "offal," is not transmitted to another generation. I attach next to no importance to the size of

the sire, provided he does not come of an under-sized family. Gameboy is a small, mean horse in appearance, yet is the sire of several winners at the Yorkshire agricultural shows. His blood—that of Tomboy, which I have already eulogised—is sufficient guarantee for the excellence of his stock. Red Deer, standing 16 hands high, is rather above than under the medium size; while his blood, being that of Venison on one side, and of The Colonel on the other, cannot be surpassed either for endurance or for speed, nor have his achievements on the course often been exceeded. Such are the sires likely to beget stock suitable for every purpose for which they may be required.

On another occasion I may, perhaps, enter into details connected with the mutual relations both of form and blood between sire and dam calculated to ensure the most successful results as regards the offspring. At present, both time and space forbid me to say more than that, as a general rule, a better foal will be obtained from a useful but somewhat under-bred mare, by putting her to a good thorough-bred horse, than by resorting to any other cross.

I remain, your obedient servant.

(To the Editor of the Mark Lane Express.)

ON WOUNDS OF THE ARTICULATIONS.

By Professor Rey, Veterinary School, Lyons.

Non-penetrating Wounds—Penetrating Wounds—Frequency of these Wounds—Causes—Symptoms—Progress—Terminations—Accompaniments—Anatomical Lesions—Prognosis.

Wounds of the articulations are extremely interesting in Veterinary Surgery, in consequence of their frequency and serious nature.

We possess on this subject several important works, the principal of these are by MM. Renault, Lecoq, Tisserant, Reboul, and Mercier. Besides the facts described in the writings of the above authors, there are numerous isolated cases in our veterinary records.

My intention is to group and arrange them, and to add any special observations which the clinique of the school has furnished me with. I shall commence by a considera-

tion of them in a general manner, and conclude by investigating the solution of continuity of the various articulations, with the curative means which should be adopted for each.

The articulations that are exposed, are subject to various lesions. Their superficial situation, coupled with the motion of the animal, frequently subjects them to injury.

The rapidity of the action, and necessary exertion to which animals are put whilst drawing, added to the weight of the body, frequently, among the monodactyles, give to these wounds a most grave character.

NON-PENETRATING WOUNDS.

These affect the exterior structures of the articulations, and frequently do not differ from wounds in other parts of the body, although sometimes certain peculiarities may be assigned to them; for instance, they may be complicated by arthritis, and followed by a wound penetrating into the articulation. The difference in the vitality of the adjacent tissues, and the proximity of tendons, and synovial sheaths, also increase these complications. The mobility of the joints, and the irregularity of the external wound, likewise retard cicatrization.

Horses are often affected with non-penetrating wounds at the bend of the knee and the hock, and when these wounds are accompanied with much loss of substance, the cure then becomes greatly retarded. The cicatrices are of an unhealthy character, and unsightly, through much induration of the cellular tissue. Astringents, solvents, and caustic agents have not been always found sufficient to heal this solution of continuity.

PENETRATING WOUNDS.

Wounds which penetrate the articulations present certain characters of a more serious nature than the preceding. They generally produce traumatic arthritis, and are of a very complicated nature. The ginglymoid articulations are most frequently the seat of these wounds, and among them the stifle joint is often exposed to accidents of this kind.

From the nature of the synovial membranes, they have been compared, with more or less truth, to serous ones, which frequently, when diseased, have as bad a termination as articular wounds. The situation of these membranes explains the frequency of these lesions; and we are often astonished to find that a contusion which has its seat several inches from an articulation, causes a fistulous opening from

which synovia escapes. This is accounted for by the position of some synovial sheaths, which become extended over the folds of the nearest ligaments and fibro-cartilaginous structures, thus giving to them a great extent of surface.

In some parts the synovial membrane is merely sub-cutaneous, and this peculiarity exists particularly in the neighbourhood of ball and socket joints, and the shoulder.

The veterinary surgeon is very often called upon to treat articular wounds in the horse; it is, in fact, the monodactyles which are the most exposed to these lesions, in consequence of the active service required of them.

Cases of this kind are rarely met with in ruminants, as the proprietors instead of consulting a veterinary surgeon, have them destroyed.

Causes.—Articular wounds are produced in various ways, principally, however, by pointed and cutting instruments, or by contusions.

A pointed instrument may penetrate an articulation, although accidents of this nature are rarely met with, if we except nails, which occasionally enter the foot whilst horses are going through the streets. Frequently the name of open joint is given to lesion of the bursa of the navicular bone, which may exist without the articulation of the last phalange being implicated.

Some operations, also, especially those where the cartilages of the foot are removed, occasionally produce articular wounds. Iodine injections, combined with puncture, in the treatment of hydrarthrosis, according to report, often occasion results of a very serious nature.

These wounds are likewise frequently caused by contusions; such as blows on the foot, the knee, the elbow, and the hock. Diseases of the coronet often lead to wounds of the articulation of the foot, especially during winter, when the shoes have large and high caulkings. Other causes may be mentioned, but the most frequent are those above named.

The knees of horses are often severely wounded by their falling on sharp stones; the same cause will produce accidents of a similar nature of the pastern, and abrasion or destruction of the tissues may then lead to exposure of the articular surfaces. I have seen in a mule a wound penetrating the articulation of the lower maxillary bone, caused by the application of a splint invented by Gohier to remedy partial luxation of the cervical vertebræ.

Lastly, firing, which is frequently resorted to for diseases of the articulations, when incautiously done, often occasions deep wounds from which the synovia escapes.

Articular wounds are not uncommon in dogs, being mostly caused by bites from other dogs.

Symptoms.—These wounds are either *simple* or *complicated.* If they show themselves at first by only slightly marked symptoms, they are *simple.* The proprietor of a wounded animal often when seeing a wound of such an apparently trifling nature, and not comprehending the serious consequences arising from an escape of the synovia, allows it to remain unattended to, and he probably continues to work the animal, but at the end of a few days, much pain is evinced, which clearly shows the accident to be of a serious kind.

The primary symptoms resemble those of an ordinary wound. The pain at first, although but slight, is soon followed by inflammation of the synovial membrane and articular surfaces; the suffering then becomes extremely acute, and the animal is very restless. Movement of the diseased articulation is difficult, and on attempting to give motion to it, the most intense pain is caused, especially when the wound is situated in any of the extremities. The animal is also annoyed with irritation of a very troublesome nature, and constantly endeavours to rub or gnaw the limb.

One pathognomonic symptom is generally observed, and this consists in the escape of the synovia from the wound, which is ordinarily small and fistulous. This is at first a serous liquid of a yellow colour, which soon coagulates when brought in contact with the atmosphere, appearing of a ropy nature, and forming clots of an albuminous character, of a whitish colour, which present an appearance resembling gelatine.

When these wounds are large, the diagnosis is easy. The situation of the wound, the loss of the synovia, and exposure of the cartilages to the air, admit of no doubt as to the result. It is not so when the wound is oblique or fistulous, or when there is a want of parallelism in the solution of continuity in the skin, and that of the capsule of the joint.

The probe might be used to ascertain the direction and depth of the wound, but it is not advisable to explore it to any extent because it is likely to increase the separation of the tissues, and also because the indications shewn by a wound, whether penetrating or otherwise, are at the first not very marked.

But escape of synovia is not always pathognomonic of open joint. It might be from a tendinous bursa. Sometimes this secretion is so changed in character that it can scarcely be recognised. Fungoid growths, too, are often seen

between the edges of the wound accompanied with the exudation of a serous liquid; and occasionally one of these excrescences is more developed than the others, having in the middle of it an opening resembling a synovial fistula.

In the progress of articular wounds which have been neglected, inflammation soon extends over the whole surface of the injured part: the contiguous tissues swell, and extreme pain is evinced; much constitutional excitement is set up; the pulse becomes increased; the conjunctival membrane injected; the buccal membrane hot, and the thirst intense. The animal either remains down, or at other times he continues standing, because he instinctively is conscious of the extreme pain which is caused in moving, particularly when getting up after being down for a few minutes. The other extremities become tumefied, and insidious abscesses are occasionally produced on different parts of the body.

Progress.—M. Velpeau has justly observed, that during the first few days after the infliction of these wounds, no symptoms of a dangerous character are manifested; but this period of incubation having passed, that at the end of the third, fourth, or fifth day, reaction takes place with more or less force in the injured articulation, or in the organism generally. These effects are observed to be the same in all animals.

Inflammation is rapidly developed in complex articulations; but in those which have no tendinous bursæ, it is less quick in its appearance than in the surrounding parts.

Swelling of the joint shows the extension of inflammation over the articular surface. The absence of this swelling will lead the practitioner to anticipate the case to be of a difficult nature.

Terminations.—The terminations of articular wounds are cicatrization, suppuration, gangrene, phlebitis and chronic arthritis.

These wounds do not always terminate in death. If the patient immediately receives proper treatment, and if kept quiet, inflammation may not supervene in the articulation. Several examples of articular wounds cicatrizing in a few days can be cited. A favorable termination may be expected when there is a gradual diminution of pain; a healthy appearance of the wound, and the pus from its being of laudable character. So if the pain of the affected joint becomes easier, it indicates progression towards a cure.

There is generally a swelling, which remains for some time after the wound has healed, but this finally disappears.

Suppuration of articular surfaces is a serious termination

in consequence of the irremediable alteration which it produces; and because the formation of pus has a tendency, by sympathy, to take place in the other articulations. In this case the pus is of a greasy and serous nature.

Gangrene has been frequently observed, and it constitutes a fatal termination.

General phlebitis, which produces death, is developed by the continuance of suppuration, and gives rise to the symptoms of purulent infection.

If death is not produced by the causes just mentioned, chronic arthritis is commonly the consequence of articular wounds. This has been especially observed when a speedy cicatrization of the synovial fistula has not been effected. Continual pain, lameness, engorgement of the tissues, with tendency to anchylosis, complete or incomplete, are the results. Sometimes the animal becomes gradually thinner; the belly is drawn up; the flanks nipped in, and chronic gastro-enteritis, or disease of the lungs, terminates life. In the more successful cases, the articulation remains tumefied, and presents a dropsical appearance, which is persistent.

Accompaniments.—These are local or general:

The *local* accompaniments of articular lesions are wounds of arteries, veins and nerves; fractures, inflammation of the contiguous bursæ, and anchylosis. Among the *general* accompaniments are observed, diffused phlebitis, tetanus and founder. Foundering frequently occurs in the opposite foot of the animal to that which is injured. It is caused by fatigue, especially when the animal does not lie down. In cases of this kind, it is of common occurrence that the first symptoms of this complication are not observed, and when discovered, the disease cannot be remedied. The sole of the foundered foot, is very much altered in form, being convex, and presents an incurable bulging.

Autopsia: Anatomical Lesions.—After death, in the injured articulation will be seen lesions indicative of either acute or purulent arthritis having existed.

Prognosis.—The danger of articulated wounds has been for a long period remarked; and all are agreed on their importance, but we must not regard them as always incurable.

Veterinary surgeons have recorded a great number of instances of cures of these wounds; mostly those which have cicatrized by the first intention. These wounds have also frequently been successfully treated after suppuration has taken place. There are, however, cases in which every means resorted to have failed.

In order to form a correct prognosis of articular wounds, the extent of the lesion, the length of time which has transpired since it occurred; the direction of the wound, its situation, age of the animal, and the complications with which it is associated should always be taken into consideration.

A wound situated in the bend of an articulation is the least serious, because it allows of the pus and altered synovia to escape.

Small or narrow wounds, produced by a pointed or cutting instrument, are generally considered to be of a less formidable nature than others, as they have a disposition to quick cicatrization, and are rarely followed by inflammation of the articular surface. A large wound, on the contrary, frequently produces suppuration of the articulation. When of a recent occurrence, these wounds are of a less serious character, because the development of arthritis is prevented; but when they have existed for a considerable period, suppuration generally takes place, and it has been shown that an articulation which has suppurated, resumes with difficulty its normal condition.

The consequences of incurable degenerations are persistent.

Wounds of large articulations are more serious than those of the smaller ones.

Writers have not always agreed with respect to the influence age has upon the subject of these lesions. Since Lafosse's time, successful treatment has been met with in old horses more commonly than in younger ones. This assertion rests upon observations made with regard to nails running into the foot, and injuries to the knee. It cannot, however, be admitted with reference to all the articulations. The complications are generally less to be apprehended in young subjects, because their tissues are more extensible than in aged ones.

The situation of an articular wound affords certain indications of the seriousness of its nature. Articulations which cannot be kept perfectly quiet for some time are less successfully treated than others which can be. Thus, wounds of the jaws are not so serious as those of the phalanges.

It seldom occurs that wounds of the humero-radial articulation are treated successfully. Those also of the hock and fetlock are almost as difficult of cure. The articulations in which cicatrization is most readily obtained, are those of the knee and the deeper seated joints.

The veterinary surgeon is deprived of a resource with regard

to animals, which the surgeon resorts to in articular wounds of man when complicated, namely, the amputation of a wounded joint, which would not be of service among our domesticated animals.

For a long time authors have endeavoured to give an explanation of the cause of the seriousness of articular wounds. The theories on this subject have generally been in conformity with the doctrines of the day in which they have been written. Parè attributed the danger of these wounds to lesion of the aponeurosis of the tendons. Brasdor, Bichat, and Larry, to the involuntary resistance of the tissues to inflammatory swelling. David cites the action of the pus on the synovial cartilages, but which is only secondary. Modern surgeons have especially regarded the introduction of the air as exercising a very powerful action on the articular surfaces.

To combat this latter opinion, it has been said, that the introduction of air is not the cause of arthritis: as that it is not more irritating than an instrument, or the covering which is placed over the wound.

The innocuousness of amputations to the contiguous parts has been particularly observed. In fact the disarticulation of a limb is far from producing so much acute suffering as that of an articular wound. We have frequently made amputations of this kind on the dog, and have seen the wounds readily heal, without complication, and without requiring any particular care. In cases of this kind, the articular cartilages are absorbed and disappear by degrees, leaving in their place fleshy granulations, which precede cicatrization.

To conclude: It cannot be denied but that air has a certain irritating effect on articular surfaces; but it is not this action which is principally to be feared. One of the complications, the most to be apprehended, is arthritis; and this inflammation appears to result especially from the susceptibility of the various tissues which compose and surround the articulation. Until the present time, the effects produced by the movement of the articulation have not been sufficiently taken into consideration. In order to avoid these complications, it is absolutely necessary that the affected part should be kept perfectly quiet, since practical observation demonstrates that articular wounds are more or less successfully treated according to the mobility of their situation.

(To be continued.)

THE VETERINARIAN, JANUARY 1, 1855.

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

The commencement of a New Year is a period perhaps above all others conducive to the awakening of the higher and nobler feelings. We pause, and as from an eminence survey the past, and look towards the distant but obscure future. And although the retrospect may not always be pleasing, nevertheless it will be sure to prove more or less profitable. Here and there spots may remind us of those whose course has been ended before our own. They may have been the counsellors and the guides of our youth, veterans in the common cause; or those with whom we had set out in early life; whose expectations were more bright and cheering than our own, and with buoyant spirits they entered on their career, flushed with the confidence of success, never, alas! to be realised. Others, we have since known, who had scarcely began the race when they faltered in the course and fell. Such is the uncertainty of life. And it cannot be long ere we too must say to "corruption, thou art my father; and to the worm thou art my mother and my sister." And is this all? Is this the whole of being? Both Reason and Revelation emphatically answer—No. 'Tis well, then, for us to be up and doing, for each has his duties to perform, and no one liveth for himself alone. Beautifully has this been thus expressed: "God has written upon the flowers that sweeten the air—upon the breeze that rocks the blossom on its stem—upon the raindrop that refreshes the sprig of moss that lifts its head in the desert—upon the ocean that rocks every swimmer in its deep chambers—upon every pencilled shell that sleeps in the caverns of the deep, no less than upon the mighty sun which warms and cheers millions of creatures that live in its light—upon all his works He has written,

'None of us liveth for himself.'"

May we venture to express a hope that during the eventful

year which has just closed, our friends have not found us very remiss, and that we still have the assurance of their continued support? And may we not also anticipate that this coming year will considerably augment their number?

Our desire is to be the exponent of the wishes of the profession, and the honest chronicler of its onward progress. Its periodical literature may be accepted as an index of its condition. Should this sink or be lowered, it is a sure indication that retrogression is taking place. On the other hand, should it become exalted, satisfactory proof is afforded of its advancement. To each and all, then, we look for support. Our journal is yours or what you make it. We have long laboured in the cause, and we believe it to be a good one, nor have we any reason to regret the step we have so boldly taken. Still our pathway has not always been strewn with roses, and we are desirous of improvement; and further, we believe it possible that this can be attained provided each will come forward and contribute his quota to science. It is not much we ask. We count up now a goodly number as a profession, and we know that there are minds of sterling worth among us, and many have not yet essayed aught toward the general weal. Individually we may be able to accomplish but little, yet collectively much may be effected. Well has it been observed, that, futile alike would be the efforts of the tiny polyp alone at work in its coral-cell, and the labours of the solitary although provident and industrious ant; but when myriads of these are congregated together they can and do achieve seeming wonders. So let us co-operate: a bright vision of the future will then be opened up; and although the cloud at first may be not bigger than a man's hand, it will be sure to increase, and bursting descend in copious showers, refreshing and fertilizing all around, so that no longer will mental dearth be experienced by us.

Our acknowledgments are due, and sincerely given, to our numerous contributors. Their continued kindness it is which gives us encouragement, and emboldens us still to press onwards. With most of the sentiments expressed in a

communication received from an esteemed friend, with which this number begins, we concur. To refer to these is not now necessary. On some points we have, unknown to each other, fallen into a similar train of thought; and it only remains for us to reciprocate the kind wishes with which he has closed his friendly review of our proceedings. May both his and our expectations be fully realised.

We regret exceedingly to have to announce the somewhat unexpected death of the esteemed Editor of this Journal. For some time past the health of Mr. Percivall had been failing, and much anxiety was awakened through it among his friends; but it was hoped that as his labours had become much lighter by his retirement from the army, and he had located himself in the delightful town of Richmond, in Surrey, that his life would not only have been prolonged, but health, in a great measure, if not completely, restored. It was, however, not so to be. He died at his residence on the 11th of December, 1854, after only a few days' severe illness, and was buried in Brompton Cemetery on the 16th. In a subsequent number we hope to be enabled to give a biography of him; for it cannot be, that a leader has fallen amongst us, and there is not one to recount his deeds, or place on record what he has done.

Mr. Percivall's life was truly devoted to his profession, of which he was, in every sense of the word, a most distinguished member; not only by filling a high and prominent position in it, but by his pen adding very considerably indeed to its literature, and, by untiring energy and gentlemanly deportment, promoting its welfare. It may be that for a long time his loss will be felt by us. In the meanwhile, we earnestly and respectfully solicit the friends of the deceased not to slacken in their assistance. Arrangements will soon be completed for the continuance of the publication of this Journal, one with which the name of Percivall has long been associated; indeed, with him it may be said to have almost

originated; and our sincere aspiration is that a double portion of his spirit may rest on his successor.

On account of the above sad event having taken place, and our being altogether unprepared when called upon to edit the present number, we have to ask the indulgence of our friends for any errors or irregularities that may exist in it.

The subjoined is an extract from the 'Sheffield Times.' It is well when honour is given where honour is due.

"Mr. William Percivall, veterinary surgeon to the first life guards, and for many years editor of the monthly journal called the 'Veterinarian,' died on Monday last. Mr. Percivall obtained the diploma of the Veterinary College in 1811, previous to which he had passed the usual examinations at the College of Surgeons. He was the author of 'Percivall's Lectures on the Veterinary Art,' 'Anatomy of the Horse,' 'Percivall's Hippo-pathology,' 'Lameness in Horses,' and 'Lectures on the Form and Action of Horses.' With the late and eminent William Youatt he was in early life co-editor of the 'Veterinarian,' which of late years was under his entire management. In him the veterinary profession has lost one of its most respected members and its chief literary ornament."

ROYAL COLLEGE OF VETERINARY SURGEONS.

On Thursday evening, Dec. 14th, a Converzasione was given by the President of the Royal College of Veterinary Surgeons, Wm. Field, Esq. at the Institute of the Profession, No. 10 Red Lion Square.

The capacious suite of rooms, consisting of the council-room, board-room, library, and museum, was thrown open for the reception of the visitors. On the walls were hung many valuable paintings by Sir E. Landseer, J. Ward, R.A., and others, selected from the choice collection of Jacob Bell, Esq. The tables were covered with microscopes, stereoscopes, and photographic drawings, kindly sent by Messrs. Varley, Williams, and Topping.

A selection of chemicals, and articles of veterinary materia medica from Messrs. Bell and Squire was exhibited in the

museum and library. An extensive series of calculi of large size and varied composition, together with numerous remarkable specimens, showing the results of disease in the domesticated animals, and including several of unusual occurrence, such as ossifications of the brain, heart, lungs, liver, spleen, &c., were supplied from the museum of the Royal Veterinary College, and the private collection of the President. A minutely dissected preparation of the nerves of the horse's heart was forwarded by Dr. Lee.

Portfolios of pathological drawings were brought by Professors Spooner and Simonds, and the President. Mr. James Turner suspended in the library tablets containing an account of some new "Pathological Facts" connected with tetanus, as disclosed by the scalpel, and "Physiological Experiments" resulting from the removal of both carotid arteries and jugular veins of a horse.

We have appended copies of these tablets to this report, deeming them of worth to the profession, and to merit more than a mere ephemeral existence.

Several articles of *vertu*, with busts of Professor Faraday, and Dr. Babington, and carvings in ivory from statues by Chantrey, reduced by Mr. Cheverton, also ornamented the rooms. The bust of the late Professor Coleman, with cases of electrotype medals, were contributed by Mr. Braby.

The decorations were completed by several beautiful exotic and other rare plants from the Royal Botanic Gardens.

The histories of the calculi were given by the President, in whose practice most of them had occurred. The highly interesting illustrations of minute anatomy by the microscope, and photographic anatomical drawings by the stereoscope, were explained by Professor Simonds; while the chemicals and articles of materia medica were described by Professor Morton, who also sent specimens of drugs used by the native practitioners of India, and others received by him from veterinary surgeons in the Honorable East India Company's Service.

Refreshments on the most liberal scale were supplied by Messrs Gunter, and gave very general satisfaction.

The following gentlemen accepted the invitation, most of whom were present during the evening.

Lieutenant-Colonel Sir James Hamilton, Bart.; Sir Robert Peel, M.P., Bart.; Sir Benjamin Brodie, Bart., F.R.S.; Sir Edwin Landseer, R.A.; Hon. A. F. Kinnaird, M.P.; Sir Peter Laurie; Sir James Tyler.

Reverends—R. Bush, H. Sandham, M.A., and R. Burrow.

Professors—W. T. Brande, F.R.S., M. Faraday, F.R.S.,

R. Owen, F.R.S., R. Quain, F.R.S., J. Quekett, and W. J. T. Wray.

Physicians—J. M. Appleton, B. G. Babington, F.R.S, A. W. Barclay, James Bird, W. D. Chowne, E. Crisp, D. Frazer, A. B. Garrod, H. Jones, E. Lankester, F.R.S., J. O. M'William, H. S. Morris, R. Nairne, W. E. Page, O. Reech, A. Sayer, F. Sibson, F.R.S., J. Snow, J. Webster, F.R.S.

Surgeons and Friends—Jacob Bell, J. S. Bowerbank, F.R.S., W. Brewer, H. Brook, F.R.S, T. Buckland, J. Cheverton, J. Clinton, E. Cooke, F. J. Delafosse, J. Field, W. Field, J. W. Fisher, J. S. Gamgee, S. Garrard, E. George, J. Gray, W. Greenwell, H. Haywood, P. G. Hewett, F. Hicks, W. Hills, J. Hogg, J. Hudson, G. Jackson, W. R. James, H. C. Johnston, S. A. Lane, H. Lee, P. N. Laurie, P. Magenis, M. Marshall, J. F. Marson, — Mills, C.E., C. Moore, — Myall, G. D. Pollock, J. Pope, — Potter, J. Reddish, G. Robinson, J. Robinson, W. Roscoe, W. Ruff, W. Smith, J. Solly, F.R.S., J. de C. Sowerby, P. Squire, J. Toynbee, F.R.S, C. K. Topping, H. Thomas, T. Tatum, J. H. Tucker, A. Ure, F.R.S., B. Webster, H. White, J. Weiss, R. Warrington, C. Woodward, F.R.S., J. G. Wilkinson, W. Wilkinson, J. White, H. R. Wotton, Esquires.

Members of the Veterinary Profession—Professors Spooner, Simonds, and Morton. *Assistant Professor*—Varnell.

The Principal Veterinary Surgeon to the Army—J. Wilkinson, Esq.

The Senior Veterinary Surgeon to the Ordnance—W. Stockley, Esq.

Messrs. G. Austin, C. Baker, J. D. Barford, Wm. Barrow, R. Bowles, E. Braby, James Broad, William Burley, W. Cheeseman, A. Cherry, John Constant, J. R. Cox, H. Daws, C. Dickins, J. Ellis, W. Ernes, S. Fisher, E. N. Gabriel, W. J. Goodwin, T. W. Gowing, T. Greenhill, J. B. Henderson, R. L. Hunt, W. H. Kent, S. King, J. H. Langworthy, H. Lepper, William Litt, W. B. Lord, F. J. Mavor, T. W. Mayer, J. Mannington, W. M'Kenna, J. Moon, G. Norman, William Partridge, A. J. Rogers, W. G. Reeve, W. Robinson, J. Rose, James Rose, F. R. Silvester, G. South, E. Stanley, H. W. Sparrow, H. R. Stevens, James Turner, W. S. Wallis, C. Wallis, R. Willis, S. H. Withers, J. Woodger, and the Officers of the Veterinary Medical Association.

Although this was the first meeting of the kind which has taken place in the Institute of the Royal College of Veterinary Surgeons, we sincerely hope it will not be the last, for all connected with it was "right nobly done;" and

such associations cannot fail to promote the best interests of our profession, and to advance it in the estimation of the public. The free intercourse which thus takes place between the members of it and the higher division of medical science, unrestrained by the formalities of society; the inquiries instituted as to the different features the same disease may present in different animals, and the remedial means resorted to for its removal, with the peculiarities of action of the various therapeutic agents, all tend to awaken thought, to stimulate to further investigation, and to expand the mind by the acquirement of fresh knowledge. Moreover, the novelties brought forward in the form of morbid specimens, or drawings of the effects of disease or unusual alterations of structure, are highly interesting, and often lead to conversation, and it may be even to difference of opinion, from which nothing but good can possibly result, provided those courtesies be observed which mark the association of men of education and scientific attainments. Nor is it among the least of the benefits derived from these meetings, that a more intimate union of the two professions is thus effected, by showing how each may to the other give support, and thus both become advantaged.

NEW PATHOLOGICAL FACTS DISCLOSED BY THE SCALPEL IN NUMEROUS POST-MORTEM EXAMINATIONS OF SYMPTOMATIC TETANUS.

By James Turner, M.R.C.V.S.

About eight years since, "The Maid of Kildare," a racing mare of repute, while passing through London from the country, having just won a race, met with the following accident: upon leaving the station of the North Western Railway, she kicked violently at a cab which was passing at a rapid rate, and entangled her hind leg in the wheel. This was followed by immediate lameness and intense pain of the limb; she was then walked on three legs to Mr. Maynes' Livery Stables, Langham Place.

Upon my examination of her in the presence of the owner, I found a deep transverse wound in front of the shin, about an inch and a half in length, rather inclining to the outside of the leg. The corresponding part of the front of the metatarsal bone, two inches below the hock-joint, was completely denuded; and not only was the periosteum gone,

but the substance of the bone was scooped out into a small furrow. I could also feel with my finger the extensor tendon. There being no fracture, and the hock-joint having escaped injury, I was not without some hope but that the mare might do well.

She was placed in a quiet loose box, and the most strict antiphlogistic treatment adopted, consisting of bleeding, very moderate purgation, soothing fomentations, and poultices continually applied. A little more than a week from the infliction of the injury, I was most agreeably surprised: all the acute symptoms had subsided, the mare was apparently free from sympathetic fever, and she could make a fair walk of her own accord round the box. But yet I was extremely jealous, through former experience, at the *absence* of one symptom, viz., a salutary tumefaction of the injured limb: if possible it appeared even less in circumference than the sound one.

On the morning of about the ninth day from the accident, the case assumed a new aspect; tetanic symptoms having set in most acutely; there being extreme rigidity of the muscles of the neck and throat, and the membrana nictitans was drawn powerfully over the eye, while the lameness of the injured limb had vanished! The day following the muscular rigidity was general throughout the frame, the respiration violently disturbed, and accompanied with profuse perspirations; upon the thirteenth day the case terminated fatally.

The subject, being a thorough-bred animal, and remarkably clean limbed, I regarded it as a rare and fitting opportunity for a minute dissection of the nervous tissues of the injured limb; and this I prosecuted most carefully and patiently to the extent that the scalpel and naked eye could aid me throughout the whole nervous structure of the extremity, but could find nothing abnormal. When about to quit the dissecting-board in disappointment, it struck me that I would lay open all the vascular trunks,—arteries, and veins; and I immediately began with *the external pastern artery. This, to my surprise, I found plugged, to the extent of an inch and a half, with a tough fibrinous deposit of a pale straw colour, firmly adherent to the lining membrane of the vessel. The artery was completely impervious, there being no channel left in the centre of the plug. Upon laying open the corresponding artery over the inside of the pastern joint, the abnormal deposit was precisely the same, but the obstruction occupied a greater length.* These two arteries unite and form a single trunk above the pastern joint, and there the vessel was intact and perfectly pervious. I found on dissection, that where the scooping of the bone by

the wheel occurred, the extensor tendon, which is in close contiguity with the bone, lost a few shreds from the same violence—the tendon exhibiting a small rough notch.

Second Case.—About two years subsequently to the occurrence of the above case, a very valuable blood carriage horse, the property of Mr. Joshua East, the eminent Jobmaster, met with the following accident: the animal was in high condition in a gentleman's job at New Cross. He got cast in his stall, and in his struggle broke the iron grating of the drain with his hind foot, which suffered severe contusion, with laceration of the integuments of the coronet, and slight ligamentous exposure. The lameness was considerable, and the pain acute, and in this state he was unfortunately led up to London.

I was called in immediately, but the seven miles' journey to Lamb's Conduit Street, had added so great a shock to the system, that the case was rendered unmanageable, and all my various soothing applications were set at defiance. Symptomatic fever increased daily, accompanied with almost perpetual sweating from intensity of pain in the injured limb, until tetanic symptoms suddenly appeared about the tenth day. The jaws soon became immovable, and upon the head being raised, the eye was completely hidden by the membrana nictitans. The animal died within twenty-four hours of this attack of locked-jaw.

Post-mortem Examination.—The tumefaction of the limb very moderate; the coronary ligament was bare at the inner front of the coronet, just above the hoof, for about an inch in length, and half an inch in width; the capsular ligament was quite entire, not having been penetrated. Upon opening the coffin-joint there was a complete absence of synovia, and the synovial membrane appeared in the highest possible state of inflammation; no fluid could be found in the cavity of this large joint. I could not, by the unassisted eye, trace any disease of the nervous tissues or trunks of the injured limb.

Upon examination of the vascular trunks, arteries, and veins, from the hoof to the hock, they were found unobstructed and completely pervious throughout, *except the inner trunk of the pastern artery, which was obliterated through its whole length, from the hoof to the fetlock joint, the plug or obstructing medium was a white dense fibrinous clot firmly adherent to the lining coat of the artery.* The organization of the other coats of this artery appeared perfectly normal.

PHYSIOLOGICAL EXPERIMENTS.

LIFE OF A HORSE SUSTAINED UNDER THE DEPRIVATION OF BOTH CAROTID ARTERIES AND BOTH JUGULAR VEINS.

By the Same.

A young vigorous horse, incurably lame, was subjected to my peculiar carotid operation. The carotid artery was taken up by ligature on one side, and upon the following day the carotid of the other side was taken up in a similar manner; and, strange to say, the vital functions appeared to be but little disturbed by this outrage. The patient was well nursed and gruelled, and attended to for two or three days, when a healthy suppuration appeared from the wound, and I sincerely believe he would have recovered; but upon the third day I also took up by ligature one of his jugular veins. By this, in conjunction with the deprivation of his carotids, his respiration became disturbed and stertorous. Upon the following morning I was astonished to find that he had rallied. No hemorrhage whatever had occurred from either of the wounds, his breathing, though somewhat quick, was silent and not very laboured, and his secretions and excretions appeared to be natural. As it was decided that the horse should be destroyed on this the fifth day, it occurred to me that, for the ends of science, it was expedient that he should lose the other jugular; and accordingly I tied it also, in the early part of the morning. The breathing became laborious immediately, with an occasional cough; perspiration ensued from irritation, and the horse plunged considerably, but no hemorrhage occurred, and not a drop of blood escaped. The pulse at the heart was above 100.

I should here observe, that casting for the operations was avoided in each instance, the patient having been suspended the whole time in slings, and otherwise supported on all sides by a large wooden frame-work purposely constructed. I expected death would quickly ensue; but on the contrary, in the course of three or four hours, he became more calm, plunged less frequently, the breathing still hurried, though not quite so laborious; but the pulse at the heart was 120. At this stage I invited some friends, who saw him alive, *minus all the four great vascular trunks.* Twelve o'clock at night came, and I was sorry to find him yet alive, with all his symptoms remaining about the same, except that there were more frequent paroxysms of coughing: the pulse could not now be counted.

At about half-past twelve, in a more violent fit of coughing than heretofore, one of the carotids gave way, profuse hemorrhage followed, and the animal was dead in a few minutes.

I offer no comments upon this experiment with reference to my theory; but have introduced it merely as the record of a fact never before demonstrated, so far as I have heard or read, viz., *the possibility of so large an animal as a horse surviving for nearly twenty-four hours after the deprivation of both carotid arteries and both jugular veins.*

DIPLOMAS.

The following gentlemen, educated at the Royal Veterinary College, London, obtained their diplomas at the meeting of the Board of Examiners held 13th December, 1854.

Mr. E. Woodger, London.
„ I. Clark, Oxford.
„ I. T. W. Smith, London.
„ Js. Atcherley, Bridgnorth.
„ F. Marshall, Northampton.
„ R. W. Thomas, Clun, Salop.

VETERINARY MEDICAL ASSOCIATION.

The following were the successful Essayists of the last Session, 1853-4, with their subjects, and to them the Council awarded the "Special Thanks" of the Association, by which they rank as Honorary Fellows thereof.

Mr. E. J. King, 'On the Anatomy and Diseases of the Hock-joint.'
„ Js. Taylor, 'On Laminitis.'
„ Jos. Norris, 'The Anatomy and Diseases of the Intestines.'
„ Jos. Hubbick, 'On the Stomachs of the Ox.'
„ B. Wimbush, 'On Pneumonia in the Horse.'
„ T. Cave, 'On the Anatomy and Diseases of the Kidneys.'
, Jno. Baldock, 'On the Structure and Diseases of the Skin.

To Mr. Cave was also awarded the Prize for his 'Essay on Anæsthetic Agents, with their advantages and disadvantages in Veterinary Surgery.'

MISCELLANEA.

THE EFFECT OF CUTTING, MASHING, COOKING, AND OTHERWISE PREPARING ROOTS AS FOOD FOR ANIMALS.

THERE can be no question as to the advantages and economy of cutting roots for both sheep and cattle. These animals are furnished with only one row of incisor or cutting teeth; and however admirably these teeth are adapted for nipping off the grass, they are by no means so well constituted for dividing large roots, and indeed this cannot be done without a considerable expenditure of muscular power, which is equivalent to the expenditure of so much food.

Besides this, when turnips are fed off in the field without being cut, a considerable portion of the root is soiled and wasted, and particularly the rootlets and lower parts. The effect of leaving these fragments is injurious to the land, and tends to produce club-root in the future turnip crop. When the turnips are cut up by a proper machine, such as Gardner's turnip-cutter, the whole is consumed, no part is wasted, and the turnips are eaten by the animal with very little expenditure of labour, as the fragments are at once submitted to the molar teeth, which besides being much more powerful are placed nearer the centre of motion than the nippers, and thus can be more easily exercised. It is of course of much greater importance to cut swedes than white turnips for sheep, in consequence of their much greater solidity. Another advantage in cutting turnips for fatting sheep is that more time is afforded for eating oil-cake, or other concentrated food, as well as for rumination. Many persons prefer Gardner's turnip-cutter, for cattle as well as sheep, as being less liable to produce choking than when the slices are broad and flat. With regard, however, to mashing and cooking roots, we believe that for either oxen or sheep there is no advantage whatever, the labour and fuel is entirely lost. Trials that have been made are altogether unfavorable. Mr. Walker, of Haddington, N.B., found five oxen and heifers on steamed turnips, &c., to cost 5*l*. 19*s*. more during the period of the experiment, than the same number on food uncooked. It is indeed agreeable to the constitution, and capacious stomachs, and powerful digestive organs, of these animals, that roots should be consumed in a raw state.

There is only one animal, that is the pig, for which cook-

ing is advantageous. This animal has only one stomach, which somewhat resembles that of man, and accordingly it is advantageous to prepare the food and so assist the digestive organs. Besides which, boiled roots are more palatable to the animal, and will be partaken to a much larger extent, than if raw, so that the pig may be partially fatted on them, and much meal saved. And as roots are cheaper than meal in proportion to the nourishment contained, there is a decided advantage in using them in combination. It is unnecessary, however, to boil roots for store pigs. Although boiled roots have not been found advantageous for fatting cattle, yet when milk is the object they have been found to answer the purpose of the cowkeeper, and to produce a larger quantity of this secretion.—*Prize Essay by W. C. Spooner.*

ON THE QUANTITY OF SULPHATE OF ATROPINE REQUISITE FOR THE DILATATION OF THE PUPIL.

Amongst the narcotics which induce dilatation of the pupil, belladonna occupies the first place. Its best preparation is the sulphate of atropine, which in weak solution has no irritant effect, and is free from that mechanical action which may be objected to the extract of belladonna, while through its uniform composition, it can be applied in precisely regulated strength.

The English were the first to introduce this preparation into practice. In London it is generally used in the proportion of 4 grs. of sulphate of atropine, to an ounce of distilled water. A single drop of this, retained in contact with the cornea and conjunctiva for only a few instants, produces, in twenty to twenty-five minutes, a *complete dilatation, with immovability of the pupil.*

Such a dilatation is desirable and even necessary to obviate synechia, synizezis, prolapsus, iridis, etc., and also as preparatory to the operation for cataract, in which the pupil has so great a tendency to contract. It would also be highly advantageous, when it is wished to dilate the pupil, in order to examine the deeper seated parts, the lens, the vitreous humour, the retina, and the choridea, with the aid of the ophthalmoscope; but there is here an important counter-indication, in the marked disturbance of vision which is temporarily induced by it. Besides the intolerance of light, which annoys some, the seeing of small objects, as in reading, is rendered almost impossible for from four to eight days,

in cases where this could be accomplished readily in ordinary states of the pupil, so that most persons complain of it bitterly. In cases of amblyopia, also, the patient becomes usually less able to distinguish objects during several days; and shows unnecessary alarm lest the instillation should have injured the sight permanently, notwithstanding the forewarning, which I have never neglected, that the effect was merely of a temporary nature.

The objection, thus occasioned, led me to the inquiry, whether it was not possible to fulfil our purpose, without exposing the patient to the inconvenience of which he thus justly complains. One obvious course was, to employ weaker solutions; and yet I continued for long, like others (it may be said in excuse), to pursue the old routine, and to use in all cases the solution of gr. iv. to the ounce of water. Dr. De Ruiter ('Nederlandsch Lancet,' 1854, p. 464) had already stated, that a drop of a solution, in which was contained not more than $\frac{1}{129,600}$ of sulphate of atropine, when kept some time in contact with the eye of a dog, sufficed to produce a dilatation lasting for twenty hours. Farther experiments on dogs, have shown him that a solution with a proportion of $\frac{1}{360}$ of sulphate of atropine, induces powerful dilatation in ten to fifteen minutes, which disappears only at the end of four days; that a solution with $\frac{1}{21,600}$, five to ten minutes in contact with the eye, causes also strong dilatation, and even sometimes immovability; that a solution with $\frac{1}{129,600}$, kept five minutes in contact, gave a good dilatation at the end of an hour, which lasted eighteen hours; that with a threefold dilution, and the same time of application, a perceptible dilatation still followed, and that it was only upon a sixfold dilution, and therefore with $\frac{1}{777,600}$ that the effect became doubtful. The sensitiveness of the eye to atropine, indeed, excites astonishment, when we consider that of the single drop of the attenuated solution, which suffices to produce dilatation, probably not a fiftieth part is absorbed.—*Monthly Journal of Medical Science.*

NATURAL DEPOSIT OF SALTPETRE.

Professor W. H. Ellet, of the United States, reports that there has been discovered in Bradford county, Pennsylvania, a regular vein of Nitre, believed to be unique in its character. The nitre occurs as a solid and uncrystalline deposit in the horizontal seams of a sandstone rock, and in veins proceeding

from thence at different angles; and the rock itself, which is quite porous, is abundantly charged with the same material. The nitre itself is very pure, containing mere traces of nitrates of lime and magnesia. The sandstone in which it occurs is siliceous, containing a little carbonate of lime and a notable quantity of silicate of potash.

NEW SOURCE OF GUM ARABIC.

It is asserted that in the north of Texas, towards Arkansas, as well as in the State of New Mexico and the adjacent Indian territory, gum has been found in inexhaustible quantities, and of a character scarcely, if at all, inferior to that imported from the East. It is gathered from the Merquite tree,—a kind of acacia, abundant in that section of the country, especially in elevated and dry localities, and exudes spontaneously in a semi-fluid state from the bark of the trunk and branches, soon hardening and becoming nearly colourless by exposure. July, August, and September, are the months for collecting it, and the quantity obtained from each tree varies from an ounce to three pounds, which may be greatly increased by incisions. Even as it is, a good hand, it is said, would probably be able to collect from 10 to 20 lb. a day; thus affording employment to thousands of the wild Indians of the plains. And should it command one half the price paid for gum arabic, it will constitute a most valuable article of traffic.

WHY EPIDEMICS RAGE AT NIGHT.

It was in one night that four thousand persons perished of the plague in London. It was by night that the army of Sennacharib was destroyed. Both in England and on the continent, a large proportion of cholera cases, in its several forms, have been observed to have occurred between one and two o'clock in the morning. The danger of exposure to the night air has been a theme of physicians from time immemorial; but it is remarkable that they have never yet called in the aid of chemistry to account for the fact. It is at night that the stratum of air nearest the ground must always be the most charged with the particles of animalized matter given out from the skin, and deleterious gases, such as car-

bonic acid gas, the product of respiration, and sulphuretted hydrogen, the product of the sewers. In the day gases and various substances of all kinds rise in the air by the rarefaction of the heat. At night, when this rarefaction ceases, they fall by an increase of gravity, if imperfectly mixed with the atmosphere, while the gases evolved during the night, instead of ascending, remain at nearly the same level. It is known that carbonic acid gas, at a low temperature, partakes so nearly of the nature of a fluid, that it may be poured out of one vessel into another. It rises at the temperature at which it is exhaled from the lungs, but its tendency is towards the floor, or the bed of the sleeper, in cold and unventilated rooms. At Hamburg, the alarm of cholera at night in some parts of the city was so great that many refused to go to bed, lest they should be attacked unawares in their sleep. Sitting up they probably kept their stoves or open fires burning for the sake of warmth, and that warmth giving the expansion to any deleterious gases present, which would best promote their escape, and promote their dilution in the atmosphere, the means of safety were then unconsciously assured. At Sierra Leone, the natives have a practice in the sickly season of keeping fires constantly burning in the huts at night, assigning that the fires keep away the evil spirits, to which in their ignorance they attributed fever and ague. Latterly, Europeans have begun to adopt the same practice, and those who have tried it assert that they have now entire immunity from the tropical fevers to which they were formerly subjected. In the epidemics of the middle ages fires used to be lighted in the streets for the purification of the air; and in the plague of London, in 1685, fires in the streets were at one time kept burning incessantly, till extinguished by a violent storm of rain. Latterly trains of gunpowder have been fired, and cannon discharged for the same object; but it is obvious that these measures, although sound in principle, must necessarily, though out of doors, be on too small a scale, as measured against an ocean of atmospheric air, to produce any sensible effect. Within doors, however, the case is different. It is quite possible to heat a room sufficiently to produce a rarefaction and consequent dilution of any malignant gases it may contain, and it is of course the air of the room, and that alone, at night, which comes in contact with the lungs of the person sleeping.—*Westminster Review.*

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Communications and Cases.

BIOGRAPHY OF THE LATE MR. WM. PERCIVALL.

"Whether we smile or weep,
Time wings his flight:
Days, hours, they never creep;
Life speeds like light."

The subject of this memoir, Mr. William Percivall, M.R.C.V.S. and M.R.C.S., was son of the late Mr. John Percivall (for many years Senior Veterinary Surgeon to the Ordnance). Mr. Percivall was born in the year 1793, and having received a classical education, he entered at the Royal Veterinary College, in the year 1809, as a resident pupil of the late Professor Sewell, and obtained his diploma from that institution in 1811.

In 1812 Mr. Percivall was appointed Veterinary Surgeon to the Royal Artillery, and at that early age, served in the Peninsular campaign, for which he received a medal. On the return of the army of occupation from France in 1815, he was placed on the retired list, with a pension which he enjoyed up to the time of his death. Finding that he had much leisure time on his hands, and thinking he should like to follow the medical profession, he commenced his studies at St. Thomas's Hospital, and in November, 1819, passed the Royal College of Surgeons. Subsequently he also became a Licentiate of the Apothecaries' Company, having some thoughts of going into practice as a surgeon. Our deceased friend, however, was afterwards induced to change his mind, and having decided upon following his original profession; he, with great assiduity, devoted much time and labour to the dissection of the lower animals, and to Veterinary subjects in general.

In the years, 1823-4, he published his first Veterinary work, entitled "Lectures on the Veterinary Art," which gave some offence to the then heads of the profession, and much was

said in opposition to the publication; but the author was of too independent a spirit to be dictated to on this head, and there arose, consequently, a coolness between parties who had previously been on the most intimate terms.

That Mr. Percivall was highly respected, and his abilities duly appreciated by the majority of the profession, there is ample proof: but that there was some jealousy evinced towards him and his works, on the part of some of its members, he was well aware; and it was this which prevented him from appearing so often amongst them as he otherwise would have done. He used to look back with pleasure upon the friendly and professional meetings of *former days;* but so many of his old friends being taken from him, he no longer felt the same interest in that society which for many years had afforded him so much pleasure, and to the conviviality of which he had, in no small degree, contributed.

In the early part of the year 1827, the Veterinary charge of two regiments was offered him by the respective colonels. One of these (the 1st Regiment of Life Guards) he accepted, succeeding the late Mr. Bloxham, in May of the above year, and entering upon those duties which, until his lamented decease, in December, 1854, he fulfilled with so much credit to himself, and advantage to the regiment.

In 1824, Mr. Percivall had the honour of presenting to the late Emperor Alexander of Russia, a copy of his "Lectures on the Veterinary Art," in return for which he received a handsome gold snuff-box, accompanied by the subjoined letter.* This is the only presentation ever offered, as a mark of approbation for zeal and professional talents, to one who was at all times ready with his purse to contribute to various testimonials to members of the profession, as well as to do justice to their merits by recording in the pages of *The Veterinarian* the particulars of such marks of distinction.

Mr. Percivall, perceiving the great want of a Veterinary periodical, as a medium of communication between the members of the profession, and being anxious that this *desideratum* should be carried out, undertook, at the earnest

* [TRANSLATION].

"LONDON, *15th Sept.*, 1824.

"SIR,—The Emperor, my august master, having deigned graciously to accept the work on 'Veterinary Medicine' with which you have done homage to His Imperial Majesty, has commanded me to present you with the accompanying box, as a mark of his benevolence and satisfaction. In acquitting myself of this duty, Sir, I seize the opportunity of offering to you the assurances of my highest consideration.

(Signed) . "LIEVEN.

"To Mr. Percivall."

solicitation of several friends, to become the Editor of a monthly journal; and in January, 1828, he brought out the first number of 'The Veterinarian.' Assuming to himself the sole Editorship, was found to give offence in another quarter, and an opposition journal very soon appeared, but which early declined for want of support. Mr. Percivall having in contemplation the bringing out of a work on the Anatomy of the Horse, a subject which had occupied much of his time and attention; and having in addition to his other duties those to attend to which belonged to his office as a Regimental Veterinary Surgeon, associated himself with his late and much-esteemed friend Mr. Youatt, who thus became co-editor of 'The Veterinarian.' For many years past, however, the management of this periodical had again devolved upon Mr. Percivall, in consequence of Mr. Youatt's death.

In 1832 he published, for the use of the pupils at the Royal Veterinary College, his 'Anatomy of the Horse:' a work they stood much in need of, and which must be said to reflect the greatest possible credit upon its author. Up to the present time this work has not been attempted to be superseded by any other of the kind, notwithstanding the various improvements and discoveries of these more enlightened days. The 'Anatomy' was followed by his 'Hippopathology, or a Systematic Treatise on the Disorders and Lameness in Horses,' in four volumes, the first of which appeared in 1834; the second in 1840; the third in 1843; and the fourth in 1850.

In 1850, his 'Lectures on the Form and Action of the Horse' were published. In 1853 a revised *part* of the 'Hippopathology' came out, on the "Diseases of the Chest and Air-Passages of the Horse;' and there is now in the press, and will shortly be presented to the public, a new and corrected edition of another *part* of the same work.

It was, likewise, the intention of our deceased friend, had life and health been spared to him, to have published, in the ensuing spring, a 'Manual or Hand-Book,' for the use of Veterinary students.

With respect to the literary and scientific attainments of Mr. Percivall, nothing, perhaps, can do greater justice to his merits as an author than the disinterested encomiums of the public press, in reviewing his different productions, as they made their appearance from time to time. Many and various, likewise, are the letters which could be produced, urging a more speedy production of the works in progress—works which will ever rank as ornaments to the profession to which he belonged. In addition to being the author of the fore-

going publications, Mr. Percivall was also the inventor of a Patent Horse-Sandal, to supply the place of a lost shoe in the hunting-field, being likewise highly useful as an infirmary shoe, in very many of the ordinary diseases to which the foot of the horse is liable, and which only requires to be better known to be more fully appreciated.

Within the last six months, the declining health of Mr. Percivall rendered it imperative upon him to seek pure air and retirement from professional occupation. From the circumstance, however, of his successor in the regiment being on foreign service, he was scarcely permitted to accomplish this desirable and all-important object ere he was seized with the sudden illness, which, in the short space of ten days, terminated a life devoted alike to his military duties and his literary labours.

In public *professional* life, for the reasons already stated, Mr. Percivall was little known. On one occasion only, though contrary to his own inclinations, did he appear as a lecturer, being free to acknowledge his inability as a public speaker. To oblige a friend, suffering from severe indisposition, he delivered, on the occasion referred to, the Introductory Lecture on Veterinary Science, at the University of London, on November 20th, 1833.

It may be permitted us to add, that the subject of this memoir was a good husband, a kind father, and a faithful friend; qualities that could not fail to endear him to the domestic circle, where his loss will be long felt and deeply deplored.

January 12, 1855.

ON THE TURF PERFORMANCES OF ACROBAT.

By W. J. Goodwin, M.R.C.S., M.R.C.V.S.

"On the last day, the victory of Acrobat (who had run so wretchedly in the Leger) over Ivan, beaten only by a head for the former race, gave rise to a scene which we never hope to see repeated; nor did the subsequent accusations and recriminations do anything towards freeing the case from the suspicion which attended the whole matter. The sooner the incidents are forgotten the better."

In a survey of the last year's racing occurrences so ably detailed in a late number of 'Bell's Life,' the above paragraph is found, and I cordially coincide with the writer of it in all but his concluding remark; but while facts are

recorded, as they have been, by the publishing of the 'Book Calendar,' I cannot agree that the incidents alluded to, can either be so readily forgotten or that the interests of the turf are to be promoted, by permitting them to pass unnoticed —they are as follows:

LIVERPOOL, July 14.

Liverpool St. Leger.

Acrobat	1
Arthur Wellesley	2
Roscomon	0
Horatio	0

5 to 1 on Acrobat: won easily by a length and a half.

YORK, Aug. 25.

Great Yorkshire Stakes.

Acrobat	1
Ivan	2
Arthur Wellesley	3

and five others.

5 to 2 on Acrobat: won by a length.

DONCASTER, Sept. 13.

The St. Leger.

Knight of St. George	1
Ivan	2
Scythian	3
Arthur Wellesley	4

Acrobat, Dervish, Boiardo, and twelve others, not placed.

6 to 4 Boiardo; 7 to 1 Acrobat; 10 to 1 Dervish: won by a head.

DONCASTER, Sept. 15.

Doncaster Stakes.

Acrobat	1
Ivan	2
Grand Inquisitor	3

Scythian, and four others, not placed

2 to 1 Ivan; 5 to 2 Acrobat: won by a length.

In tracing the performances of Acrobat, we find that at two years old he won a sweepstakes at Doncaster cleverly, and walked over for the Buckenham Stakes at Newmarket, and was consequently looked upon very favorably and backed by many speculators to win the Derby.

In the Newmarket first Spring Meeting of 1854 Acrobat won a match of 500 Guineas by twenty lengths, and he ran third, carrying 5st. 10lbs. for the Chester Cup (in which twenty-four horses ran) to Epaminondas the winner, with 4st. 10lbs. Notwithstanding the favorable *prestige* he was fairly entitled to, and without any cause being known or assigned, he was scratched for the Derby, to the loss and discomfiture of many, and his stable companion Dervish, infinitely his inferior, became first favorite for that race.

To racing men it is superfluous for me to state that Acrobat is the property of the Earl of Derby, and was trained by Mr. Jno. Scott, of Malton.

After the race on the 15th September, a scene took place which can never be effaced from the memory of those who witnessed it. The trainer was only reseued from the anger of the mobility by the strength of his pugilistic friends. This event was not, however, witnessed by the Earl of Derby, he having pre-

viously left the course. It was naturally expected that some explanation upon the extraordinary and unequal performances of such a horse, and in such hands, would have been given, to afford the sporting world some clue to the mystery of Acrobat's defeat for the St. Leger by the same horses he so successfully opposed two days after: not a syllable has transpired. Mr. Mavor was called upon to certify that Boiardo had broke down in the St. Leger, and Templeman, who rode him, wrote a letter to testify his belief that, but for the accident, the horse might have won.

It cannot be denied by the greatest enemies of the turf, that racing has been the sole means of engendering and keeping up a breed of horses in this country greatly superior to that of any other—it furnishes us with about three hundred Stallions and twelve hundred mares, of the purest blood, such as are sought after by breeders in every quarter of the globe. Our profession is, therefore anxious about its success, and it is my intention for the future to bring before my professional brethren every incident worth recording upon turf matters.

All racing events, particularly those upon which large sums of money depend, are naturally closely watched and looked upon with jealousy and suspicion. In former days we had noblemen who kept studs and racehorses, and who watched their career with interest, without making them the medium of gambling transactions. Unfortunately now, scarcely a single stable can be said to be without influences that are inimical to the purity of our best horses' performances—and it would have been far more agreeable to me to have recorded the straightforward and successful career of the best horse in the kingdom, than to have to advert to the crooked and yet unexplained doings of an Acrobat.

HAMPTON COURT.

[Without professing to be well versed in turf matters, which since the days of "Running-Rein" have not stood in a very enviable position, we readily give place to this communication, coming as it does from one who occupies amongst us a very prominent position, and who may be regarded as an authority of the first order upon matters relating to the turf. We could have wished with him that an explanation had long since been given to the public of this mysterious affair.]

REMINISCENCES OF COUNTRY PRACTICE.

By Agricola.

WOUND PENETRATING THE FETLOCK JOINT.

A hunter, while being ridden to the hounds by the Master of the Hunt, met with an accident by striking the pastern of the off fore leg against a sharp flint. The wound of the integument was about three inches long, passing obliquely across the front of the fetlock-joint, dividing partly the extensor tendon, and penetrating the capsular ligament of the articulation. The animal, being completely disabled for the field, was led home, a distance of about four miles, and which he accomplished with much difficulty.

On visiting the patient, I resolved, as the incision of the integument was cleanly cut, to give trial to sutures and slight compression, to bring about, if possible, the quick healing of the wound. Accordingly, after freeing the limb from dirt, and all extraneous matter, by ablutions with tepid water, the edges of the wound were brought neatly together with pins and the twisted suture. A pledget of lint saturated with Tinct. Myrrh. Comp. was applied, being secured by a light roller bandage, and over this was placed a moderate-sized linseed poultice. The patient was tied to the "rack-chains" to prevent his lying down, and directions were given that he should be kept as quiet as possible. His corn was removed, and a mash diet substituted.

On the following morning the animal was suffering so much pain of the limb, that he was prevented putting the foot to the ground—some irritative fever had also set in. A light rest-shoe was placed upon the foot with only nails sufficient to secure its hold. The poultice was removed, the bandage *loosened*, and continued fomentations ordered. Some blood was also abstracted from the jugular, and an aperient given.

Third day. The symptoms of suffering are about the same. Synovia is escaping through the bandage. Take away all the dressings. Apply Liq. Plumbi Acet. to the wound with a pledget of lint. Gently fix this with a linen bandage, and keep the limb wet with a diluted solution of the same compound.

Fourth day. Bowels responding to the medicine. Less constitutional disturbance, but still a good deal of local pain. Give Potas. Nitras, ʒij. in a mash. Do not disturb the wound, but continue the use of the lead wash.

Eighth day. The treatment having been continued to this time with a gradual diminution of the symptoms, I ventured

to remove the bandage and dressings. The upper portion of the wound had adhered, but from the lower part a mixed discharge of pus and synovia was escaping. Two of the sutures, having lost their chief hold, were taken away. Granulations were forming, and the general condition of the parts satisfactory. Dress and bandage as before.

Twelfth day. Since the last report, the improvement has been great. The dressing being removed, showed that the opening into the joint was nearly closed by granulations. Apply Tinct. Myrrh. Comp., and a light bandage.

Fourteenth day. The synovia being stopped and the wound all but healed, the horse was removed for the first time from his stall. The slight exertion, however, of being led into the yard gave so much pain that I deemed it advisable to withdraw more blood, repeat the aperient, and have the whole joint immersed in a linseed poultice.

Eighteenth day. Lameness very much abated. Bears fairly on the foot. Apply a liquid blister to the joint.

Twenty-fifth day. Convalescent. Well enough to take moderate exercise.

In somewhat less than three weeks from this date, my patient was able to resume work, being used chiefly as a "cover hack," which duty he performed without any failure.

I have been induced to record this case, because it was the first treated by me on the plan above described. It occurred in Sept. 1831.

ON THE USE OF THE MYLABRIS CICHORII.

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

Dear Sir.—A few months ago, you were kind enough to send to me, requesting my trial of them, some of the blistering beetles, "*Mylabris Cichorii.*" I have not only used all you forwarded, but so pleased have I been with their action that now the Ol. Mylabris forms my chief vesicant. I have employed it extensively, and I have no doubt of its ultimately becoming more generally used than the *Ol. Cantharidis vesicatoriæ.* The action of the Mylabris is energetic and decisive, and the preparation in the Ol. Olivæ forms a neater compound than the ordinary blister oil. Nor are these the only advantages these vesicants offer. Their cheapness compared with Cantharides is a consideration where blisters are largely employed, and in cases where Cantharides, by their action on the kidneys are inadmissible—the Mylabris, whose effect on

these organs is neutral, are at once entitled to favour. The proportions I have adopted, are, one part of Mylabris to thirty of oil. The beetles are finely powdered, and in every other way they are treated as is usual in the preparation of the Ol. Cantharidis. I subjoin the comparative cost of each. It must be remembered that there is considerable absorption of the oil in the Cantharides compound, on account of the bulk of flies used; this therefore is a loss which, estimated at eight ounces, in the annexed formulæ, further recommends to our notice the *Mylabris Cichorii*.

	s.	*d.*
Ol. Olivæ (sec.), Ovj . . .	4	0
Mylabris Cic., ʒiv	2	4
	6	4

	s.	*d.*
Ol. Olivæ (sec.), Ovj . . .	4	0
Cantharis P., ʒxv	6	0
	10	0

I am, my dear sir,

Very faithfully yours.

To Professor Morton.

[Mr. T. Hurford to whom the profession is indebted for the introduction of this blistering beetle to their notice, has stated, as one of its advantages, that it does not sensibly affect the kidneys when applied externally, from which the absence of *Cantharidin* might be inferred; but this is not the case, the reason probably is, the smallness of the quantity of the agent required to act as a vesicant; and hence, as expressed by Mr. Cartledge, its influence on these organs is "neutral."

Pereira, in his work on the 'Elements of Materia Medica:' says, that

"1. *Cantharidin* (*Vesicatorin; Cantharides-Camphor*) — has been found in *Cantharides vesicatoria*, *Lytta vittata*, *Mylabris Cichorii*, and other vesicating insects. Probably it exists in all the blistering beetles. To procure it, concentrate an alcoholic tincture (prepared by percolation) and set aside: the cantharidin slowly crystallizes. It is purified by washing with cold alcohol, and boiling with alcohol and animal charcoal. Its properties are as follows:—It crystallizes in the form of micaceous plates, which are fusible, forming a yellow oil, which by a stronger heat is vaporizable, forming white vapours: these subsequently condense into acicular crystals of cantharidin. Dana regards it as an organic alkali, but without any just grounds; for it will not restore the blue colour of litmus paper reddened by an acid. Gmelin's opinion, that it is a solid volatile oil, seems to be correct. When isolated, it is not soluble in water, but becomes so by

combination with the other constituents of cantharides; the yellow matter probably being the principal agent in rendering it so. This, then, is the reason why an aqueous infusion of the insects contains cantharidin in solution. Cold spirit, digested on cantharides, extracts cantharidin; which it can only do by the agency of some of the other principles of the flies. It is easily soluble in ether, oils (volatile and fixed), and hot spirit of wine; and from the latter it separates as the liquid cools. Concentrated boiling sulphuric acid dissolves cantharidin; the solution is slightly brown; when diluted with water, it deposits small needle-like crystals of cantharidin. Boiling nitric and muriatic acids dissolve it without changing colour; the solutions, by cooling, deposit it. Cantharidin is dissolved by potash and soda; but when concentrated acetic acid is added to the solution, the cantharidin is precipitated. Ammonia is without action on it. According to Regnaud it consists of *carbon*, 61·68; *hydrogen*, 6·04; and *oxygen*, 32 28.

"2. *Volatile Odorous Oil?*—Orfila asserts, that a volatile odorous oil is one of the constituents of the insects. The distilled water of cantharides is strongly odorous and milky; and its vapour affects the eyes and kidneys like cantharides.

"The active and odorous principles of cantharides reside principally in the sexual organs of the animals. Both Farines and Zier tell us, that the soft contain more active matter than the hard parts. It appears, also, that the posterior is much more acrid than the anterior portion of the body; and Zier says the ovaries are particularly rich in this active matter. If so, it is evident we ought to prefer large female to male insects. It is a well-known fact, that the odour of these animals becomes much more powerful at the season of copulation than at other periods; and that persons sitting under the trees, in which these insects are, at this season more particularly, are very apt to be attacked with ophthalmia and ardor urinæ.

Bretonneau, in his experiments on Animals, has not found any marked aphrodisiac effect produced by cantharidin. He found that it rendered the circulation slower, and caused fatal lethargy.]

SPASM OF THE MUSCLES OF THE HIND-LIMB.

By R. S. Blake, M.R.C.V.S.

On the 22nd of December last, I was requested to attend a black mare, in foal, which had become lame while in the

stable during the previous night. I found her standing as well on the affected leg (which was the off behind) as on the other, with the exception that the limb appeared to be bent outwards from the stifle. On attempting to move her, the leg was violently extended backwards, nor could she by any effort bring it again forwards, or alter its position. I at first thought that the patella was dislocated, but on manipulation of the limb I found that such was not the case. The muscles at the back of the thigh were quite rigid. The mare had knocked the skin off her head during the night, I suppose in her endeavours to get up. Her pulse was normal, and there was no swelling or heat of the limb, the leading symptoms being like those seen in dislocation of the patella, in so far as loss of action is concerned. I had her removed to a loose stall, which was effected with much difficulty. A brisk purge was administered, and the thigh and stifle well fomented with tepid water, and afterwards bathed with Lin. Camphoræ Comp. well rubbed in. On the following morning, strange to say, the mare was as sound as ever, and has remained so to this time. I consider this to have been a case of cramp of the posterior muscles of the thigh, and one very rarely seen in practice.

CHRONIC OBSTRUCTION TO THE RESPIRATION. —TRACHEOTOMY.

By the Same.

In April last, I was sent for to attend a black cart horse, the property of Mr. M. Small, Shapwick, which had been the subject of influenza some time before. In consequence of being neglected, when suffering from this disease, he had become so bad a roarer that he could be heard for a very considerable distance. In fact, he was totally incapable of work, and almost of any exertion. I considered that it was hopeless to expect relief from anything save tracheotomy, which operation I advised the owner to have performed without further loss of time. This being acceded to, I inserted a tube of rather a larger size than is usually employed in these cases. On the following day the horse appeared so well that his owner put him to work, and he has continued working on the farm up to the present time. He is now very fat, has a beautiful skin, and performs the same amount of labour as the other horses. I should remark that, about a fortnight

after inserting the tube into the windpipe, he got it out in the night, and by the morning the orifice was so much closed that I was obliged to cut away the granulating edges before it could be replaced. The tube is cleaned once a day, and the wound in neck occasionally touched with Sol. Cupr. Sulph. I ought to remark that I have had a leather pad placed under the shield to keep it from abrading the neck.

INFLUENZA FOLLOWED BY PURULENT NASAL GLEET.

By the Same.

A black carriage horse, the property of Mr. C. Parkinson, surgeon, Wimborne, was placed under my care on the 15th of June last, suffering from influenza. He had a most dejected appearance; the skin had lost its pliancy, "sticking tight," as it is said to the ribs; the bowels were constipated, pulse quick and weak, throat sore, with the other symptoms of this disease which are usually present. He was treated till the 28th, by which time he was sufficiently recovered to be dismissed from my care. I left orders, however, for him to take Ferri Sulph. ʒij daily.

On the 18th of July I was asked if he might be put to work; but before deciding upon this I called to see him, when I was much surprised at finding an unhealthy discharge from the left nostril, accompanied with considerable tumefaction of the submaxillary glands, which were hard and immovable. I was inclined to consider it a suspicious case of glanders, and stated my fears to the owner. The discharge stuck about the opening of the nostril, and was at times streaked with blood. I examined, with Dr. Parkinson, the discharge under a microscope, and found that it contained numerous pus-globules.

On the 14th, three pustules were noticed on the septum nasi. They were hard to the feel, and I thought they were tubercular; however, I persisted in the treatment, and, am glad to say, with ultimate success. The horse is now perfectly well, and has been so since the end of July, when I last attended him. There is not the slightest discharge, and he is in better condition than he ever was.

I should remark that the Ferri Sulph. was not given as I ordered, and that when I discontinued my treatment in June the animal was removed from a spacious and airy coach-house

to his own box, under which was a cesspool. I never smelt anything worse than the effluvium from this, and I have no doubt it mainly contributed to bring about the state of things I have described. The treatment consisted in the administration of Cupr. Sulph. in solution varying from ʒij to ʒv, alternated with ʒj doses of Quinine and vegetable tonics: astringent injections up the nostril, inhalation of chlorine gas, and attendance to the evacuations were likewise enjoined.

WIMBORNE, *Jan.* 1, 1855.

ENLARGEMENT OF THE SPLEEN LEADING TO RUPTURE OF THE DIAPHRAGM.

By HOWELL CRAFTS, M.R.C.V.S.

On the 14th of December last, at 1.30 p.m., my attendance was requested by a friend, residing in this town, in consequence of a nag-horse, aged six years, being suddenly attacked with what appeared to him to be ordinary colic. My assistant attended immediately, and recognizing little more than the common symptoms of colic, administered an antispasmodic draught, but without any good effect. Two hours afterwards I saw the animal, but could not at first diagnose the case to my satisfaction, although I was perfectly convinced that it was not one of spasmodic colic. The horse had been led about for some time, but could scarcely be kept upon his legs without being closely followed up with the whip. I ordered that he should at once be placed in a loose box and left to follow the bent of his inclination. No sooner was he allowed to be free than he lay down, turned upon his back, and with his legs resting against the boarding, remained in that position until he died. His death took place without a struggle; and in about three hours from the commencement of his illness. I concluded, more from the way in which he died than from the symptoms, that a lesion of some important organ existed.

On opening the carcase the following morning, I found that an extensive laceration of the diaphragm had taken place; and, to my surprise, the liver was so reduced in size as scarcely to be recognized, while the spleen was enormously enlarged, weighing no less than *twenty-two pounds and a half avoirdupois.* The diminished size of the liver, I opine, was produced by the pressure of the spleen upon it.

During the last few months of the animal's life, in spite of

all attempts to get him into condition, he remained very low of flesh, but the belly was throughout so pendulous as to resemble a mare advanced in pregnancy. I may also add, that the animal was for years an habitual wind-sucker.

Blandford, Dorset.

CASE OF MELANOSIS.

By Andrew Cunningham, V.S.

A grey horse belonging to Mr. Alexander R——, farmer, was sent to me, in August last, for examination, owing to the existence of a large swelling which involved the sheath, scrotum, inside of the thigh, and posterior portion of the abdominal muscles. I learned that this enlargement of these parts had been noticed as gradually coming on for several weeks. I pronounced it to be a melanotic tumour; and gave my opinion that nothing short of an operation was of any avail in cases of melanosis, but that this could not be undertaken with any prospect of success in such an instance as the present. The owner fully coincided with this opinion, and as the horse was quite able to do his work, he determined to keep him on. I saw the horse repeatedly afterwards, and observed the tumour to be enlarging, and the animal to be falling away in condition. I also remarked that he inclined to one side in his walk. He gradually continued to get worse until the month of November, when I was again requested to visit him.

On arriving, I found him sitting on his haunches, like a dog, seemingly healthy, but paralysed in the hind extremities, especially the left. We attempted to put him on his feet, but, as was to be expected, failed in doing this. I could but consider it a hopeless case, and declined the adoption of any treatment. He was quite unable to void his urine, and had but little power over the rectum. I feared from these symptoms that there were other tumours pressing on the spine or some of the nerves coming from it. Two days afterwards, I was informed of his death, and was requested to make a *post-mortem* examination. I found a tumour attached to the inner surface of the ensiform cartilage, and weighing no less than four pounds; another adhering to the left kidney weighing ten pounds; a third connected to the inferior surfaces and transverse processes of the lumbar vertebræ, also on the left side, weighing six pounds. A fourth weighing seven pounds involved the bodies, superior surfaces, and transverse processes, of the same vertebræ, firmly ad-

hering to the fibres of the longissimus dorsi muscle. On cutting through the spinal chord at this place, the melanotic matter was found to have extended into the foramina of the vertebræ, which I make no doubt was the cause of the paralysis, and also of the animal's walking on one side. The tumour taken from the inside of the thigh and adjacent parts, weighed upwards of thirty pounds, thus making in all fifty-seven pounds of melanotic deposit. Several of the tumours had some attachment with the peritoneum, and I observed here and there some large vessels leading from the one to the other, a thing I never remember to have seen before.

[A similar case to the preceding has just occurred in the College Infirmary, the particulars of which have been communicated to us by Assistant-Professor Varnell.

In the year 1845, Professor Spooner removed from the outer and inferior part of each parotid gland, of a grey mare, an ovoid tumour, about the size of a cricket-ball, and which proved to be of a melanotic character. The wounds healed readily, and without any unfavorable symptoms. The mare was early removed from the Infirmary, and remained in the possession of her owner up to the time of her readmission, at the beginning of this year.

During this interval numerous tumours made their appearance on the surface of the body generally; and although the mare was in fair condition, and apparently free from suffering, the owner, taking into consideration the nature of the disease, and the age of the animal, determined on having her destroyed, and the body given to the College for dissection. The *post-mortem* examination showed that both the parotid glands, were again much enlarged, and studded throughout with melanotic matter, which had increased at the expense of their glandular structure. The submaxillary and sublingual glands were also in a similar state.

Large melanotic deposits were found in the thoracic cavity, involving the bronchial *lymphatic* glands in particular. In the abdomen the mesenteric glands, renal capsules, posterior aorta, spleen, omenta, and the coats of the intestines were implicated. The pelvic cavity also had large tumours of the same kind attached to its general surface in which the viscera were embedded.

The liver was of its usual size, and smooth upon its surface, but of a remarkably black colour, as seen through its capsule. When cut into, the melanotic matter was found to be *diffused throughout* its entire structure, imparting everywhere to the fingers and the scalpel a deep black dye. The subcutaneous

tissue, and also the muscles of the whole body, were more or less the seat of the deposit as was the cranial cavity, spinal canal, and even the cancellated structure of many of the bones. The *substance* of the petrous temporal bone was likewise blackened by the same matter.

Notwithstanding that scarcely an organ of the entire frame could be considered as free from melanosis, no appearance of cancerous or other malignant changes of the tissues could be detected in association with the pigmentous deposit.]

ENLARGEMENT OF THE SPLEEN.

By the Same.

A horse, belonging to A. C., Esq., having suddenly died while at pasture, I was requested to institute a *post-mortem* examination. On making an incision into the abdomen, a great quantity of blood rushed out, rendering it evident that a rupture of some viscus had taken place. On further examination, a large purple-coloured mass, having more the appearance of the animal's lungs when engorged with blood, than anything else I could compare it to, presented itself. On turning it over, I observed the intestines to be swimming in blood, and all the rest of the viscera considerably displaced, but yet seemingly in a healthy state. To my surprise, I found this huge mass to be the spleen, greatly enlarged. Further research showed that a rupture of one of the splenic vessels had taken place, thus causing the fatal hæmorrhage.

On removing the spleen from the body, it was found to weigh *ninety-two pounds*, and this after being carried in a cart some miles distant before it was weighed, which necessarily was attended with a loss of much blood on the way.

On making inquiry respecting the previous state of the horse's health, I was informed that he was quite able to do his work, to within a few days of his death; that he was first used as a carriage horse, but latterly had been at work on the farm. He was never remembered to have had any illness. He had been in the gentleman's possession for upwards of thirty years, and the only thing ever observed about him was that he used occasionally to breathe very quickly. He likewise never did well while at grass. The state of the breathing, I think, may easily be accounted for by the great size of the spleen producing pressure upon the diaphragm.

Inverkeillor, Forfarshire.

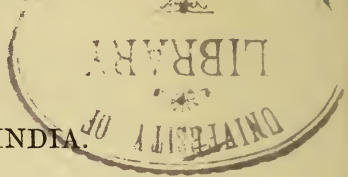
CASE OF CHOKING IN A MARE.

By J. Brown, V.S.

On Friday evening, Nov. 24, 1854, a grey mare, the property of a cowkeeper, became choked with grains and hay. She was a very voracious feeder, and the owner had incautiously put some hay into the rack, and some grains into the manger at the same time. The mare first pulled out some of the hay from the rack, but before she had swallowed it she took a mouthful of the grains, which mixing with the hay formed a pellet too large for her to deglutate. The owner, by the advice of a bystander, thrust the large end of a cart whip violently down her throat several times, which not removing the obstruction, she was brought to me. There was now a great swelling of the neck and throat, accompanied with much difficulty of breathing, and frequent eructations. I first endeavoured to remove the obstruction by passing my hand as far back into the mouth as I could, but not succeeding, I introduced a small probang down the œsophagus, and was enabled to get rid of the offending mass. I afterwards horned down some warm water, and ordered the throat and neck to be fomented, and the animal to be kept from food for a time, and then to be fed only on soft or succulent matters. The next day all went on satisfactorily until the evening, when the owner, being pleased with seeing her doing so well, thought he would indulge her with a little hay and chaff, contrary to my orders. At eight o'clock on the following morning (Sunday) I was again requested to see the patient. There was now so much swelling of the head and throat that she could not swallow anything, and scarcely breathe. I thought it a hopeless case, believing that great injury must have been done to the œsophagus from the violence which had been used. I ordered the parts, however, to be well fomented with warm water, and afterwards a large poultice to be applied over the neck and throat. At two o'clock I again saw her; she was lying down, and seemed easier, and breathed with less difficulty. At six o'clock in the evening I was once more sent for; the swelling had greatly increased, and was very hard, and the breathing much more difficult. I proceeded immediately to open the trachea, which gave her almost instantaneous relief. Subsequently a tube was placed in the opening, and fastened round the neck with a tape to prevent its ejection. The mare being so much better I left for the night. From this time she went on improving

every day; a large abscess, however, formed under the jaws, which discharged a great quantity of very offensive pus. The abscess gradually healed up, as also the wound in the throat. The mare has since gone on well.

London; *Jan.* 13, 1855.



CASTRATION IN INDIA.

For previous Official Orders, *vide* '*Veterinarian*,' for September, 1854, p. 520—525.

(Copy.) No. 952 of 1854.

To the Officer Commanding 1st Regiment of Light Cavalry (Lancers.)

Camp, Neemuch: *September* 27, 1854.

Sir,—I am directed to forward for your information the annexed copy of a letter, No. 4042, of the 14th inst., from the acting Deputy-Adjutant-General of the Army.

I have the honour, &c., &c., &c.

(Signed) G. A. Leekie, Captain,
Line Adjutant.

No. 4042. (Circular.)

Adjutant-General's Office, Head Quarters, Poonah; *September* 14, 1854.

Sir,—With reference to the circular letter from this Department, No. 1339, dated 16th March last, I am directed by the Commander-in-Chief to intimate that, from the reports received up to this date, His Excellency is satisfied that the system of depriving horses of the powers of generation which obtains in the Poonah Irregular Horse is attended with more suffering to the animal than the ordinary method of castration, without affording any advantages over the latter, his Lordship, therefore, does not wish the experiment of the former system to be carried any further.

I have, &c., &c., &c.,

(Signed) S. Hale, Lieutenant-Colonel,
Acting Deputy-Adjutant-General of the Army.

To the Brigadier Commanding R.F.F., Mussurabad.

(True copy.) (Signed) E. Green, Captain,
Major of Brigade, R.F.F.

(Signed) G. A. Leekie, Captain,
Line Adjutant.

[On referring to the previous orders respecting castration in India, our readers will see with pleasure that by the one which we now print a stop is put to the cruel practice of rendering horses impotent by rough manipulations of the spermatic vessels and testes, to break down their structure, as practised by the natives.

We congratulate the veterinary surgeons who have successfully resisted the attempted introduction of this method of operating upon the horses belonging to the Indian army.]

Extracts from British and Foreign Journals.

INFLAMMATION OF THE OS CORONÆ, SUCCEEDED BY ULCERATION OF THE BONE TISSUE AND OF THE ARTICULAR CARTILAGE.

"The subject, an omnibus horse, aged nine years, came in October, 1853, under the care of Messrs. Woodger and Broad, veterinary surgeons, Paddington, for a somewhat obscure lameness of the off hind leg. The general symptoms showed the seat of the disease to be the pastern joint, and it was supposed to depend upon ordinary inflammation of the periosteum and surrounding ligamentous structures. The treatment adopted, conjoined with perfect rest, was attended with a marked benefit. In December, the horse was taken from the straw-yard in which he had been placed, the lameness being at this time very slight. Some thickening of the pastern joint was, however, still existing, and as this was supposed to depend on osseous deposition, counter-irritation was had recourse to, and further rest enjoined.—On January 24, 1854, the animal was so free from lameness that it was thought he would be fit to resume his work in a few days. On the evening of this day, however, he was suddenly attacked with extreme pain and lameness, which prevented his placing the least weight upon the limb. Active inflammation supervened, and collections of pus took place in the ligamentous and tendinous connexions of the joint. The pus quickly gained an external outlet, and sinuses leading to the bone were formed. The treatment adopted having failed to afford relief, the animal was destroyed on the 6th of February, twelve days after the recurrence of the severe lameness.

"The *post-mortem* examination showed partial destruction of the cartilage on the outer half of the superior articular surface of the os coronæ. A circular-shaped opening existed in this part, which not only penetrated the cartilage, but extended to the depth of nearly half-an-inch into the substance of the bone, and of a size sufficient to contain a large pea. The cartilage surrounding the opening had a thickened edge, was of a softer consistence than natural, and of a whiter colour. This thickened edge overhung, to a slight extent, the cavity beneath.

A section of the bone showed that the disease had originally begun in its tissue, and was, doubtless, of a simple inflammatory nature at the commencement. Ulceration having followed the inflammatory action, led gradually to the hollowing out of the bone and the destruction of the articular cartilage; this commencing upon its attached or under surface. The cartilage being thus undermined and thinned at the same time, it is probable that the sudden increase of the symptoms which took place on the 24th of January, depended on the giving way of the layer of cartilage which, up to this date, had bridged over the cavity in the bone." (*Transactions of the Pathological Society of London.*)

NEW REGULATION RESPECTING THE PURCHASE OF CAVALRY HORSES.

CAVALRY BRIGADE OFFICE, *October* 25, 1854.

"The Inspecting-General of Cavalry issues the following instructions by desire of the General Commanding-in-Chief, to officers commanding Cavalry Regiments and depots, for their future guidance in purchasing re-mounts for the service:—

No three-year-old horse is for the present to be purchased.

Officers commanding are to use their utmost exertions in procuring four-year-old horses, at the present price, £26 5*s*.

With a view to rendering the augmentation recently authorised to the Cavalry Regiments, serving at home and in Turkey (but especially those in Turkey), available for service with the least possible delay, the Secretary at War has sanctioned seasoned horses being purchased at the following rates:

Five and six year olds .....£32.
Seven and eight year olds .....£40.

These horses must be in good condition, and no horse pur-

chased at these prices that is not at once fit to be put into the ranks, as regards condition and stamina.

As few horses, of the class from which cavalry horses are purchased, arrive at the age of seven or eight years without being blemished, or showing some defect, veterinary surgeons are to be instructed not to reject horses for defects which will not interfere with a horse during his work, and to bear in mind that the object to be obtained is to procure a constitutionally sound horse, fit for the immediate service for which he is required. You will report to me the first of every month what progress you have made in the last month in procuring horses, specifying their ages, for the information of the General Commanding-in-Chief.

Sir Jos. Thackwell,
Lieut.-Gen., Inspecting-General of Cavalry."

[ADVERTISEMENT, *Dec.*, 1854.]

"MILITARY HORSES WANTED. — Capt. Goold Adams, who has been appointed by Government to purchase Horses for the Metropolitan direct, attends daily at Rea's Central Repository for that purpose. Ages, 5 to 8 years, 15-2 to 16 hands high, price £25 to £50. Horses should be sent in one day prior to inspection.

St. George's-road, near Elephant and Castle, London, one mile from the Bridges."

Upon this subject, we have been favoured with the following observations by Mr. Goodwin. The order relative to the purchase of cavalry horses has *already* been altered, it being evident that whoever had concocted it had made a great mistake, in putting down horses at five to six years old at £32, and seven and eight years old, *without blemishes*, at £40. The price is now £40 a head all sound, and such is the increased demand, both for this country and France; that it will be attended with some difficulty to find the proper sort of animals within the given time. As to the purchase of 5000 horses, and 500 mules, being completed by the spring, such is out of the question; and if it were possible to find the horses, there would be no chance of obtaining men ready for service to make use of them. In a future number I shall have some observations to offer upon the method of buying horses for the cavalry, and all the *et ceteras* connected with it.

[We add to these remarks the following extracts from the 'Sporting Review.' The scheme of the writer with reference to the sending of horses which are especially cal-

culated for Cavalry purposes to our Agricultural Shows is one which we think would too much interfere with the fundamental principles of these exhibitions. Much doubtless may be said in support of either view of the matter. We cannot, however, on this occasion, enter further upon this subject, and will therefore content ourselves by giving the extract in question.]

"The difficulty experienced in procuring horses to mount our cavalry has invoked serious consideration in various quarters. In the September number of this publication I referred to it, at the same time proposing an augmentation of price. That plan has been adopted upon a sliding scale. Thirty-two pounds is now authorised to be given for five years old horses, and forty pounds for six, seven, and eight years old. Whether this will be found quite a judicious arrangement the sequel will prove. It would be more in conformity with practical experience of the value of working horses, if the maximum price had been accorded to five, six, and seven-year-olds, and a reduction made in the price for eight-year-olds; but such is the imperative demand for effective animals, that prices will not, it is expected, be very scrupulously adhered to, providing the qualifications are equivalent. The demand is enhanced by commissioners from the French Government, who are willing to advance upon our regulation prices. I have recently given the subject much attention, and, with the most profound respect, will offer a suggestion to encourage farmers to breed horses for the especial purpose of mounting the troops. The proposal is, that premiums be given by Government for the best horses exhibited at the meetings of the Royal Agricultural Society of England, and at other influential agricultural meetings, on the following terms:—Fifty pounds for the best horse calculated for the use of the regiments of Life Guards; thirty pounds for the best horse calculated for the Artillery and Dragoon regiments; and twenty pounds for the best horse calculated for the use of the light cavalry regiments; with the proviso that any horse entered for competition should be subject to the claim of Government at the regulation price of the class for which he is adapted; and the eligibility of the horse for the class in which his owner proposes to enter to be determined by the Government inspector, giving the owner the option of withdrawing from competition in the event of his not approving the class which may be assigned to his horse. This would be a means of bringing a great number of horses together, and save great expense of officers of regiments and agents attending fairs in

search of them—an expense nearly equivalent to the amount proposed to be given in premium."

[Since the above was sent to press, we have met with the following letter in 'The Times,' which from its practical bearing on this question we reprint from the Journal:]

REMOUNT HORSES.

Sir,—Having seen that a circular has been issued from the Horse Guards to recruiting parties, requesting that they do not enlist lads so young, as they most probably will be required for immediate service, and since it has come under my experience that persons employed in buying horses for the army are buying them as young as four years old, I beg leave, through the medium of your publication, to give a corresponding hint to head-quarters, with due submission, that the contingencies of health incidental to horses of that age, together with imperfect development, should be a *desideratum* equally regarded with the objections raised to the suitableness of the immature man. The truth of my assertion may be established at a time when the case will be without a remedy. Older and more seasoned horses are more calculated to contend with continued fatigue, &c., in immediate service, than those so young.

I remain, sir, your obedient servant,

A Veterinary Surgeon.]

London: *Jan.* 18, 1855.

ON THE MANAGEMENT OF YOUNG HORSES.

Sir,—The foals having been provided for through the first winter, towards the middle of May it will be expedient to make arrangements for their summer's keep. This must to a certain extent be regulated by circumstances. If the breeder is provided with convenient paddocks, they are by far the most desirable situations; and whether they will produce a sufficiency of herbage must depend upon their size and the condition of the land. Those which are bare of keep are by far preferable, as the requirements of the inmates may be always supplied with hay, lucerne, vetches, or clover; and an occasional change of food has already been recommended. The constitution of each animal should be consulted, and likewise the purposes for which it may be calculated. Some will require a moderate allowance of oats throughout the summer months. The benefit which young horses will ob-

tain from corn will be more than equivalent to the expense, especially those which are promising to make hunters of the first class; but for hacks and carriage horses it can only be necessary under particular circumstances. It is of the utmost importance to watch the progress of these animals; for it is as necessary to guard against an over accumulation of fat as the other extreme. The month of May or June is the most seasonable period for performing the operation devised to prevent colts from propagating their species. There is a phenomenon attendant upon this, regarding the cause of which I never could obtain any satisfactory explanation; nevertheless, general observation confirms the fact, that colts which have been castrated at a season of the year when their coats are long and rough, are never fine during the winter, whereas those which have been operated upon soon after they have shed their coats, almost invariably look well. This should not be delayed too late, from causes which it is not necessary to enumerate, and likewise that the patients may recover before the hot weather sets in.

Many persons are of opinion that it is unnecessary to administer physic to foals and young horses; but a few observations will dispel that notion. After a foal has been weaned and deprived of its mother's milk, the liver very frequently assumes an inactive sluggish disposition. The coat indicates this by its harsh unhealthy appearance, and the animal gives evidence of being what is termed hidebound. Very often the legs will fill from an irregularity of the circulation, consequent upon the state of the liver. In such cases, one or two mild doses of aloes become indispensable. Diuretics are of no use under these circumstances, their action being on the kidneys and urinary passages, which are not the seat of disorder. For foals recently weaned, one drachm of aloes, with an equal portion of ginger and of soap, is the proper quantity; but, if that does not relax the bowels sufficiently, the proportion of aloes may be increased on the second occasion. A slight dose only is required, because the aloes, being supposed to act primarily on the liver, it is merely necessary to stimulate that organ to its healthy action. The only restriction necessary in the diet is substituting bran mashes for hay during the twenty-four hours preceding the time of administering the medicine, and carefully protecting the animal from the effects of rain; otherwise, if the weather be favorable, no danger need be apprehended from the animal being at large in the paddock or field during the operation of the physic, while the exercise will assist the desired result. Foals which have been fondly treated when

with their dams, and subsequently, will not occasion much trouble in administering the ball. When they are weaned, a light head-collar or halter should be put upon their heads; and, being accustomed to that, the ball may readily be given by placing it on the end of a piece of whalebone or cane. Those foals which have been fed upon an abundance of grass are very subject to be troubled with worms; and some pastures are very liable to produce them. Many remedies have been adopted for their expulsion, but I have never found anything so effectual as calomel or emetic tartar, if properly administered: that not always being attended to, has led to the conclusion that the remedies are not infallible. Neither calomel nor emetic tartar should ever be given, if the expulsion of worms be intended, with the medicine administered to work it off; nor should soap, or any other alkali, form a portion of the ball, as those substances counteract the effect by decomposing both calomel and emetic tartar. The plan which I have always found successful to dislodge worms from horses, at any age, has been as follows, apportioning the quantity of medicine to the age and constitution of the subject:—Keep the patient without any kind of food for six or eight hours, when the appetites of the insects will become keen. A small quantity of bran mash is then offered to the animal, in which is mixed the calomel or emetic tartar: for a foal the proportion is from twelve to fifteen grains, and for a yearling from fifteen to twenty. This dose is repeated after an interval of ten or twelve hours, during which period no other kind of food must be presented; otherwise the worms, seizing upon the nutriment which it affords, will not be destroyed. Six hours after the last dose has been given, it must be worked off with linseed oil or aloes. The quantity of the former is from four to six ounces; but if aloes be preferred, the dose will be from one drachm to one drachm and a half, which should be dissolved over the fire in a small quantity of oil or lard, and made into a ball with ginger and treacle. The quantity of calomel or emetic tartar for horses at a more advanced age may be augmented to the extent of sixty grains; but for two and three-year olds, from twenty to thirty grains is sufficient, with the purgative remedy in proportion.

When horses are turned out to grass in the spring of the year, the succulent nature of the food causes them to purge, often to a great extent; this is considered by many persons a most desirable event—a great misconception. The herbage is overcharged with sap and moisture, of a crude, acrimonious nature, to such an extent that all cannot be taken up by the organs destined for the secretion of urine, or by

the absorbent vessels of the body; the superfluous fluid therefore passes off through the intestines with the indigestible particles of food, and thus the watery fæces are thrown off. Flatulent colic or gripes is a frequent attendant. The system is deranged; but the mischief does not terminate here. If the purging continues, a constitutional relaxation of the bowels is established, very debilitating to the animal, and often difficult to control. I am so decidedly opposed to an unrestricted allowance of luxuriant grass to horses at any age, that nothing could induce me to give it to them. I may not be able to enlist all my readers as converts to the practice; I trust I may a great many of them. After the second year, hay should form a considerable portion of the daily food, in summer, to every animal intended for hunting or riding. If a horse is supported entirely upon the grass which he collects in a rich pasture field, or upon that which may be cut and carried to him in his paddock, he must consume a much greater bulk than of hay in an equivalent time, to afford nourishment to the system. Grass being very full of sap and moisture, it is very rapidly digested, consequently the horse must be continually eating it. This distends the stomach and the bowels, and the faculty of digestion is impaired; for the digestive powers require rest as well as other organs of the body, if they are to be preserved in perfect condition. By the custom of grazing, the muscular system is enfeebled, and fat is substituted. This may escape the notice of superficial observers, who do not mark the distinction between the appearance of a fat and a muscular animal; who conceive, so that the bones are covered, and the points are rounded, all that is requisite has been attained. But that is a very fallacious impression. Let any person who is sceptical on this point ride a horse in the summer which has just been taken out of a grass-field, along with another kept on hay and corn, at the moderate rate of seven or eight miles in the hour; the grass-fed horse will sweat profusely, while the other will be perfectly cool and dry. This proves that the system of the one eating grass over-abounds with fat and those portions of the blood which are destined to form that deposit. Those who advocate grazing will no doubt exclaim, "Oh! this is a test of condition, which is not required in young and growing animals." I beg to state that it is highly important, if the acme of condition is to be attained by animals of mature age, that the growth and gradual development of their frames should be composed of those healthy and vigorous elements upon which the structure of future condition can be raised. Animal substances are to a very great extent subservient to the nature and quality of the food

with which the individuals are nourished. I believe farmers would find it much to their advantage if they were to consider this subject with reference to feeding cattle and sheep, so that they might select those kinds of food which abound with properties more conducive to the production of flesh than fat. There is no kind of food which the horse consumes which has not a tendency to deposit some portion of fat. It is a substance which must exist to a certain extent; but as it is muscular power, not a predisposition to adipose rotundity, which enhances the value of the animal, the reasons are obvious what guide should be taken in the selection of food. I have on a former occasion hinted the propriety of bruising the oats, and will now state my reasons for doing so. The first I will mention is economy. Three bushels of oats which have undergone that process are equivalent to four which have not, and the animals which consume them derive greater benefit. Various schemes are adopted to induce horses to masticate their corn, all of which are ineffectual. Scattering them thinly over the surface of a spacious manger, mixing a handful of cut hay or straw with each feed, and such like devices, will not cajole the animal to the performance of mastication. A horse that is disposed to bolt his corn, however carefully it may be spread along his manger, will soon learn to drive it into a heap with his nose, and collect as much with his lips as he thinks fit before he begins to masticate. Whatever food enters the stomach of any animal, and passes away in an undigested form, may be considered as so much dross or extraneous matter, which, not having afforded nutriment, is prejudicial to the creature which consumed it. A mistaken notion of economy is often the incentive to turning horses out in the summer, to be entirely dependent upon grass for their support. A few remarks will surely dispel that error. Twenty-two bushels of oats—allowing one bushel per week from the 15th of May to the 16th of October—may be estimated as the produce of half an acre of land, and half a ton of hay that of another half-acre, although a ton and a-half per acre is not more than an average crop. It requires at least an acre of grass land to support a horse during the period above-named.

Considering the important functions assigned to the legs and feet, upon which a great portion of the horse's value depends, it is a matter of some surprise that more attention is not bestowed on the subject. There are many breeders who never think of inspecting them till the animals are about to be broken, or, if they observe any imperfections, they leave the remedy to its fate. The legs of young horses may be justly compared to willow twigs; you may train them

to almost what form you please. By careful and judicious treatment many defects may be relieved or corrected, if attacked in the earliest stage, before the parts have assumed an unyielding texture. Many of the imperfections to which the form of the leg is susceptible, may be traced to a portion of the hoof having been broken, worn away, or chipped off. In the event of such an accident, the opposite side of the foot grows more luxuriantly, and the weakest portion, or lower side, having to sustain an increased weight, an uneven bearing for the foot is established. This will assuredly cause the leg to grow crooked, and very probably occasion a turning in or out of the toe. The irregularity of shape is often seen in one leg, while the other is well formed. The pastern joints, in many cases, evince a disposition to grow too upright, or, on the other hand, to assume too much obliquity. The same principle which accidentally causes a limb to take an unfavorable growth or form may be adopted to restore it to its proper shape, providing it is attended to in time. Thus, if the inside of the near fore foot of a colt or young horse be broken off or worn down, it will cause the animal to tread more heavily on the inside than on the out, and the leg will become bent in consequence. To correct this it is only necessary to reduce the superabundant portion of the foot with a drawing knife or carp, so that the limb may have an even bearing. When the pasterns grow too upright, the heels require to be lowered; and the toes of those which are too oblique must be shortened. The texture of the hoof varies considerably in different animals. In some measure it is constitutional; and it is likewise affected by the state or condition of the land upon which the animal is reared. Before shoes are applied, if the land be dry, the hoof is very liable to be broken off at the edges; and, if neglected, they will shell off, and frequently occasion soreness—sometimes even inflammation. To obviate this, the part should be rounded a little with a rasp, and the foot dressed with ointment composed of tallow, fat, or lard two parts, tar one part, and treacle half an equivalent of the latter. These being melted together, and applied warm on the soles and hoofs of horses at any age, will be found to promote the growth and toughen the parts effectively. If the land be very dry, it is advisable to throw water on some particular spot, where the animals may be induced to stand occasionally in order to keep their feet in a healthy state.

By adopting a regular system, and examining the legs and feet of every horse, young or old, once a month, attention to these little matters becomes habitual. When the vast importance of healthy feet is considered, the trifling item of

trouble must necessarily vanish. Incipient lameness is very frequently established at an early period; although it may not be detected till the animal is shod and put to work, when the unfortunate blacksmith, shoes, and all such devices, are summarily condemned. Thrushes are not unfrequently a predisposing cause of lameness; but they are commonly thought lightly of, unless they give palpable evidence of inconvenience. Exposure to wet and filth will often produce them; and they are in some measure similar to the foot-rot in sheep. At the same time they are more controllable and subservient to appropriate remedies. When the properties of the frog, the seat of this disorder, are considered, no surprise can exist that they should be very frequently the predisposing source of foot-lameness. A thrush may be briefly described as an ichorous, fetid, and corrosive discharge, proceeding from the frogs. When this exists for any length of time in the foot of a young animal, it interrupts the ordinary secretions and development of the sensible frog; by its discharge it promotes absorption, causing the internal part to assume an unhealthy degree of hardness or consistency and thereby affects its elasticity. The frog, it must be observed, is destined to prevent concussion, which in its healthy state it is admirably adapted for; but if it is injured, so that its character and nature is changed, when the horse is put to work soreness of the feet ensues, and often inflammation, which gradually increasing, the animal becomes quite lame, and is therefore nearly useless. As attention to the feet of young horses involves the necessity of handling, and such familiarities as will render them docile and tractable, two important objects are secured.—*Mark Lane Express.*

[There are few writers on subjects relating to the turf or hunting-field, or on the breeding and general management of horses, who are more practical than "Cecil." Here, his pen is a powerful one; but on the nature and treatment of diseases, or on the principles of animal physiology, it is less so, as the preceding letter fully shows.]

ON WOUNDS OF THE ARTICULATIONS.

By Professor Rey, Veterinary School, Lyons.

(*Continued from p.* 40.)

Mechanical and Medical Treatment—Emollients, Astringents, Vesicants, Caustics—General Treatment.

The treatment of wounds extending into the articulations has undergone various changes, naturally dictated by the

progress of science. For a long time emollients were exclusively applied in affections of this kind; but at a later period, astringents have been used, as also compression, combined with mild escharotics. At the present time, vesicants and cauterization are considered to be the most efficacious agents to effect a rapid and favorable termination in the majority of articular wounds.

In treating these affections, the desired object is the obliteration of the synovial fistula; and in order to effect this, we prefer topical applications, which prevent inflammation of the tissues, or such as cause it to disappear should it be present.

The treatment of which mention has been made, is *mechanical* and *medical*, and we will now consider each of these. By mechanical treatment is to be understood reunion and compression.

Simple reunion.—This rarely suffices to obtain an immediate cicatrization, it has, however, the advantage of causing the edges of the wound to be more closely brought in apposition, and hastening that process. It is not unfrequently effected by the use of a suture, but more generally by pressure with a light bandage.

Compression.—This has been considered to be more efficacious, and its use has been frequently recommended. M. Pauleau was the first to show the good effects arising from it.*

M. Lecoq, professor of the Veterinary School at Lyons has recently made particular mention of its application, and has recommended it for articular wounds of the fetlock, and of the pastern joints.† Other observations published by M. M. Pretot and Auboyer, have confirmed the good effects which were expected to result from it.‡ At present compression is not only employed alone, but likewise in combination with various topical agents, and especially caustics. This practice carries out the ideas of M. Lecoq, as expressed by him in the work above referred to, which consists in employing a slight caustic, such as Alumen. Calc. in conjunction with compression.

Some English veterinary surgeons have recently proposed the application of collodion, as a glutinative especially adapted to prevent the admission of the air. This agent seems to have

* G. Pauleau, Plaie articulaire des deux dernières phalanges. (Recueil, 1829, p. 465.)

† H. Lecoq, Plaies articulaires du boulet, des articulations du paturon, avec la couronne, et des deux phalangiens. (Recueil, 1833, p. 416.)

‡ Pretot, Recueil, 1836, p. 144; Auboyer, Recueil, 1838, p. 186.

succeeded in articular wounds of the hock and knee.* From our own observation the repeated employment of collodion, has not, however, been attended with success; because among animals the presence of hair and its rapid growth after being cut, are obstacles to an efficacious adherence of this agent. The medical agents which have been advocated as remedies for articular wounds, have been taken from different classes of the *materia medica*. Among the principal may be mentioned, emollients, astringents, vesicants, and caustics; they are not, however, all of the same therapeutic worth.

Emollients.—These were formerly employed exclusively in the treatment of articular wounds, but they are now discarded, especially by modern veterinary surgeons, who have recourse more and more to the principles of medicine, with a view to the adoption of that plan which is based upon the necessity of allaying the disturbed condition of the diseased tissues.

Numerous facts, published by various authors, appear to be in favour of emollients; these would, however, be of little value, even were it possible to compare with them the number of cases in which emollients have failed. We may also observe, that the advocates of their employment, never fail, in unsuccessful cases, to have recourse to irritants. They therefore attribute to the emollients a more efficacious action than they deserve. We admit that many articular wounds, in which emollients are used, have terminated favorably; but this does not prove that the cures were due to these agents, but rather to nature.

Some persons use decoction of the common mallow, or marsh mallows. Linseed meal, and analogous cataplasms, are also occasionally employed; and sometimes with a view of diminishing the pain, narcotics, such as decoctions of belladonna, or opium are combined with them. The advantages derived from these agents are supposed to be from their relieving the sufferings, but this is an error; for, as will appear by this report, irritants, and even caustics effect results more rapid and complete.

Emollients have been justly condemned, because they do not act with more activity. They soften the tissues and render the wounds pale, and retard cicatrization. Under their influence complications are more frequent, suppuration invades more easily the articular surfaces, and then follows purulent arthritis, an accident almost always irremediable. Thus emollients are always contra-indicated. We do not admit that they should be used even at the commencement,

* Recueil, 1850, p. 180.

with a view to prepare for the application of vesicants or caustics.

These remarks against the use of emollients do not apply to other antiphlogistic agents, such as diet, general and local bleeding, which may be useful to ameliorate the general state of the patient.

Astringents and *refrigerants.*—These are generally used at the commencement, and justly so. Their principal use consists in preventing sanguineous reaction, and by subduing inflammation; but to effect this it is necessary that their application is continuous, if not, they produce an effect the reverse of that which is intended, because the reaction would soon manifest itself with a greater intensity in the wounded parts.

The appearance of metastasis on the respiratory or digestive viscera has been ascribed by some to the use of astringents, but this is erroneous, for as they are only applied to a small surface, they simply produce local effects.

The applications which have been recommended are cold local baths, either with ordinary or acidulated water, viz., Liq. Plumbi Acet. Dil., or a weak solution of Ferri Sulph.; Zinci Sulph.; Alum., &c. A very simple, and a very efficacious, proceeding consists in surrounding the wounded articulation with a bandage or a pledget of lint, which is kept wet during the day with one of these medicaments. These agents, which are also recommended for sprains, are equally suited to these cases, because they prevent inflammation of the white fibrous tissues. This is the treatment which we always prescribe, during the first days, in the treatment of articular wounds.

To some astringents a specific action has been attributed, that of coagulating the albumen, and forming with the synovia a clot, which obstructs the articular fistula. Thus M. Caussé has prescribed tannin,* but the facts which he has published are but few and unsatisfactory, especially those which relate to wounds of the hock, as these have been attended by very incomplete cures. We have experimented in similar cases with tannin and oak bark, and when we succeeded in healing the fistula, the cure has been compromised by considerable enlargement, against which firing itself has been ineffectual. This is because tannin only arrests the flow of the synovia, and does not prevent the complications which menace the articulation.

Vesicants and their substitutes.—These are undoubtedly the most efficacious agents which are used in the treatment of articular wounds, and their application is becoming more and

* Caussé, Journal des Vétérinaires du Midi, 1846, p. 73, 109.

more general. Veterinary surgeons may claim the priority of their use, as these remedies are now adopted in human surgery.

It is difficult to decide who was the first person to recommend the application of a vesicant to wounds of a given size, and especially to those which affect the synovial tissues. For a long time veterinary surgeons in the army have employed this remedy. The method was promulgated by tradition, before being noticed in the scientific journals, and which was first due by M. E. Tisserant. This mode of treatment has now become quite common.*

Many theories can be given in explanation of the *modus operandi* of vesicants in articular wounds. *Spoliative*—produces exudation and secretion of pus at the expense of the wound, and evacuates the sero-plastic products which would have furnished the elements of inflammation in the substance of the tissues. *Antiphlogistic*—prevents phlegmon of the membranes of the diseased articulation. *Substitutive*—developes superficial inflammation, which is substituted for that which invades or menaces the deeper-seated parts. *Compressive*—causes fulness of the tissues, and brings the edges of the lesion in apposition; under this influence occlusion may become complete, and the synovia cease to flow. *Relaxative*—diminishes the tumefaction of the soft parts, rather than augments it. *Cicatrisive*—renders the cure more rapid by producing granulations which have a greater tendency to unite than those existing in ordinary cases.

We may also add, that the application of a vesicant to a joint need not cause any fear of reaction, or of metastasis, even on the urinary organs. It has besides the advantage of hastening resolution in contused wounds, and of limiting the extension of spacelus. There is one objection that may be made to this agent; namely, that it occasionally removes the surface of the dermis as well as the cuticle, and thus causes the hair to fall, and which may not be reproduced, or, if so, be of a different colour. We may reply to this objection by stating that the hair generally grows again after the use of a vesicant upon a joint, because the integument is thick here, and is rarely so deeply affected as to cause a permanent depilation; and even were it otherwise, the absence of hair would not be as serious a cause of depreciation, as if depilation had been produced on the sides of the chest or other parts.

Any kind of rubefacient or vesicant may effect a successful termination of articular wounds, and such remedies especially

* E. Tisserant, Journal des Vétérinaires du Midi, 1845, p. 151.

deserve a preference in consequence of their activity and the facility with which they may be applied.

M. Saussol has used mustard cataplasms with advantage in the treatment of articular wounds of the hock. Instances of the use of this agent are, however, but few, and practitioners prefer vesicants.*

The blister most recommended for the healing of articular fistulas, is the ordinary Ung. Canthar. Similar effects are produced by the tincture of cantharides, liniment of ammonia, unguent of the biniodide of mercury, and by other vesicants known under different names.

The application of a vesicant to an articular wound should always be had recourse to at the commencement. The blister should be spread upon the opening, and also upon the contiguous parts, and, if possible, all round the articulation. It should be repeated the next day, and always without the use of a bandage. The animal should be kept quiet, and care taken that he does not rub the part affected. The vesicant should be allowed to dry, and at the end of a few days the desiccation will be complete; the crust will fall, and the hair will be soon reproduced.

We do not pretend to affirm, that vesicants will cure all kinds of articular wounds; but they will the greater number, especially those of the stifle-joint. In some exceptional cases their application has been found insufficient, and it has been necessary to have recourse to caustics.

Caustics.—The agents of this description, which are used in the treatment of articular wounds, are the actual cautery, and escharotics.

Actual Cautery.—For a long time English veterinary surgeons have preferred this agent to any other. They apply it *only* on the exterior opening, so as to form an eschar which opposes the flow of the synovia, and assists cicatrization. Delabère Blaine has shown the danger of penetrating the skin with the cautery so as to injure the ligamentous structures.†

Several French veterinary surgeons have described the good effects resulting from the cautery, and among them may be mentioned, MM. Desmoulières, Renault, Gérard, Lecoq, and Feuvrier. For myself, the results which I have seen to follow its use have not been so favorable as those obtained by vesicants and chemical agents. M. Renault proposes the actual cautery as a last resource, and when other means have proved insufficient.

* Saussol, Recueil, 1831, p. 331.

† Delabère Blaine, Outlines of the Veterinary Art.

Several methods have been adopted in its use.

1. The *budding-iron,* raised to a white heat, is introduced upon the wound to rapidly carbonize the tissues, and produce a solid eschar. Hurtrel d'Arboval has even recommended this plan in large and extended wounds.* We, on the contrary, think that it should not be had recourse to, because it increases the solution of continuity, and retards the healing process.

2. *Cauterization in points* is sometimes applied all round the wound. This is preferable to the preceding method, as its action is more like that of a vesicant. MM. Lecoq and Renault have both spoken of this plan of using the cautery.

3. *Cauterization across the wound,* or in lines near to it, with a view to produce either derivation or compression, has perhaps an equal number of supporters.

M. Tisserant has published several observations which have been communicated to him by M. Feuvrier, and which are in favour of this treatment. Cooling lotions were used some days previous to the use of the cautery, in order to diminish the inflammation.† It is not to be denied that cures have been effected by this procedure, and we could add some facts to those already known, but this method has not many advocates, in consequence of the blemishes which invariably follow its application.

Chemical Caustics.—The employment of these agents is somewhat limited, but they are held in higher esteem than the actual cautery in the treatment of articular *fistulas.* Various substances, differing in their activity, have been recommended; the principal ones are Alum. Calcinat., Cupri Sulph., *Eau de Rabel,* and Hyd. Bichlorid.

Calcined Alum is but a slight caustic, and is therefore very frequently inefficient. M. Lecoq has, as before stated, sometimes obtained good effects from its use, in conjunction with slight compression.‡

The application of the sulphate of copper (the English method) has often not accomplished the desired effect, as it does not act with sufficient power upon the tissues.

The medicament, termed *Eau de Rabel,* is stronger, and sooner produces an eschar upon the periphery of the fistula. This agent has been prescribed by M. Mercier; the results, however, that we have seen, arising from its application, have not been favorable, because the granulations which follow

* Hurtrel d'Arboval, Dictionnaire de Médecine et de Chirurgie Vétérinaires, 1833, p. 146.

† E. Tisserant, Loco citato, p. 157.

‡ F. Lecoq, Recueil, 1840, p. 416.

the fall of the eschar are not produced soon enough or with sufficient energy.

En résumé. None of the preceding agents have the efficacy of a vesicant.

We may, lastly, mention the bichloride of mercury. This escharotic was employed, for the first time, in articular wounds, by M. Saint Cyr, now the Principal of the Clinique of the Lyons School. In his trial, he succeeded in effecting a cure of a fistula leading into the articulation of the lower jaw.*

Bichloride of mercury has also been successful in the hands of several veterinary surgeons. M. Dubois has cured a similar case.† M. Ollivier has with this caustic produced the healing of a wound penetrating into the hock.‡ M. Pierre, veterinary surgeon to the 5th Dragoons, has also successfully treated a wound affecting the articulation of the shoulder.§ We have likewise seen in the practice of the Veterinary Schools at Lyons, several cases of openings into the articulations, which we will mention hereafter, in which it has speedily produced occlusion.

This agent may be employed at different stages of the treatment: it is sometimes used by being sprinkled upon an adhesive plaster, which is placed over the wound and kept there by a bandage. The escharotic soon produces beneficial effects; it coagulates the synovia, and forms also a grey-coloured and thick scab, which adheres to the part for several days, and after its detachment, the sore has a great tendency to the formation of healthy granulations.

The animal does not appear to suffer much pain from the cauterizing effects of this agent; on the contrary, the movements of the affected part soon give evidence of a favorable state of things. This treatment generally prevents *purulent* arthritis, instead of exciting it, as might be expected.

We have not mentioned camphorated paste, which was formerly considered as a *panacea* in the treatment of articular wounds. Its use is now nearly abandoned, and justly so, as it is difficult to understand how any efficacy could ever have been ascribed to the preparation.

General means.—Whatever treatment is adopted, there are some general rules which should be observed. Perfect quietude is especially advised, and the placing of the animal in a

* Saint Cyr, Journal de Lyon, 1850, p. 15.

† Dubois, Repertoire Belge de Médecine Vétérinaire, 1850.

‡ Ollivier, Journal de Lyon, 1851, p. 366.

§ Pierre, Recueil sur l'Hygiène et la Médecine Vétérinaires Militaires, 1853.

favorable position for recovery, by preventing any movement of the wounded articulation. The way also in which the patient is secured requires attention, in consequence of the itching he suffers, and which causes him to bite or rub the affected part. Cooling diet should also be prescribed, especially when the pain is acute. Emollient clysters and aperients should likewise be given, as these remedies may prevent complications of the disease, affecting either the brain or the intestines.

The use of tartar emetic has been advocated. M. Reboul has considered this agent as being a powerful remedy in effecting a favorable termination in articular wounds.*

After cicatrization of the wound, the stiffness and difficulty of the movements of the joints should be treated by long continued friction, with Spirits of Camphor, or essential oils: Tincture of Cantharides, Liniment of Ammonia, &c. in combination or otherwise. If these should be insufficient, the actual cautery should be used as a last resource; but it will not always be possible to effect a complete cure in these cases. In human surgery, anchylosis is considered as a favorable termination; but with us it is a result by no means to be desired.

In the smaller animals, it may be even advisable to remove by amputation one or more of the phalanges, or even the limb, should complications arise from purulent arthritis.

En résumé. The treatment of articular fistulas should, at the beginning, consist of the use of astringents; at a later period, a vesicant ought to be had recourse to; and, finally, if this last agent is not sufficient, the Hydrarg. Bichlorid. must be used.

(To be continued.)

"THE QUESTION OF INOCULATION FOR PLEURO-PNEUMONIA AS BROUGHT BEFORE THE CHAMBER OF REPRESENTATIVES OF BELGIUM.

"At the sitting of the Chamber of Representatives on the 7th of December, 1854, M. Visart, an honorable member, whom the agricultural interest reckons amongst its chief supporters, in proposing to introduce into the sanitary police law, as applicable to domestic animals, a clause for submitting to inoculation, after M. Willems' method, any cattle which had been in contact with animals affected with epizootic pleuro-pneumonia, spoke as follows:

* Reboul, Journal des Vétérinaires du Midi, 1845, pp. 345, 413.

"This disease is very burdensome upon the public treasury, because, for those cattle which are slaughtered, the Government grants an indemnity. The more, therefore, we diminish the spread of the contagion, the less the treasury will have to pay. I think, then, that the State, as well as private individuals, will profit from the adoption of my amendment, because there will be a smaller number of animals killed.

"I have the firmest conviction that the discovery of Dr. Willems, when practised with intelligence and upon a large scale, will produce many advantageous results, far more numerous than the accidents to which it sometimes leads."

The honorable M. Lelievre, reporter of the second central section, to whom the clause proposed by M. Visart had been sent, in his report laid before the sitting on the 8th, pointed out the reasons why the said clause had not been introduced into the law:

"The Central Section is of opinion that it is not the place of the Legislature to pass its opinion on the value of any proceeding whatever, nor to sanction an invention whose merits it has not in its power to control. The measure proposed in the amendment is besides purely administrative, and cannot conveniently appear in the project now being discussed.

"Consequently, the Central Section does not think it proper to admit the amendment. Nevertheless the Central Section calls the attention of the Government to the proceeding named by M. Visart, it being of importance that the merits of this invention be appreciated."

M. Willems thought it right to address the following letter to the Chamber, requesting the intervention of the National Representatives, that in Belgium as much at least might be done for his invention as had been done by foreign governments:

"*To the President and Members of the Chamber of Representatives in Belgium.*

"Sirs,—Your earnest solicitude for all which concerns the interests of agriculture induces me to express the hope that you will condescend to favorably receive the communication I have the honour to make to you relative to a question which has already been discussed in the Chamber, and which has there met with much sympathy and numerous supporters, I mean inoculation for pleuro-pneumonia. Before coming to the question to which I have alluded, it is important, Sirs, to inform you that all the commissions instituted by

foreign countries for the study of inoculation, and whose reports are now known, are *favorable* to the system.

"I will mention, firstly, the report of the French Commission, presented in March, 1854, to the Minister of Agriculture, &c., through Monsieur H. Bouley.

"2. The report of the Commission instituted in Prussia, as drawn up by Dr. Ulrich, and published 16th May, 1854.

"3. The different reports made in Italy, to the Chamber of Commerce in Pavia; to the Medical Committee of Lommeline, &c.

"4. The reports of the Dutch Commission, which takes such a lively interest in this matter that it has again sent Dr. Wellenberg, its President, into Belgium, to make fresh inquiries into the results obtained by inoculation.

"5. The last report of this same Commission, which contains the definite conclusions of the Commission, and which are, on the whole, favorable to my system.

"I will further add, that by the order of the Minister of the kingdom of Holland, inoculation has for two months been practised and taught in Frise by Professor Jennes, a member of the Commission, and that in this province, where pleuro-pneumonia commits very great ravages, this practice receives the continued attention of Government.

"Now, Sirs, I come to what has been done in our own country.

"The breeders, graziers and distillers make use of my invention, extol it, and reap great benefit from it.

"At Hasselt the disease has disappeared from the stables where inoculation has been practised; it only exists in those where inoculation has not been used, or where the operation has been badly performed. The majority of the distillers have recourse to this operation, which an experience of *three years* leads them to consider as infallible. I mention among others MM. Ponet, Thiers, L. Vanvinckroye, Platel, Vanstraelen, Vinckenbosch, Croenenbergs, J. Vanvinckroye, Nys, and De Borman.

"Thus, gentlemen, my method has every where obtained the double sanction of science and experience. It has received in foreign countries the approbation of bodies instituted to inquire into its value, and it is also generally practised. In the face of these facts it is painful to me to offer you a sad contrast, especially as this contrast is met with, unfortunately in Belgium, and in the official sphere. The Commission instituted by the Minister of the Interior, has not ceased to oppose me in a most inexplicable manner. It has already absorbed considerable sums without having, so

to speak, made any experiments itself. It has relied upon vague reports, partial and hostile, of some veterinary surgeons. It has conducted its operations with a tardiness which can only be contrasted by the activity displayed by foreign commissions. During a whole year, the Belgian Commission has absolutely done nothing. At different times, and conformably to the ministerial decree of the 3d of April, 1852, by which it was instituted, I put myself in communication with it, and sent it much information, and made different propositions, but what is the result.

"I say it, Sirs, with much regret, that its party spirit is such, that it has not even answered me. I complained of this to the Minister of the Interior, by my letter of the 20th of September last, and this high functionary, no doubt through the acts of the Commission, has not been able at present to furnish me with the information which he promised. I am convinced, Sirs, that the representatives of the nation will be of opinion that this state of things has lasted long enough, as it can be but a question of vital importance to the Agricultural industry—industry which Marie Theresa calls 'the nurse of all the arts'—that it should be made to suffer from a bad feeling, based upon unjustifiable motives. I think I have done all that depended on me in this affair,—sacrifices, trials, proofs of every kind; I have indeed neglected nothing, in order to bestow upon my country the fruits of a discovery, judged every where to be of the highest importance, and I am still disposed not to neglect any means to establish and make acceptable a useful truth. I rely then, Sirs, upon your distinguished intervention in order that as much at least may be done in Belgium, as has been done in foreign countries concerning my procedure. You will be of opinion, I am convinced, that it is deplorable to see our beautiful country remain far behind others in this particular. You will judge that it is prejudicial to the interests of the country;—that in a certain degree it is humiliating to our national pride; and lastly, that it is discouraging to those Belgians, who have promulgated ideas which are useful, and of a nature to ameliorate the material or moral condition of the people you represent. I rely then, I repeat, Sirs, upon you, and I am persuaded that in this instance your distinguished protection will again not be denied me. Permit me to assure you, Sirs, of the sentiments of high esteem and perfect devotion with which I have the honour to remain,

"Your very humble and respectful servant,

"Dr. Willems.

"Hasselt; *Dec.* 11, 1854."

This request was supported in these terms, by the honorable MM. the Counts of Renesse and Rodenbach, whose devotion to agriculture is known through all the country:

M. DE RENESSE.—"M. Willems of Hasselt, to whom we owe the happy invention of inoculation for exudative Pleuro-pneumonia of bovine animals, has thought proper to address the Chamber, that he may claim its intervention with the Government, so that he may know the result of the opposed experiments, and which he has requested at different times in order to show the efficacy of his preservative means.

"In other countries, the experiments, which have been made, appear to be favorable to this great discovery, which is of such importance to agricultural industry. However, it seems that in Belgium, the country where this discovery was made, the commission nominated for this purpose by the ministerial decree of April 3rd, 1852, remains perfectly inactive, having done nothing for a year, in spite of the demands of Dr. Willems.

"I have the honour then of proposing to the Chamber, to order this request to be sent to the Commission of petitions, with the demand for a report before the discussion of the budget of the interior."

M. RODENBACH.—"I support with all my heart that which the honorable speaker who preceded me has just said. This question, which is of the highest importance, appears to have been neglected; for the Government had promised a report, and we hear nothing further of it.

"However, as the honorable speaker who preceded me has said, the discovery of Dr. Willems has had the greatest success in France, Holland, and Belgium, and without doubt, in order perhaps to justify the proverb, that it is difficult to be 'a prophet in one's own country,' the Belgian Government has at present taken no decided part in the matter. I support the proposition of M. Renesse."

The Chamber decided that the request of M. Willems, should be sent to the Commission of petitions, and that it should be made the subject of a report before the discussion of the budget of the Interior.—*Parliamentary Annals, Belgium.*

[We shall watch with much interest this application of Dr. Willems to the Chamber of Representatives. We have no wish to prejudge the case, but we think it as well to direct attention to the circumstance, that Dr. Willems has not only cautiously avoided the mention in his letter of any facts which tell against inoculation, but speaks of '*all* Foreign Countries' having by their commissions favorably received his 'invention,' as a preventive of Pleuro-pneumonia, and

advances this in proof of its value. How much truth there is in this statement, as well as in the assertion that the Belgian Commission has been actuated by *personal motives* in opposing his views, we may leave Dr. Reviglio of Turin, to answer. M. Reviglio has reported, that his 'conclusions are condemnatory of the system, and that Dr. Willems' hypothesis is deduced from erroneous data and analogies, and, therefore, it is destitute of any scientific foundation.'

It was to be expected that the English report should in no way be alluded to, for our opinions were well known to fully agree with those of the Belgian Commission, Dr. Reviglio, and many members of other commissions. If we mistake not, the illjudged accusations and intemperate expressions contained in this *ex parte* statement of Dr. Willems will receive a complete answer from the Belgian commission, while it has a Verheyen for its president, and a Bellefroid, Douterluigne, Gluge, Sauveur, Theis, and Thiernesse for its members, with a Fellot and Marinus as its delegates from the Royal Academy of Medicine, to assist in its important duties.]

SALES OF BLOOD STOCK IN 1854.

A correspondent sends us the following table of the sale prices of thorough-bred yearlings, which have been registered during the past year, in the columns of the *Life*. The scale descends from Voivode by Surplice, 1020 gs. as low as 10 gs., a price which was achieved three times over. The average price of the 182 is no less than 137½ gs. The table runs thus:

Gs.	No.	Average. Gs.	Total. Gs.
1000 & upwards	2	1010	2020
750 to 1000	2	895	1790
500 to 750	6	540	3240
400 to 500	2	450	900
300 to 400	9	310	2790
200 to 300	19	236	4470
150 to 200	13	158	2056
100 to 150	25	120	2992
50 to 100	36	75	2697
25 to 50	46	37	1681
1 to 25	22	18	389
	182		25,025

The nine foals which were sold without their dams averaged 56 gs., the highest price being 110 gs., and the lowest 25 gs. Fifty-nine brood mares, some few of them with foals, were also brought to the hammer. The highest price reached by them was 600 gs. for Palmyra, while Nanny, 6 gs., was at the fag end of the lot, and the average price was 96½ gs.—*Bell's Life.*

THE VETERINARIAN, FEBRUARY 1, 1855.

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

THE INITIATORY ADDRESS OF THE EDITORS.

"To err is human; to forgive divine."

It may be the opinion of many of our readers, that to undertake the editorship of a journal which has been before the veterinary profession for so long a period as twenty-seven years, and conducted, too, by such eminent men as Mr. Youatt and Mr. Percivall, is an act of temerity which we should not have ventured upon, inasmuch as it is not likely to be successfully accomplished by us. It is, also, quite possible that we ourselves are not without some misgivings lest all that is expected from us should not be realised; we have, therefore, chosen the above apothegm as the motto to this address.

But it may be asked,—On what grounds do we hope for success? Are our abilities of that kind which will command the respect and confidence of the profession? Have we anything new to offer; or any better devised plan for adoption than that which has been acted on by those who have gone before us? To these latter inquiries we confess to be obliged to reply in the negative; nevertheless we unhesitatingly say, we *do* hope for success. Then returns the inquiry,—On what grounds? To which we answer,—1stly. The duties of editors are not foreign to us. 2dly. We are somewhat acquainted with the wishes and the wants of the profession. 3dly. Our position gives to us many opportunities for acquiring that amount and kind of information which, by being disseminated, cannot fail to prove useful to the body; and 4thly. We believe—truly believe—there are those in the profession, whom we have 'entered on our list of friends,' who will give to us their countenance and support as long as we deserve them; and these it will be our earnest endeavour ever to merit.

We also think the time is come when our profession has a right to take a high position, and that this can only be secured by giving to its literature a more scientific tone and character. Veterinary medicine, from the multiplicity of facts it now possesses, has merged from out of a mere art into a science, and among those who have gone forth to practise it there are minds that possess the capability of thinking ere they act, and can and do assign a reason for their acting when called upon. Indeed, the present day is one in which this is more than ever required of the professional man; for science, that "bird of paradise," as it has been designated by our immediate predecessor, has of late years been taking rapid and extensive flights, and alighting here and there to shake and re-arrange its golden plumage, slightly ruffled by ignorance and deep-rooted prejudice, has left behind it traces of its genial influence in the developing of the intellectual powers and awakening a love of research and investigation.

The application of such powerful excitants as these to the practice of medicine has resulted in the discovery of fresh modes for ameliorating the sufferings of men and animals when diseased; and thus many of the older plans have almost fallen into disuetude. To report these changes, and to aid in their general adoption, will be one part of our duty.

Perhaps another reason might be assigned, namely, the unequivocal proof which has been given by the members of our profession of their estimation of a journal of this kind, by the undeviating support it has always received from them. And surely some channel of communication, some medium for the interchange of thought, and suggestions for continued improvement, is in every sense desirable. Moreover, we are friends to the diffusion of knowledge, and enemies to all exclusiveness. We would not that light should be hidden under a bushel, or information be pent up in colleges and cloisters, as in the mediæval ages, the crudities of which some even now affect to admire. Knowledge, like "mercy, is twice blessed: it blesseth him that gives, and him that takes." 'Tis like good seed sown in good ground, sure to be productive. "It grows with what it feeds on." He, therefore, who

is its happy possessor can afford to be prodigal, for his prodigality makes him rich; while he who carefully hoards up his little store obtains no increase thereof, and dies poor and despised. The wise man has said: "There is that scattereth and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty."

The necessity of our attempting the performance of the act would thus seem to have been laid upon us. The sturdy oak had long fallen; and when the axe was placed at the root of the other tree, we were asked to give to it our feeble support. Readily we did so, but the mandate had gone forth,—the fatal stroke came, and then the cedar fell!

In the conducting of this journal, we shall most carefully avoid the introduction of those personalities that detract from a becoming controversy. Differences of opinion, perhaps, ever will exist among us respecting some things; but these need not lead to angry discussion, or the indulgence of a vituperative and dictatorial spirit. The bitter of invective commonly engenders a love of retaliation, although it may not otherwise sensibly wound; this awakens a desire to recriminate, by which venial faults are unnecessarily exposed and character traduced. Fair discussion, a just criticism, and a temporate statement when an injury has been done, so as to elicit either an apology or an explanation, or both, are not only admissible but called for, and to these our pages must not be closed; but they shall not be sullied—not to say disgraced—by the manifestation of an acerbity of temper, or of jealous feelings, arising from disappointment, real or fancied, or the supposed non-appreciation of merit. Were each to look within himself he would find more than enough to amend; and we would, therefore, that as a common brotherhood we should bear and forbear with one another, the only provocation amongst us being how we may best promote each other's interests, and the only controversy, how we may most contribute to the general weal of the profession. The love of finding fault we well know is both natural and easy: —the "many" are more prone to censure than to praise. Moreover—

> "Reproach is cheap: with ease we might discharge
> Gibes at each other, till a ship that asks
> A hundred oars should sink beneath the load."

As to *anonymous* correspondents, we can only express our hope that we shall have none, since their communications will not be inserted by us. In every instance, then, we require the name of the author, even although it must not be given publicity to by us. Some of our friends may prefer the adoption of a *sobriquet*, or some fanciful name, for reasons which we have no right to inquire into, although we may regret it.

As to what may be said *to* or *of* us anonymously, we do not say we shall never heed it, for sometimes it is the case that our faults are thus pointed out to us, even by our enemies. But kinder would be the open advice of a friend.

We feel the prominent position in which we have chosen to place ourselves. We are quite aware that we are obnoxious to censure and animadversion; nor does it become us to display an extreme sensitiveness when comments are freely made upon the steps we have taken, our course of procedure, or the views we may advocate; but rather, with submission, we must be contented to bear that which our boldness has brought upon us; being upholden by the consciousness of having an honesty of intention, and a determination to do that which is right, regardless alike of the praise of our friends, and the disapprobation of those who may not agree with us. Not that we wish it to be thought that we are indifferent in this matter: far from it; for we sincerely desire to possess the approbation of the whole profession; "to be all things to all men;" and, as we have already said, our utmost efforts shall be made to realize this, but never by the violation of our principles; and we are quite sure that this will not be required of us.

If it be that our *politics* are inquired into, the answer we fain would give is that we eschew them altogether; for we have no wish that they should be obtruded on the notice of our readers; and with great reluctance, amounting to an aversion, will we ever do so. But if the inquiry be persisted

in, we reply, that a love of science has made us liberal in our sentiments; reformers of abuses, and warm promoters of the onward march of our profession by an extension of the means of information. Nevertheless we are opposed both to Vandalism, and "the removal of the ancient landmarks:" these must be maintained in all their integrity and independence; and never will we lend a helping hand to their destruction. Those established plans which have received the sanction of long usage, and proved to be effective, shall be carefully guarded by us, for we venerate the wisdom of age and experience.

> "From the barred visor of antiquity
> Reflected, shines the eternal light of truth,
> As from a mirror."

And now, after this lengthened and candid avowal of our intentions and determinations, we are contented to throw ourselves into the hands of our friends. We have previously observed that our journal is theirs, or what they make it. Unity of purpose and co-operation will effect all that can be desired. In reference to a kindred profession, it has been said: "The united efforts of a large number of persons, when directed to a good object, and conducted in a proper spirit, will often bring about results even exceeding the original expectations of the parties concerned. But, in order to ensure success, unity is essential, and minor differences must be merged for the general good." This we are not only contented, but resolved to do; and if we thus fortunately succeed in gaining the confidence and support of the members of our profession, we not only apprehend no failure, but are certain that the opposite will be the result.

> "Who does the best his circumstance allows
> Does well, acts nobly;—angels could no more."

ROYAL COLLEGE OF VETERINARY SURGEONS.

In our last number, we inserted a report of a conversazione given at the above Institution, No. 10, Red Lion Square, by the President, W. Field, Esq. and it is gratifying to observe that the public press has been even higher in its commendations than we were as to the manner in which this *re-union* was conducted, as well as the benefits that are likely to result from an occasional repetition of these gatherings. It may not be desirable that they should always be carried out on such an extended and liberal scale as this one was; nevertheless, we are convinced that the more frequent such meetings are brought about, the greater will be the amount of good derived.

Our object, however, is not so much to refer to this as to the "local habitation" which the profession now possesses, and which has lately received its correct name, "The Royal College of Veterinary Surgeons," the word Institute being wisely dropped; for we feel convinced it is neither so well known to, or appreciated by, the profession as it merits. The rooms are *en suite*, spacious, and well adapted for their present purposes, although we do hope to see the time when larger ones, or at any rate a greater number, will be required. The Institution being centrically located, affords to members of the profession, on their coming to town, a convenient place of meeting for the holding of consultations, also for the writing of notes, and the transaction of other business matters connected with our profession. Perhaps it has not been thought that it was available for these purposes, and hence the reason why so few Veterinary Surgeons have visited it; but a person is always in attendance to answer inquiries, and otherwise to render such assistance as may be needed.

The library, too, although of recent formation, has in it many works on, and connected with, Veterinary Medicine, and to these reference may be made whenever a doubtful question is mooted. The museum, likewise, already contains several very interesting specimens, especially in Morbid

Anatomy, to which others are from time to time being added, and lately a large number have been placed there at the bequest of the late Mr. Alex. Henderson. Were our professional brethren to look over these departments, it is more than probable they would be induced further to enrich them by the presentation of any duplicates they may have in their possession; for it should be remembered that the Institution belongs to the body corporate, and therefore such contributions are not for the benefit of any private individual, but for the community of which they are the members; and to be held in reserve for succeeding generations, so that in ages yet to come, good may result from these collections: and how often has it been the case that from beginnings smaller than these, large and valuable accumulations have arisen?

Veterinary Jurisprudence.

[We have been earnestly requested by Mr. Horsburgh to give the evidence *in extenso* in the following case, and have done so, in as far as the examination "in chief" is concerned, from a printed report he has sent us. Veterinary jurisprudence is an important subject, and one which we are desirous at all times to give a place to in our journal; but we fear, unless our contributors will kindly condense these cases as much as they can, that they will frequently have to be put aside for more valuable matter.]

BALFOUR *v.* WORDSWORTH.

Issue.

It being admitted that the defender, on the 10th day of November, 1852, sold and delivered to the pursuer a roan gelding, at the price of £25, which was then paid by the pursuer,—Whether, at the time of the said sale, the defender specially warranted the said gelding to be sound? Whether, at the time aforesaid, the said gelding was not sound?

Whether the pursuer, within reasonable time, gave notice to the defender of the alleged unsoundness? and, whether the defender is indebted and resting-owing to the pursuer in the sums set out in the annexed schedule, or either or any part thereof?

Schedule of Sums Claimed.

£25, being the price of the horse in question, with interest thereof from the 10th day of November, 1852, under deduction of the sum of £12 13*s.*, paid over by the defender to the pursuer's agent on the 12th day of January, 1853, as stated in minute of restriction, No. 20 of process.

£10, expenses of keep, loss, and damage, as set forth in No. 6 of process.

Evidence for Pursuer.

1. John Balfour, pursuer, farmer at Gilston: Attended Hallow fair in November last. There purchased horse in question for his dog-cart—a roan gelding—from defender, to whose repository witness went. Had no particular trial of horse. This was on 10th November, 1852; paid £25, a Wednesday. Got warranty, which is No. 4 of process; relied on it. One of defender's men rode the horse to Dalkeith for witness. Witness drove his dog-cart same evening to Gilston, 13 miles, the horse being behind, led by a person sitting on hind seat of cart. It was dark. Witness did not observe horse that evening; was driving. Witness put horse in harness for first time on following Sunday, the 14th. Drove to Blackshiell, about 3½ miles distant, and back. Observed horse tender when going on any hard part of road; did not go so well as on soft part. A few days afterwards, first opportunity, witness sent for smith; thought shoes might be wrong; might be on Wednesday. Horse taken to smith by Sydserf, a young gentleman with witness as a pupil. On Thursday, next day, he drove horse to Dalkeith; horse going same way over rough road. That was season for metalling roads. Witness thought that leather soles under soles might benefit horse, and sent him to Mr. Allison for that purpose; but on first occasion horse sent to Allison to be frosted, and it was on an after occasion that he was sent for leather soles. This was about a week afterwards, when witness was driving in to Dalkeith, and, finding horse going same way, thought something wrong, and sent him to Allison to get new shoes with leather soles. This not unusual when roads new metalled. Horse got worse, and witness, in about a fortnight afterwards, brought horse again to

Dalkeith. Sent horse to Allison, and witness saw Allison himself. Witness did not see Allison examine horse. Witness sent for Mr. Horsburgh on this last occasion, a veterinary surgeon in Dalkeith, and he went to Allison to examine horse, and witness saw Horsburgh examine horse. Witness, in consequence, immediately wrote to defender the letter No. 9 of process, dated 16th December. Received an answer. Witness took certificate on this to defender, No. 10 of process. This was on Tuesday the 21st, and on same day he sent horse back to defender—a lad led him, and witness went in himself. Witness had brought horse to another veterinary surgeon, Gray, in Edinburgh, on same day, before taking it to defender. Both Moir and defender said to bring down the horse, as they would not take horse back as they said—at that time when witness went down with horse, defender not there. Moir told him to come back. Witness did so about three. Horse had been left at defender's, and he saw it in the yard and some people round it. Moir was there—not sure of defender. They had the fore shoes off, and were paring at his feet. Professor Dick there—paring very considerable. Horse was left at defender's, but not on any understanding that defender to take him back. Horse then sold by mutual arrangement. Has seen horse lately. He is in Berwickshire, at Whitsin, with Mr. Strachan. This is within the last fourteen days. During time horse in witness's possession, well attended to—he met with no accident—well used—nothing to account for lameness. Shown account No. 6 of process—correct account.

Examined by Patton.—Made purchase on 10th November, between two and three. The horse was to be delivered in Edinburgh. Witness wanted a person to take horse to Dalkeith, and hostler said, here is one of our own men, and witness took him. Witness got to Dalkeith about five, by coach, where he had left his dog-cart. Horse there before him. Stayed one-half or one hour at Dalkeith, and got to Gilston in about two hours or two and a-half hours. Horse led by a Mr. Mack. Road steep and new metalled. On Thursday, or Friday, or Saturday, witness rode horse about the farm, but only on one of these days. Witness not aware of any one else having ridden horse. It did nothing else on those days. Drove to church—it is at Falla or Blackshiells. Horse put into stable. On Wednesday sent him to smith. Pays his smith half-yearly. An entry in account of what he paid the smith, of date the work was done. He took the date from the smith some time after. Could not say exactly how long. Thought at the time that smith's date correct,

but can swear that he did send horse to smith the Wednesday after he had him at church. Thinks it was next day he got Allison to frost horse. New shoes were not put on, as he thinks. About a week before, horse again sent to Allison. Last time he was at Allison's was 16th December. Shoes then taken off for examination, but nothing else done to horse. Horse mean time had been used occasionally in dog-cart, longest journey being to Dalkeith. When witness went a journey took a horse from plough, once to Glencorse, and once to Springfield—distance of last about 25 miles. In defender's yard, as above, shoes off before witness came. Did not know persons about horse, excepting Dick. Witness had no conversation with them.

Re-interrogated.—Heard Dick say something about a bent nail in one of fore-feet. Thinks horse sent twice to his smith.

Court.—Witness does not think he rode the animal above twice all the time witness had him; and, except for exercising him, which J. Nisbet may have done, witness does not know of others riding horse.

John Nisbet.—Is in service at Beil,—was in pursuer's service in November last, and left him at Whitsunday. His duty to attend to horses. Recollects the gelding at pursuer's. It was at old term of Martinmas he went to pursuer. The gelding sent away some time after witness went. Witness had charge of gelding and exercised him, and gelding met with no accident—nothing to injure him; was not much wrought—no more than sufficient for exercise.

Robert Dods, blacksmith at Stagebank, about four miles from Gilston.—Works to pursuer. Recollects of gelding being sent to him about 17th November. Keeps a book, but is not sure of that being entered. Shoes removed and put on again. Witness did not pare his feet, and did not prick horse or make any new holes in hoof. Old holes used. Horse came back to get two new hind shoes, which witness put on. No injury to horse, and did not pare hoofs.

Examined.—Witness's charge for two new shoes 1*s.* 4*d.*, and for shifting four shoes his charge was 1*s.* The second time gelding with him about 18th December. Pursuer asked witness if he knew time when gelding with him first time, and witness said he could not tell him, but said it was about 17th November. Does not think he told pursuer it was about the 27th. Is as sure the second time was about the 18th December as he is sure of the date of the first time. Pursuer asked him as to this date, and he said, as above, about 18th December. Is sure he did not tell pursuer it was

about the 11th. Had that date, 18th, in his book, and there was an entry of date 11th, but this for another horse of pursuer's. Not so much as three months, but within a month or two after above date, that he had this conversation with pursuer. Between 17th November and 18th December something had been done to shoes; two new fore-feet shoes on the gelding; no frosting on the shoes. Witness did not frost the shoes.

Re-interrogated.—There are entries on 11th and 18th December about pursuer's horse, but no specific mention of horse.

Court.—Saw nothing wrong with horse's hoof on 17th November, but did not examine feet particularly. Horse not going very well; not going freely; rather going lamely in fore-feet. Had observed this before 17th November, when horse was passing. All the word that was sent to witness was, that he was to remove shoes. Nothing said as to object of this, and he therefore did not examine. On 18th December, the only order sent to witness was to put two new shoes on hind feet. Nothing said about horse being lame. It was soon after that the pursuer asked if witness had seen anything wrong with gelding.

William Allison, blacksmith, Dalkeith.—Remembers gelding being sent to him by pursuer. It was sent to witness, by his book of these dates—25th November, 2nd December, and 16th December. Witness saw horse in his place on 25th November, but did not examine him himself. One of his men, Clark, did. Witness did not see gelding the second time. Saw him on the 16th, and examined the animal. Observed a corn on inside heel of near fore foot. Is was a flat foot. Did not examine the other feet. Witness thought the foot was foundered. The sole of foot being flat, in place of being hollow, led witness to that opinion. The foot likewise was flat on the outside, and that also confirmed witness in his view. Could not say how long foot had been in this state. Did not know whether a new or an old founder. Witness did not pare foot. When gelding with witness on 25th, was frosted. On 2nd December gelding got two new fore-feet shoes with leather, and on 16th December gelding brought to be examined, and shoes taken off for that purpose. Horsburgh was there.

No new facts were elicited by the cross-examination of this witness.

James Clark.—In employment of Allison; has been there for some time. Remembers gelding being brought; shoes were sharpened; weather was frosty; shoes seemed to be

good enough to witness's knowledge; person who brought it said, gelding going a little lame, and shoes to be eased a little in the heel of fore shoes—inside heel. Witness observed corns in the inside heels of both fore feet. Had no conversation with pursuer as to this; this was about 25th November. Gelding came back a second time, and witness put on two new shoes with leather soles. Still observed the corns, and both fore feet had flat soles; no injury to gelding. Saw horse again at Allison's, when Horsburgh was there, but witness not employed about horse at that time. Shoes taken off for examination of gelding, and replaced.

The cross-examination went merely to the time the witness first spoke of the horse having corns.

Buchan Sydserf.—Was a pupil with pursuer in November. Remembers gelding; he took it to a blacksmith shortly after pursuer got it, to get something done with fore shoes; does not remember what. About middle or end of December came into Edinburgh with pursuer to return the horse. Went to Gray's, in Rose Street, then took it to defender's; left it, and returned with pursuer about 3, and saw horse in yard. Dick was looking at horse, and others were paring at his feet; did not know who was doing so.

Court.—Witness took horse to Dods two or three times, but never to Allison. Horse was laming on all times; rode him on newly metalled parts of road, but got worse. When horse taken in to be returned, drew the dog-cart all the way to Edinburgh; horse laming then.

By Macpherson.—Did not take horse to Dods two days before he was driven to Edinburgh.

James Horsburgh, veterinary surgeon, Dalkeith.—Remembers being asked by pursuer to look at a horse about 16th December last. Horse was at Cross Keys, but they had him taken to Allison's shop. Shoes taken off. Horse had been well shod, as far as shoes went. Examined nails first, as usual in such cases of lameness. Nails all right. Saw that horse had been foundered some time before, and effects of founder were apparent before shoes taken off. On both feet, soles flatter or higher than the crust, generally termed pumiced, which is effect of founder. Very little hoof on heels, and there were corns on inside heels of both fore feet —particularly near one. There was an alteration in the hoof half way down—foot assuming a more perpendicular form, and rings or slight circular enlargement round the hoof, showing a founder about four months before, in witness's opinion. This before shoes off. Hoof did not appear improperly pared. Shoes being removed, corns were found

in both feet, particularly near one; and soles were flat as above. The flatness or raising of sole not natural, but the effect of founder No horse has originally a flat sole, but some are different from others. Draught horses flatter in sole than riding horses. This was a riding horse, and appearance was not natural. As to corns, in some cases could not judge whether new or old, but in this case could do so distinctly. They were of old standing. Has no doubt of this—were four months at least, and perhaps a great deal more. In hind leg found disease in hock joint, which he calls thorough-pin. Swears to certificate as true, No. 10 of process. The smith at Dalkeith, Allison, as good a horse-shoer as in Scotland. Shoes taken off fore feet by witness's orders, and put on again. Seemed to be well shod. Saw horse again in defender's stables on 5th January. Hoof not then in same state as witness had seen it at Dalkeith. Soles had been pared out particularly thin. No other change. Same disease existed. New shoes put on apparently the day before. Witness examined only the fore feet. These shoes were what is called seated shoes—thick on edges outside where rest on crust, and hollowed out towards the sole. If horse had a tender foot or corns, this would prevent hurt from pressure. Witness had those shoes taken off. Pollock was with witness —smith there—no one else. No doubt as to his former opinion being good. There had been bran poultices applied, for bran was still on hoof. The appearances he saw could not be caused by bad shoeing. Witness's opinion was, that horse was not sound, and had not been so for at least four months, and would continue unsound. Foot suffered from pressure. Never could become a warranted sound horse.

The principal object of the cross-examination of this witness was to show, that flatness of horses' feet often exists without disease. The opinion, however, of the feet being *pumiced*, that corns also existed, and that one of the horse's hocks was the seat of thorough-pin, was not altered by the cross-examination. Any one of these diseases, the witness considered, would make the horse unsound.

Alexander Gray, veterinary surgeon, Edinburgh.—Is veterinary surgeon to R. C. H. Remembers pursuer bringing gelding to him on 21st December. Gave a certificate. Examined gelding, which he found unsound. Lame in both fore feet. Had been foundered, and had a corn on inside heel of near fore foot. Has not the slightest doubt that disease of standing for a considerable time. Shoes were removed, and horse examined by witness thoroughly. Must have existed for at least four months previous to his exami-

nation. Soles were thin and convex. There did not appear to be any unusual paring, causing the thinness of sole. Convexity is unnatural, and is consequence of disease caused by founder. Horse may improve after being foundered, and return to his work; but if ever foundered, horse unsound. Founder always causes lameness, but its effect may go off so far as to allow horse to go about its work without appearing to ordinary observers to be lame. A nail driven unskilfully could not have caused appearance of hoof. Quite satisfied unskilful shoeing could not. Takes a considerable time to produce convexity of sole, at least six weeks or two months; but in this horse, judging from external rings and his examination generally, must have been at least four or six months. Horse well enough shod—nothing wrong. Does not think there were leather soles, Saw gelding on Tuesday last. Saw him at Whitson, Newton, Mr. Strachan's farm. Animal was still lame. Witness examined him. Took shoes off. Lame in fore feet—worse in off one. Remains of a corn on inside heel of near fore foot, where it had been before. Appearance of animal was such as witness would have expected, but not so lame. Had been going on soft ground ploughing. Not shaken, but confirmed in his first opinion. Animal is still an unsound horse.

The witness in his cross-examination, explained the differences between acute and chronic founder, and repeated his statement that the rings upon the crust, and the appearance of the sole, led him to believe that the feet had been diseased from four to six months.

Thomas Pollock, veterinary surgeon, Edinburgh.—Examined gelding with Horsburgh on 5th January. Fore feet were in unsound state—thinness of sole when witness saw it—had been caused by paring, as he thought, but soles were diseased independent of paring. Hoof seemed to have been recently poulticed. Corns on both fore feet. Horse was not sound when witness examined him. There was thoroughpin on near hock—must have been diseased for months. Rings on hoof there of long standing. Corns of long standing. Has no hesitation that animal was unsound for months

The witness in his cross-examination, stated that "the inflammatory appearance of the sole, taken separately, might have arisen from recent causes, eight or ten days," but that the horse was lame from the chronic disease, and not from this recent inflammation.

[This closed the case for the plaintiff.]

(*To be continued.*)

SHREWSBURY COUNTY COURT.

Spavin or no Spavin.

WILDBLOOD *v.* BOWRING.

The following were summoned as a jury to try this cause: Mr. Evan Davies, Mr. John Groves, Mr. S. Scoltock, Mr. Henry Bevan, and Mr. Daniel Pritchard. Mr. Smallwood appeared for the plaintiff, and Mr. B. H. Smallwood for the defendant. The plaintiff was Mr. Richard Wildblood, of Bicton Villa, near this town; and the defendant, Mr. Robert Bowring, of Hinstock, in this county. The action was brought to recover £13 15*s.* 6*d.* as compensation in damages for the injury the plaintiff had sustained by the purchase of an unsound horse from the defendant, with which a written warranty had been given. Mr. B. H. Smallwood, on the part of the defendant, admitted the warranty; and also that defendant had received a letter from plaintiff, in which was enclosed a certificate from Mr. Litt, veterinary surgeon.

Mr. Smallwood briefly stated the facts of the case to the jury, which will be found detailed in the evidence.

The Plaintiff said: On the 8th of August last I attended Shrewsbury fair, held in the Smithfield, in company with Mr. Henry Cooke. I saw the defendant there. I had a conversation with him about a grey gelding. Defendant said he would warrant him perfectly sound, and I afterwards purchased the horse for £23 from that warranty. I took the horse to the Bull's Head stables, and afterwards to the Britannia stables, where I had him harnessed, and then proceeded to drive him home, accompanied by Mr. Cooke. When on the Welsh bridge I perceived the horse a little lame, and on reaching the Mount I found that he continued lame. Mr. Cooke got out of the gig to see if a stone had got in his foot, but finding none we proceeded on home at the rate of four or five miles an hour. At the end of the journey the animal appeared very much fatigued. I gave him to a servant named John Evans. Next morning I saw the horse in the stable, and he appeared very dull, and had lumps under his jaw; he seemed to be lame on the near hind leg, and there was a little swelling on the hock. The horse was not in a fit state to do work. I then sent for Mr. Litt, who came on the day following (the 10th) and examined the horse in my presence. The horse got worse, and on Friday (the 11th) I sent my servant with the horse to Mr. Litt, who

gave me a certificate. On the same day I enclosed a copy of the certificate in a letter to Mr. Bowring, [Mr. B. H. Smallwood objected to the letter being produced, but it was subsequently put in and read.] I saw the defendant on the 22d; I asked him why he did not answer my letter. He replied that he was in Ireland at the time. I told him I had written to him about the horse, saying that it was unsound, and that I had enclosed a certificate from Mr. Litt. I also stated that the animal was at the Britannia at his expense. Mr. Bowring and Mr. Tharme went with me to the Britannia stables, and the defendant said he would not have the horse back; but his friend, Mr. Tharme, said defendant would give me £3 if I would keep him. I declined the offer, and said, if he would give me my money back and pay all expenses, that was all I wanted. Defendant subsequently brought Mr. Crowe to see the horse, and the latter said the animal had got the strangles, but he thought he was not lame. The horse was afterwards advertised for sale by Messrs. Tisdale and Jones, and I sent a copy of the letter and advertisement produced to the defendant. I received from Messrs. Tisdale and Jones the sum of £13, 8*s*, 6*d*. I paid for the keep of the horse at the Britannia, including Mr. Litt's charge for attendance, £4 4*s*. I saw the horse at the Britannia from time to time, and he was ill and required constant attention. That was the reason I sent for Mr. Litt.

Cross-examined—Mr. Litt attended the horse from the 11th of August to the 2d of September. When I bought the horse, I examined him, and had him trotted out. There was a pig-cutter present but he did not examine the horse for me. At the time I examined the horse, I saw some small lumps on the jaw, but I did not think them of any consequence. I first mentioned the lumps to Mr. Cooke and my servant, after the purchase of the horse. During the time the horse was at the Britannia, Mr. Hales, of Oswestry, and Mr. Meredith saw him. When I saw defendant at the fair, I told him the animal had got the strangles, and that Mr. Litt said he was spavined. Defendant's servant man, and Mr. Tharme, were present. Defendant said all young horses were liable to have the strangles, and he could not think of taking him back for that, but if he had got spavins he would take him back. I did not propose to leave it to any one to say whether the horse had spavins or not. Mr. Tharme said I could not leave it to a better gentleman than Mr. Crowe. I never said if Mr. Crowe should decide that he had not got spavins I would put up with the strangles, and keep the horse. Mr.

Tharme went for Mr. Crowe, who examined the animal, and said that he had no spavin that he could see, and his opinion was he had none. He also said it was of no consequence a horse having the strangles as all young horses have this disease, and that the animal would be more valuable afterwards. Mr. Litt came in while Mr. Crowe was there, and differed in opinion with Mr. Crowe. Mr. Litt did not get excited. He recommended me to go to Messrs. Teece and Corser. I am certain he did not say he would see me through it. He told me the court was then sitting, and I might go and make an affidavit. He did not go with me to the lawyers.

Mr. Henry Cooke, brother-in-law to the plaintiff, was next examined. His testimony fully corroborated the evidence of last witness.—He was cross-examined by Mr. B. H. Smallwood, but adhered to the statements given in his examination in chief.

John Evans said: I was servant to Mr. Wildblood in August last, and on the 8th of that month remember his bringing home a grey gelding. I put the horse into the stable. The animal refused his food, and appeared very dull and stiff. On the following morning I took him to water; he wanted to drink, but could not swallow. He was rather lame on the near hind hock, and was far from fit to do any work. Mr. Litt came to see the horse on the Thursday, and, as he got worse, I took him on the Friday to Mr. Litt's establishment, and afterwards to the Britannia, where I left him with the ostler. The lumps on the jaw were then larger than when the horse was first brought to Bicton.

Cross-examined—On the Wednesday I told my master the horse walked very stiff and lame on the near hind leg, and that he could not drink his water.

Mr. John Cooke, of the Trench, said he was present when the bargain was closed, and when the warranty was signed. He afterwards accompanied the plaintiff into the stable to look at the horse. He particularly noticed the hind legs, and he thought both hocks appeared spavined. He told plaintiff it would make no difference, as a warranty had been given. He did not notice particularly the horse's jaws. He had had a good deal of experience with horses.

William Davies, ostler at the Brittania Inn, was next examined. He deposed to having noticed the appearances spoken of by the other witnesses, and also to Mr. Litt's attention to the horse.

Mr. William Litt, veterinary surgeon, said: I went over to Bicton, on Thursday, the 10th of August, to see the horse

in question. I found him looking very dull and very much amiss, and on examination I found considerable swelling of the glands underneath the jaws, which I attributed to an attack of strangles. On moving him out of the stable I found that he was lame behind. There was some swelling in both his hocks, but it was greatest in the near hock. I attributed the lameness to the swelling in the hocks. I could not then examine the horse satisfactorily with respect to his lameness, because there was nobody to run him out for me. On the next day he was brought down to my place, and I found the swelling beneath his jaw had increased; and on trotting him out on the stones I perceived that the lameness was greatest in the off hind hock, although the enlargement was greatest in the near. I considered the hocks the seat of lameness, and that it was probably referable to the early stages of spavin. I considered him unsound from two causes, the strangles and the lameness. I ought to add that the enlargement was not bony, and whether he became permanently spavined or not, I think was a question of rest or work. From the state I saw him in I think hard work would have produced permanent spavin. Independent of the strangles he could not have done the ordinary work a horse of his class would be required to do. Strangles frequently produces disease of another kind, and from strangles alone a horse may be unable to go to work for a week or a month, according to the severity of the attack. It sometimes terminates in chronic disease of the lungs, and roaring. On the Sunday following (the 13th), I was called to see the horse at the Britannia, and found him very seriously, even dangerously, ill from the strangles. I continued to attend him, and he recovered from the strangles. In my opinion if the horse had been put to hard work at that time he would have become permanently lame. I noticed after the horse had been taken out, that the lameness continued in the near hock, although the swelling had subsided in the other. The swelling beneath the jaws are only a secondary symptom of strangles. The seeds of the disease must necessarily exist in the system some days prior to the appearance of such symptoms.

Cross-examined—I never told Wildblood to put Bowring into court, and I would see him through it. When Mr. Crowe and I were disputing as to whether strangles was a cause of unsoundness or not, I believe I said to Mr. Wildblood, "That is a question for the law to decide; the court is now sitting, and if you go to Mr. Smallwood you may have that matter settled in a month or so," or words to that

effect. By the early stages of spavin I mean that inflammatory action in the hock which leads to spavin, but which may sometimes, not always, be obviated by care and rest. I said I attributed the horse's lameness to the early stages of spavin. When it becomes a bony spavin the enlargement never goes away. I don't think there was any bony enlargement in the hock. From the symptoms I saw, supposing the horse had been put to work, I believe they would have ended in spavin. The first symptoms of strangles are dulness, loss of appetite, sore throat, and swelling of the glands; and generally, perhaps, there is a cough.

Re-examined—The certificate produced was written by me.

Mr. John Miles Hales, veterinary surgeon, of Oswestry, gave the particulars of his examination of the horse in question on the 1st of September. His evidence generally accorded with that given by Mr. Litt.

Mr. John Meredith, veterinary surgeon, Yockleton, also gave evidence in support of Mr. Litt's statement.

This closed the plaintiff's case.

Mr. B. H. Smallwood addressed the jury at some length, and then called the defendant, who stated that he purchased the horse in question at Drogheda May fair, and had had him in his possession up to the time he sold him to plaintiff, during which time the horse was worked regularly, and he believed him to be sound at the time he sold him. The animal showed no sign of lameness while in his possession. He gave a warranty with the horse to plaintiff. On the 22d of September he saw plaintiff, and had some conversation with him, during which he said if Mr. Crowe stated the horse was spavined he would take him back as he did not care about the strangles. He sent for Mr. Crowe, but was not present when he came to examine the horse, and he left his brother (Mr. Thomas Bowring) to arrange the matter. When the horse was sold by auction, he instructed Cox, the fishmonger, to buy him. He was in Cox's possession a month, and he afterwards kept him himself until Drayton fair, when he disposed of the animal to a neighbour, a Mr. Challenor.

Mr. Thomas Bowring deposed to his being present when Mr. Crowe examined the horse at the Britannia stables; the latter said there was no spavin, and that the horse was sound. Mr. Litt came in at the time, and told Crowe he was surprised he should say so, and that he must know better. Mr. Litt became excited, and told Wildblood to put the matter into a lawyer's hands.

Peter Cassiday, servant to defendant, remembered the horse being bought at Drogheda fair, and stated that he was sound while in Mr. Bowring's possession. He brought him to Shrewsbury fair on the 8th of August.; the horse ate and drank well, and was quite healthy at the time he was sold. He had seen him since he came again into defendant's hands, and he was still sound and had no spavin.

Mr. George Tharme, horse-dealer, of Wolverhampton, said he was present at the interview between Wildblood and Bowring, at the Britannia, when Crowe was called in, and he gave evidence in corroboration of defendant's statement.

Mr. John Madders, horse-dealer, of Hinstock, gave evidence to the effect that he had known the horse before and since the sale by the defendant, and in his opinion he was sound.

Mr. John Cox, fishmonger, Mardol, Shrewsbury, said he bought the horse at the Britannia sale, at defendant's request. He kept the animal a month within three days, and had used him about half a dozen times.

Mr. Challenor, miller, Hinstock, proved the purchase of the horse from the defendant at Market Drayton fair, for £21. He had him examined by a farrier named Matthews, who declared him to be sound.

Mr. Henry Crowe, veterinary surgeon, stated that he went to the Britannia stables to examine the horse, at defendant's request, on 22d of September. His attention was particularly directed to his hocks, and he could not perceive any signs of spavin about them. He believed his hocks to be sound. The horse was suffering from strangles and seemed very weak in consequence. Strangles was a disease that might come on rapidly, although generally it was lurking about the system for some time before it made its appearance.—In his cross-examination, he admitted that the horse went weak with his hind legs and knuckled in his fetlocks, but he attributed that to his having been worked too young, and not to disease. The horse was unfit to work and wanted rest.—By the *Judge:* He considered strangles unsoundness whilst it existed, but not afterwards. He thought a horse was better after he had the strangles than before. Nearly all horses had the disease sometime or other. The swelling under the jaw was a secondary and not a primary symptom. He thought if the swelling had taken place two days after the horse was sold he could not be returnable, but if it appeared a day after he ought to be taken back. The seeds of disease might be lingering in the system for several days before the swelling appeared.

Mr. Ephraim Alfred Friend, veterinary surgeon, residing at

Newport, and formerly of Walsall, was next called. He said he examined the horse on the 4th of the present month, and he considered him remarkably sound about the hocks—singularly so—and he had scarcely ever seen a horse with less appearance of spavin.

Mr. Matthews, farrier, Newport, stated he examined the horse in question for Challenor, and he considered him sound. Strangles, he said, arises from atmospheric influences, and other causes which cannot be accounted for.

Mr. Smallwood then addressed the jury in reply, and commented at some length on the absurdity of the tricks of the "long company," and on the still greater absurdity of the professional evidence adduced for the defence.

The learned *Judge* lucidly summed up at considerable length, and the jury immediately found a verdict for the *Plaintiff* for the full amount claimed.

The hearing of this case occupied upwards of six hours.

MISCELLANEA.

A NEW BULLET EXTRACTOR.

That "necessity is the mother of invention" has just received another illustration, which all who sympathise with our army in the Crimea must hail with peculiar pleasure. The frightful list of our wounded at the hard-fought battles of Alma and Inkerman, suggested to Mr. Ezra Miles (of Stoke Hammond) the idea of constructing an instrument for extracting bullets from the wounds with comparative ease, rapidity, and safety. The contrivance is very simple, consisting of a small air-pump and cylinder, to which a tap is affixed. To this tap is attached a suitable length of flexible tubing, about a quarter of an inch in diameter, lined inside with silver wire to prevent its collapsing. At the other end of this tube there is a small globe, from which a tube sufficiently minute to pass into a bullet-wound, is fixed, the end terminating with an India-rubber collar. On the top of the globe there is a small tap in order to admit a probe to pass down the tube to sound when on the bullet. The mode of operation is this; a vacuum is created in the cylinder; the tube before alluded to is passed into the wound, and when it is ascertained to be on the ball, the tap in the cylinder is opened, when the bullet becomes fixed to the tube by the vacuum

thus created, and is thus withdrawn. The great merit of this invention consists in its obviating the necessity for the painful and dangerous operation of cutting out bullets, and by its means a medical man, with the aid of an assistant to work the air-pump, would be able to accomplish the work which now occupies many surgeons. When the cylinder is once exhausted, it would extract several bullets without the necessity of again working the air-pump. The Medical Board has given directions to Mr. Coxeter, the eminent instrument maker to the University College, to fit up the apparatus. The inventor, who has given the instrument gratuitously to the French and English Governments, has offered, should it be deemed necessary, to go out to the East in the spring, in order to instruct the medical men as to the mode of application. It is believed, by those competent to judge, that the invention may be applied to many other purposes in surgery. The Medical Board has also directed Mr. Miles to turn his attention to the construction of cars for the removal of the wounded. The public are already indebted to that gentleman for the invention of the hydrostatic railway break, which he is now applying to the carriages on the Hereford and Shrewsbury Railway. By this break a train can be stopped in an almost incredibly short time, and consequently it will have a great tendency to prevent railway accidents.

ARMY APPOINTMENTS

It affords us much pleasure to state that Mr. Thomas Jex has been appointed Veterinary Surgeon to the 1st Life Guards, vacant by the decease of Mr. Percivall; and that Mr. John Legrew succeeds to the 2nd Life Guards, in place of Mr. John Wilkinson, who has received the appointment of Principal Veterinary Surgeon to the Army.

OBITUARY.

Died, on the 28th of October, 1854, Mr. W. Hubbick, of Alnwick, Northumberland. Mr. Hubbick entered the profession in 1826, and conducted, up to the time of his death, a highly respectable veterinary practice.

ERRATA IN NO. 325.

Page 3, line 9, *for* "wide and unmerited abuse," *read*, "rude and unmerited abuse."

„ 4, „ 4, „ "last each human trace," *read*, "lost each human trace."

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Communications and Cases.

A CASE OF CYSTIC CALCULUS IN THE HORSE. LITHOTOMY SUCCESSFULLY PERFORMED.

By Charles Spooner, Esq., Principal Professor, Royal Veterinary College.

The animal was the property of S. Delf, Esq., Swaffham, Norfolk. He was strongly built, very active as a hunter, six years old, and about fifteen hands high.

He was admitted into the College Infirmary on the 10th November, 1853, previously to which he had been under the care of Mr. C. Carter, veterinary surgeon, Swaffham, and had also been examined by Mr. D. Sayer, veterinary surgeon, Norwich; both of whom gave it as their opinion that a calculus existed in the bladder.

At the time of admission there were present only slight indications of irritation existing in the urinary organs; the urine, however, on its being examined both chemically and microscopically, was found to be loaded with carbonate of lime.

After the horse had been allowed a few days' rest, a careful examination was made by me, which fully confirmed the diagnosis previously arrived at, and with this my colleagues agreed. Directions were given to prepare him for the operation of lithotomy, by restricting the diet to mashes and administering an aperient occasionally. As the animal was in high condition, it was not deemed advisable to operate before the 25th November.

The animal being cast, was secured after the manner usually adopted for castration, care being especially taken that the hind legs were brought well forward and firmly fixed in an abducted position. When properly secured, two sponges,

saturated with chloroform, were applied to the nostrils, and after inhaling the vapour for about seven minutes, he was brought completely under the anæsthetic influence of the agent. A whalebone staff was now passed along the urethra as high up as the ischial arch, at which place it was cut down upon, and the incision extended in the perineum towards the anal opening sufficiently to admit the introduction of a pair of middle-sized spoon-billed forceps. These, on being passed into the bladder, came at once in contact with the calculus, which was easily grasped by them. In the first effort made to remove the stone, a portion of it was broken off, and the fragment brought out by the instrument. Another attempt was then made, and the calculus being more fully embraced by the forceps, it was with some little difficulty, and by steady and persistent traction, extracted—the principal obstruction to its withdrawal existing in its passage through the prostatic portion of the urethra. The bladder was subsequently washed out, with tepid water injected by means of a catheter attached to the stomach-pump. Two or three sutures closed the wound in the perineum. The operation being thus completed, the horse was released from the hobbles, and allowed to rise. During the time occupied in the performance of the operation, it was found necessary to remove the sponges containing the chloroform from the animal's nostrils for a few minutes at a time to prevent any serious consequences being produced by the hypnotic. The horse was thus safely kept under the influence of the agent for nearly three quarters of an hour; the operation itself lasting about twenty-five minutes. After the chloroform had been inhaled about eight minutes, the pulse rose to 46, at which it continued until the animal was allowed to get up. But little blood was lost during the operation, and shortly after the horse rose he urinated freely through the natural channel.

The patient was then led back to his box, and quietude enjoined. At five o'clock p.m., he was again observed to pass his urine without pain, a very small portion of it only escaping through the wound. The fæces were also voided in a natural state. Ten o'clock p.m., pulse 40. No swelling of the parts as yet exists, the appetite is good, and the animal is apparently free from pain: left for the night.

November 26.—The symptoms are precisely the same as last evening. The general appearance of the animal and the wound is favorable, and the appetite continues good.

27th.—Pulse 32, and soft. Urinating freely, none of it passing through the wound; fæces soft; appetite good.

Towards the evening the pulse increased to 38, and the animal appeared rather dull.

28th.—Pulse 48; some irritative fever being present: he has urinated, and a small quantity again passes through the wound. The suppurative action has commenced. Give Ol. Lini, Oss, and throw up an enema occasionally. Carefully remove the sutures, and keep the parts clean by ablutions of tepid water.

29th.—The wound suppurating freely; the penis is slightly swollen from the infiltration of serum into the areolar tissue. The mouth is cool; the pulse has fallen to 36; the febrile excitement is diminished. Eleven o'clock p.m., pulse 34, and all the other symptoms favorable. Return to plain diet.

30th.—Pulse 32; appetite good; fæces soft; and the urine has been seen to pass in a full stream through the natural channel, a small quantity only escaping by the wound.

December 1.—Symptoms quite as favorable as yesterday: ordered a little walking exercise.

2d.—The animal continues to progress favorably.

3d.—The wound is closed, and no unfavorable symptoms are present. The sheath and penis are, however, still a little swollen.—The horse continued to do well up to the 10th of December, when it was observed that an increased swelling of the sheath had taken place, extending to the contiguous parts, and involving particularly that portion of the scrotum where the cicatrix from castration existed. The swelling gradually became so great as to interfere with the movements of the hind limbs. Ordered that fomentations be applied several times in the day. The formation of pus was anticipated, but no fluctuation could be felt in the parts until the 1st January, 1854, when it was evident that a quantity of matter had accumulated on both sides of the scrotal sac. A free incision being made, exit was given to a large quantity of fetid pus from each side. The swelling decreased after this, but the discharge for a time was thin, although free from smell. It was thought that the abscess in the scrotum depended upon the extravasation of sanguineous fluid from the wound, mingled probably with a small quantity of urine, which had gravitated to this part.

On the 20th of January the horse was fully restored to health, and was soon afterwards removed from the Infirmary.

He has recently been sold in London at the hammer, in perfect health and condition as a hunter, for a high price.

Description of the Calculus.—Its form was that of an irregular ovoid. Its weight, between two and three ounces. Colour, a light brown. Surface, granular.

Analysis.—A fragment being subjected to heat on a piece of platinum foil, emitted, first, a urinous smell, and afterwards, as it blackened, the odour of animal matter was given off. The flame being urged by means of the blow-pipe, the mass became white, and lost about half its weight. This being dissolved in dilute hydrochloric acid, the oxalate of ammonia threw down an abundant white precipitate; but water of ammonia yielded none.

A few grains being placed in a test-tube, and hydrochloric acid poured over them, they underwent solution with considerable effervescence, leaving abundant flocculi.

The composition, therefore, is, carbonate of lime and animal matter; this last being, probably, mucus.

Remarks.—It would seem that the existence of a calculus composed wholly of carbonate of lime is rare in the human subject, as Professor Brande states that, among several hundred calculi which he has examined, he has never met with one, although he has seen many beautiful specimens taken from other animals.

From the urine of all the herbivora it is well known that a deposition of carbonate of lime is of constant occurrence, and especially so from that of the horse. "When examined by the microscope, after being washed with water, the particles of this carbonate are found to be small transparent spheres, like globules of glass, and strongly refracting light. Allowed to dry, and examined after immersion in Canada balsam, their structure is beautifully distinct, each sphere being made up of myriads of minute needles, radiating from a common centre. With polarised light, these interesting objects present a series of concentric coloured rings, traversed by a black cross."—*Dr. Golding Bird.*

The formation of this deposit is owing to a metamorphosis that takes place in the urea, by which it becomes converted into carbonate of ammonia, through the assimilation of water with its elements; and this being acted on by the soluble lime salts, separated from the blood by the kidneys, an insoluble carbonate of lime is thrown down.

1 atom Urea . . .	$= C_2 H_4 N_2 O_2$
2 atoms Water . . .	$= H_2 O_2$
2 atoms Carbonate Ammonia	$= C_2 H_6 N_2 O_4$

A diseased condition of the mucous lining of either the pelvis, of the kidney, or of the bladder, is necessary to effect this change, the action being purely catalytic; and when once this disease of the mucous membrane is set up, the ammoniacal urine becomes a constant irritant, andgives rise

at length to a chronic form of inflammation, which results in the secretion of a large quantity of mucus of a more viscid character than natural, and this continuing to act as a ferment, induces the like changes in the urinary secretion, so that the deposition of carbonate of lime oftentimes becomes excessive. Sometimes this is retained in the bladder in the form of a loosely aggregated mass, there being a specimen in the College Museum in which the urinary cyst is filled to distension with it. It weighs thirteen pounds avoirdupois. At other times, by the exertion of the force of corpuscular attraction, the particles aggregate together, and thus a true calculus is formed.

The absence of the phosphates in these concretions has been noticed by some writers. It is, according to Liebig, owing to the small amount of phosphorus, or of the phosphates existing in the food of the graminivora. He moreover says, that "the organism collects all the phosphates produced by the metamorphosis of the tissues, and employs them for the development of the bones and the phosphorized constituents of the brain. The organs of excretion do not separate these salts from the blood. The phosphoric acid which, by the change of matter, is separated in the uncombined state, is not expelled from the body as phosphate of soda, but we find it in the solid excrements in the form of insoluble phosphates."

Occasionally crystals of oxalate of lime are found associated with these concretions taken from the horse. Especially is this the case in those specimens forwarded from India. Will our friends inform us if calculous affections are common in that country, and what are the probable causes which give rise to them?

At one time the origin of this compound was assigned to some of the varieties of the rumex, probably the *Rumex Acetosa*, which is so abundantly met with among the grasses, and which, being dried with them in the making of hay, the animal partook of the same as food, and thus conveyed the salt into the blood, whence it was eliminated by the kidneys. A more probable view, however, of its formation is, that a mal-assimilation of the ingesta takes place from an impairment of the digestive function, and a change analogous to that which obtains in the formation of carbonate of ammonia results; for, if two equivalents of carbonic acid lose one of oxygen, oxalic acid is formed.

2 Eq. Carbonic Acid $C_2 O_4 - O = C_2 O_3$ Oxalic Acid, 1 Eq.

This acid, from its superior affinity for lime, will imme

diately separate it from all its other combinations in the urine, forming an oxalate of lime.

Dr. Prout was of opinion that the source of oxalic acid might be traced to the sugar taken in as aliment, and which finding its way into the blood, was given off by the kidneys when not assimilated. And if we bear in mind the large quantity of amylaceous matters the horse feeds on, and which, before they are converted into nutriment, have to be changed into a saccharine principle, so as to become absorbed, it is not, perhaps, too much to suppose that some derangement of the digestive process would be productive of this acid, it being remembered that the proximate principles allied to sugar, such as starch, gum, and woody fibre, have a tendency, in common with it, under the influence of oxidizing agents, to undergo conversion into oxalic acid.

Dr. Golding Bird, however, considers that the existence of this acid in the urine is rather owing to an undue quantity of urea in this secretion, and that the disease, "ought to be regarded as a form of *azoturia* (of which an excess of urea is the prevalent indication) in which the vital chemistry of the kidney has converted part of the urea, or of the elements which would in health have formed this substance, into oxalic acid."

He further says, "the relation between urea and oxalic acid is readily shown; for if we conceive urea to exist in the blood, and it be the duty of the kidney to separate it, we have only to suppose the organ to exert a slight deoxidating or decomposing influence to insure the conversion of urea into oxalate of ammonia. We know that, under a depressing influence exerted on the nervous system at large, or upon a portion of it connected with the functions of the kidney, as during typhus, adynamic fever, on the one hand, and blows over, or a fracture of, the spine, on the other, such decomposing influence is unquestionable, and the urine becomes loaded with carbonate of ammonia, from a re-arrangement of the component elements of the urea; one atom of urea and two atoms of water being resolved into two atoms of carbonate of ammonia. If, then, a less energetic amount of this morbidly-depressing influence be supposed to be exerted we shall have one atom of urea and two atoms of water lose an atom of oxygen to become converted into oxalic acid and ammonia."

Some chemico-pathologists have thought that an ammonia salt of an acid, called the *oxaluric*, exists in the urine, formed by the elements of urea and oxalic acid.

1 Eq. Urea . .	$C_2\ H_4\ N_2\ O_2$
2 Eq. Oxalic Acid .	$C_4\ \ \ O_6$
1 Eq. Oxaluric Acid .	$C_6\ H_4\ N_2\ O_8$

By retention or heat, this oxalurate of ammonia becomes changed into oxalate of ammonia and urea, and the necessary consequence of this would be the deposition of oxalate of lime from the calcareous salts of the urine. And if it be asked, "Whence are the nitrogenized matters derived, whose metamorphoses give rise to the formation of oxalic acid and ammonia? Are these derived from the tissues of the body, like healthy urea and uric acid? Of course it is quite possible that such may be their origin; but as the quantity of oxalate of lime is always the greatest after a full meal, and often absent in the *urina sanguinis*, or that passed on rising in the morning, and, moreover, disappearing under the influence of carefully-regulated diet, and re-appearing on returning to the use of unwholesome food, it is highly probable that the salt is in the majority, if not in all cases, primarily derived from the mal-assimilated elements of the food, and not, like uric acid generally, a product of metamorphosed tissues."

Lastly, to mention no more, Liebig maintains that oxalic acid is a derivative of uric acid, and not of urea. But as this acid is not commonly met with in the urine of the herbivora, it being in them the *hippuric* acid, it seems more probable that the view taken by either Dr. Prout or Dr. Bird is the true one, and thus the "*fons et origo malorum*" is in the digestive organs.

A COMMUNICATION

From C. Dickens, M.R.C.V.S., Kimbolton.

Sir—The first of January, 1828, produced the first number of a periodical devoted to our science. It will not become me here to ask, What has it accomplished for us? Sufficient to know that it still exists, having reached its twenty-eighth birthday.

The same month of 1847 announced the loss of one of its *Editors*, the indefatigable Youatt. And now the corresponding month of 1855 conveys to the profession the mournful intelligence of the death of his colleague, the much lamented and talented Percivall: a name familiar to us as "household words;" the name of one who stood first and foremost as a veterinary author; whose works, the result of a life of industry and observation, may be styled the pupil's guide,

and the practitioner's reference. Mr. Harry Daws, in allusion to his memory, feelingly writes, "*Peace to his manes,*" a sentiment which I am sure will call forth the unanimous response of the whole profession.

A laudable spirit has of late years sprung up, of paying some lasting tokens of regard to those distinguished members who have fagged hard in our common cause; and perhaps, some such may have been in anticipation for our departed friend; but the fell tyrant Death had executed his commission ere the opportune period arrived. Still I cannot conceive that anything would have cheered him more on his way while living, or have proved a greater solace in his declining days, or be a more grateful tribute to his memory, than that a portion of his friends, at least, should rally round the *Veterinarian*, "his pet," and supply it with mental food of a good and nutritious kind, so as to keep it in excellent health, and if possible, in better "going" order than even when piloted by himself. Its direction, however, has been transferred to your hands; and you have already given good earnest of your Editorial capacities. If you receive such assistance from without as you deserve, I shall be disappointed if the readers of our Journal have not much pleasure "looming in the distance."

A writer in the last number rejoices in the return of old contributors. May they increase! For you may depend upon it that the report of important cases from men of high standing and sterling worth are far more welcome to the majority of your readers than continued disputes upon the respective merits of "Homœopathic or Allopathic systems;" for with all due respect to their earnest, and I am bounden to believe sincere, advocates, I would submit that that practitioner of veterinary medicine will best succeed who follows out the answer given by the painter, who when questioned as to the richness and durability of his colours, said that he who compounds his colours with *brains*, and exhibits them with tact and discretion, will be most successful.

But alas! time works changes. Many a valued friend has been beckoned from our crowd with whom we shall never again hold converse except through the pages of our journals; for thanks to the enlightened age we live in, and to an unrestricted press, we are allowed to receive benefit even from the labours of the dead; a privilege the senior veterinarian, even of the present day, had not in early life. Some there are, perhaps, who will say that increased reputation and full employment have such claims as not to leave time even for the report of an occasional case, though it be

important. To such I would reply—It is busy men who do find time. But I fear the majority of us, like some of the steeds we ride, require an occasional touch with the *persuaders* to keep us going! Such an instrument, Messrs. Editors, is placed in your hands, and you, like skilful jockeys know well, when and how to apply it judiciously.

As far back as 1852, there appeared a very amusing letter, to which was appended a most interesting and instructive case, from Mr. Litt, V.S., of Shrewsbury, under the title of "Opinions and Experiences of a Country Veterinarian." I have yet reason to hope that that gentlemen will fulfil his promise "that others should follow;" and if so, I know they will be productive of much good. In the meantime, I, being one of that humble class to whom Mr. Litt more particularly alludes, namely, a *Country Practitioner*, venture to send you a case or two. I fear they are of that nature which will excite a smile from some of our rising aristocrats, but but not in *derision* I hope. They are such as occasionally cross the path of the country Veterinarian, whose duty is, "To cast round the world an equal eye, and feel for all that live." Still I fear you will call them a rough sample; yet if these are worthy your acceptation, I am in possession of a considerable bulk, from which you are occasionally quite welcome to have many more. And now, hoping I may be your *very worst* contributor,

Believe me, dear sirs,
Yours faithfully.

CASE OF UTERINE ABSCESS IN A HEIFER.

By the Same.

Dec. 25th, 1853. My immediate attention was requested by a cattle-dealer, living five miles hence, to give an opinion upon a very handsome short-horned heifer which he had recently purchased, and which he said had been dull for some days. *Present symptoms*:—The animal is down, and with difficulty made to rise. Surface of the body cold; also the legs, ears, and nose. Pulse almost imperceptible. Is continually straining, accompanied with a most piteous moan. Abdomen much distended. It was supposed that she was trying to rid herself of a dead fœtus. My first determination was to rouse her flagging powers, as she seemed to be fast sinking. Therefore I administered a quart of warm ale with some ginger. Upon

examination *per vaginam*, I was surprised to find the uterus quite *closed*. I then translated my hand to the *rectum*, and explored it from above. Here I could only satisfy myself that the uterus was *tenanted* by an incomprehensible mass of matter, and the sooner it was ejected the better. I again placed my hand in the *vagina*, and after some fifteen minutes patience and perseverance, by a steady and gentle rotatory motion, succeeded in introducing one finger into the cervix of the womb; upon the withdrawal of which, at least two gallons of laudable pus escaped, and then followed a scene worth a long journey to witness. A change of countenance depicting *misery* and *pain*, and as was thought by all, approaching *death*, to one of cheerfulness beaming with delight. The animal devoured a large mash afterwards, and, from that time, all was well. A slight discharge continued for a few successive days, when it entirely ceased, and the owner sold her a month after, to use his own words, as "a right one." The medicinal treatment resorted to consisted in giving a carminative drink or two.

AMPUTATION OF THE WOMB OF A SOW.

By the Same.

Some few cases of the above operation being had recourse to in the cow, are recorded; but mine is in a lower patient, yet, in this instance, not one of less value; namely, a sow.

In the early part of March, 1853, being in attendance on some horses at Lord St. John's, Milchtown Park, Beds., I was solicited to look at a remarkable fine sow. The day prior, after giving birth to twelve fine pigs, eleven of which were living, an inversion of the uterus had taken place. It had been twice put back and sutured ineffectually. It now presented a most disgusting appearance, as it was fast approaching to *gangrene*. The labia, perineum, and abdomen had lost their healthy hue; her lacteal secretion, from being at first great, had now become quite suspended, and her little family were searching in vain for more of their natural food. Knowing that what I did, however the case might terminate, would be satisfactory, after placing two strong ligatures around the cervix uteri, I at once *excised* the organ, as the only chance, and that a remote one, of saving my patient. The adjacent parts were then well covered with linseed oil, the only emollient agent at hand. I ordered that she should be plentifully

supplied with milk, and the young ones well covered up with straw, in order that *warmth* might partially supply the want of food; for it was evident that if the mother were lost the family must follow. The next day I was both pleased and surprised to find that great increase of strength was shown by my patient. She had partaken of some milk, and also a pint of peas. The discoloration was subsiding, and her mammary gland was giving a little milk. From this time the secretion daily increased, and she turned out a most excellent mother; and after, in a comparatively short time, rendering her young ones independent, she was fed, and arrived at great '*bacon weight.*'

OPINIONS AND EXPERIENCES OF A COUNTRY VETERINARIAN.

No. 2.

URETHRAL AND URETAL CALCULI.

Dear Sirs,—Many months have passed away since the first of this series of articles appeared in the pages of "*The Veterinarian.*" I fear I shall be looked upon as rather a dilatory correspondent, but many things have interfered to prevent their earlier continuance. Once more, however, I have ventured to resume my pen, and it is probable that we shall go on more regularly in future.

On the 28th of July, 1853, I was consulted by a farmer in the neighbourhood of this town, Mr. E. of Chatford, on the case of a brown cart colt, rising five years old, said to have been suffering for several months from some singular disease, upon which the farrier, who had hitherto been in the habit of attending on the sick animals in Mr. E.'s stock, could evidently throw no light. The symptoms, however, were by no means obscure, being, in fact, such as ordinarily accompany a case of urinary calculus. I found my patient had much difficulty in staling, and his urine, which was passed only in small quantities, at frequent intervals, was thick, gravelly, and occasionally tinged with blood; the act itself being always accompanied with much straining, and other manifestations of extreme pain. The pulse and respiration were slightly accelerated, but his appetite was not at all impaired, although he appeared to be somewhat lower in condition than his fellows of the same stable. An examination, *per rectum*, readily detected a calculus about the size of a large walnut, inclining to

the left side, somewhere about the region of the bladder, but evidently *not in the bladder itself.* I confess that at this time I was inclined to look upon the membranous portion of the urethra as the seat of the concretion. Subsequent investigation and consideration, as will be seen, enabled me shortly to form a more correct diagnosis. I now made inquiry into the kind of treatment to which my patient had been already submitted, and this elicited the curious fact, that amongst other things the poor animal *had been daily drenched with large doses of* LIME WATER!

Now, this I consider rather an interesting illustration of empiricism, and one that merits a word or two of comment. I know the individual who prescribed and practised this absurdity well, and he is certainly one of the best of his class: indeed, I will say, decidedly *the* best of the old school of practitioners with whom I have met, and their "name is legion." But his professional knowledge is entirely and merely practical; of theory or science such men know nothing, and hence when once taken out of the beaten path of their experience they are completely at fault. The circumstance here narrated is peculiarly instructive of this fact. There is perhaps no malady to which the horse is liable, whose symptoms are clearer, or whose diagnosis is more easy than that of stone in the bladder; but the disease is somewhat rare, and we have here an instance of a practitioner of forty years' experience in attendance on such a case during a space of three months, without once suspecting the true nature of the affection, and whose consequent ignorance led him to administer that particular agent which, of all others, he ought especially to have avoided.

How often is this the case? and how frequently does the poor patient fall a victim to an ignorance which dictates not only such treatment as is *not beneficial,* but that which is often positively injurious, productive of incalculable suffering, and very often of loss of life itself. I met the other day a person with whom I have a trifling acquaintance, who aspires to some veterinary knowledge, practising as an amateur occasionally, not on his own animals alone, but extending his services also to such of his neighbours as are pleased to put faith in his professional skill. He seemed rather anxious to inform me that he had lost, within the last few days, a very valuable horse of his own. "Indeed," I remarked, "and of what disease?"—"Oh!" he replied, "a very strong inflammation, he breathed uncommonly short, coughed, ran at the nose, and his eyes were very red, and *swollen into his head.*"—"And the treatment?"—"Oh, nobody could have cured him! You,

yourself, could have done no more. I bled him heavily three times, blistered his sides very extensively, and got his bowels well opened: indeed, he purged well up to his death. The inflammation was too strong—nothing could get beyond it!" What other result could the veterinary surgeon have expected from all this bleeding, blistering, and purging, in a bad case of influenza? But my clever friend was quite satisfied he had done the very best under all the circumstances. The principles of such practice are certainly rather more active, but they are no worse in theory than that of the practitioner of forty years' standing who prescribes lime water in a case of stone.

Miserable spirit of infatuation! Mighty Moloch of Empiricism,

"That moves unchecked, and triumphs in the sun."

Thine is, indeed, a shrine of blood, and thy victims are numberless. Much dost thou exact from thy worshippers, and much, indeed, do they pay thee. Property, wealth, yea! life itself. Vainly does science preach, and vainly is the light of truth shed abroad. Ignorance still counts her millions on British soil, and these are they who kneel at thy altar, and prostrate themselves beneath the wheels of thy car! But to resume.

Having explained to my employer the serious nature of the disease with which we had to contend, I prescribed Acid. Hydrochlor. ʒij. to be administered daily in cold water, and requested that I should be allowed to see my patient again in the course of the following week. On the fourth of the next month an opportunity was afforded me of examining him a second time, which I was now able to do more carefully even than at first. The general symptoms appeared to be somewhat alleviated, but the calculus was still perceptible *per rectum*, in the same situation as before, immovable, and firmly impacted somewhere near the bladder. Careful consideration now led me to surmise that the seat of the concretion might probably be one of the ureters, rather than the urethra as I had at first supposed; and a more minute investigation rendered this view of the case tolerably clear, as the ureter on the left side could be distinctly felt considerably thickened throughout its entire course. As this solution, however, did not sufficiently explain the very great difficulty experienced by the animal in the act of staling, I now carefully examined the urethra throughout its whole length, and discovered, in the penal portion of the canal, and near the glans, a second calculus apparently about the same shape

and size as the one already described. This I lost no time in extracting, an operation easily accomplished by simply cutting down on the concretion, and effected with no further restraint than the twitch. Immediate relief followed. He staled at once freely, and without any manifestation of pain, and his owner was not slow to indulge the hope of his ultimate recovery. The evil, however, was not to be so easily got rid of though my course was sufficiently clear; and I determined to persevere with the acid, thinking it just probable that by this means the stone might become so far softened in its structure as to admit of being broken down with the fingers, or otherwise forced onwards to the bladder.

In this way matters went on up to the 12th of the same month, on which day I was summoned in haste to Chatford by the intelligence that my patient had suddenly become worse. On my arrival I found him suffering at intervals extreme pain, with a pulse upwards of 80 and very feeble, respiration weak and hurried, extremities cold, and buccal membrane clammy and fetid. The symptoms were, in fact, those of subacute peritonitis, of a character likely to terminate fatally. Belladonna and opiate mixtures were administered night and morning, but without any effect beyond that of mitigating in some degree the extreme pain, and the poor animal gradually sunk, and died on the night of the 18th.

Post-mortem examination, six hours after death, demonstrated considerable disease of the mucous coat of the bladder, and great thickening of the ureter on the left side, throughout its entire course, in the canal of which, within about two inches of the bladder, firmly impacted and completely closing the channel of communication with the kidney, was the calculus I have already spoken of. Kidney, however, on this side there was none: indeed not the slightest trace of anything resembling the gland could be observed, but in its place were several large abscesses. It was the bursting of one of these abscesses which appeared to have been the exciting cause of death; a large quantity, not less, I think, than half a gallon, of pus having thereby escaped into the abdominal cavity, and set up that inflammation of the peritoneum which eventually proved fatal. But it is equally clear that the calculus in question was the real though more remote cause of all the mischief. By the gradual growth of the concretion the ureter became eventually closed, and the urine was thus driven back upon the kidney which thereby became inflamed. Suppuration followed, and absorption of the gland, as the abscesses increased, until at length the poor sufferer sunk under the singular complica-

tion of diseases which I have attempted to describe. What may appear particularly worthy of remark is the fact, that all this mischief should have been going on so long a time without the manifestation of any more serious symptoms. But this is a circumstance of consideration that very frequently forces itself on the Veterinarian. Animals that up to within a few hours of death have always appeared in the enjoyment of high health are frequently found to have sunk under some malady whose gradual and insidious progress has probably been the work of months or even years. So strange and mysterious are the powers of this marvellous mechanism we call animal life.

Such then was the somewhat unsatisfactory termination of this highly interesting case. Whether or not a more early application of correct treatment could have obviated the fatal consequence is a matter of speculation on which it would be idle to dilate. For my own part, I confess that I have a very strong opinion on the subject.

Perhaps I ought to add, in conclusion, that the calculi resembled in external appearance the description called "mulberry." They are at present in the possession of Professor Morton, to whom I had much pleasure in presenting them, as to one who has devoted much valuable time and ability to the subject of calculous concretions in the lower animals. I remain, yours, &c.,

W. Litt, M.R.C.V.S.

Shrewsbury; *Feb.* 1, 1855.

[We thank Mr. Litt for these concretions, and also the interesting account above recorded. The remarks made in the case of Cystic Calculus, by Professor Spooner, precludes the necessity of adding anything to the formation of these deposits.

In all probability, wherever they may be found, they have a common origin in the pelvis of the kidney. Here, at any rate, the change in the urine first takes place, and the nucleus of each calculus is formed. Sometimes it is retained in this cavity, and ultimately forms a renal calculus, which often attains a considerable size. At other times it becomes dislodged, and in its passage towards the bladder is arrested in the ureter, and then it constitutes a uretal calculus. Should it enter the bladder, it may here remain for a long period, gradually increasing in size by the accretion of particles, and a cystic calculus will be the result. Or, escaping thence, it passes into the urethra, and being lodged within that canal, it forms a urethral calculus.

Examination of the Calculi.—The weight of the uretal calculus was ʒij ℈j; that of the urethral ʒij. The external surface of each was nodulated, thus bearing a resemblance to what has been designated the mulberry calculus, as stated by Mr. Litt. The colour was a light yellowish brown, and a few fragments being subjected to the action of hydrochloric acid, they dissolved with considerable effervescence, and from the solution lime was readily thrown down by the oxalate of ammonia. Another portion comported itself under the blow-pipe exactly as does the carbonate of lime formation. Therefore the inference deducible can only be that this is the constitution of these concretions.]

ON THE TREATMENT OF OPEN JOINTS.

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

In the December number of your journal, for 1845, I recorded a case of open knee-joint, successfully treated by the application of Hydrargyri Bichloridum. From that time to the present I have met with many similar cases, and have employed a variety of therapeutical agents with varied success. In the month of October, 1854, I was called to a case of open pastern joint in the near hind leg of a horse, which was the most serious one I had ever met with. This, doubtless, was owing to the extraordinary amount of motion that part of the limb is capable of performing. I was induced to try the flour, beer, and paper treatment, which has been so ably described by some of our talented practitioners. This mode of treatment I persevered in for some time with, I regret to say, total failure. I therefore fell back upon my old method, viz., the use of Hyd. Bichlor. After carefully removing the synovial fluid which had escaped from the joint, I placed a mixture of Hyd. Bichlor., Peruvian bark, and flour, upon a piece of raw cotton. This was carefully laid upon the wound, and kept in its place by means of a calico bandage, four yards in length and two inches wide, wrung out of starch-water; a second starch bandage was then placed over the first, and a dry bandage over this.

The horse was properly secured to the rack to prevent any injury to the leg, and absolute rest enjoined. I found this case of no ordinary character to treat, owing to the facility with which the animal moved his limb. To prevent this, I applied Ung. Canth., q.s. to the inner part of the hock-

joint, which effected the purpose I intended. In about a week afterwards, I was anxious to ascertain the result of the treatment adopted. The joint I found was only partially closed; still this was something gained. I therefore applied a second dressing, similar to the first, which in another week effectually sealed up the wound; and in the course of the third week the joint was as perfect as any other, with little or no swelling remaining.

I was not a little pleased on reading your translation of Professor Rey's article on 'Wounds of the Articulations,' in the *Veterinarian* for the last month. I must cordially agree with the learned Professor in his remarks upon the agent I have so frequently used in the treatment of this class of wounds; and can only state, in conclusion, that I believe it to be one of the most valuable therapeutics the Veterinary Surgeon possesses for these lesions.

AN UNUSUAL CASE OF ULCERATION OF THE MUCOUS COAT OF THE SMALL INTESTINES, FOLLOWED BY RUPTURE OF THE MUSCULAR COAT.

By J. Woodger, M.R.C.V.S.

On Thursday, January 18, 1855, I was requested to see, without loss of time, a chesnut gelding, the property of Mr. Fawkes, who resides at Chelsea. This horse had been long known to me. He was a fine, valuable animal, a very fast trotter, and had been recently clipped.

On inquiring of the messenger what was the matter, I was informed that the horse appeared to be perfectly well in the morning, had eaten his food and drank his water, and that the alvine evacuations were natural. There being, however, an intention to take him out for a drive during the afternoon, another feed of corn was given to him at eleven o'clock. The groom having occasion to enter the stable, about one hour after the corn was placed in the manger, to his great surprise he found the animal with his head thrust in one corner of the building, breathing laboriously; the oats being untouched. The proprietor was at once communicated with, and, after some brief delay, a messenger was despatched, requesting my speedy attendance.

The horse having been lately clipped, my ideas first reverted to that circumstance. I therefore inquired if he had been exposed to cold air within the last forty-eight hours, or had drank any cold water? The answer to these questions was a decided negative, and I could learn no more than that the horse was standing perfectly still, as I have described, and breathing "violently." My partner, Mr. Broad, gave the man a diffusible stimulant, consisting of—

Ether. Sulphuric.,
Tinct. Opii., ana fʒj;
Aquæ, fʒxij. M.

and stated that I would quickly follow the messenger.

I, however, was in no great haste, not imagining that the symptoms portended danger, as I regarded the case one of ordinary congestion, and thought it would, like the majority of these affections, readily yield to the remedy sent. At half-past four, p. m., I reached Chelsea, and found the report I had received true in every particular. The horse was still standing, with his head hanging down, and the breathing was both quick and laboured. I watched him for some time, but he neither moved or stirred from the place. The heart's action was plainly perceptible to a spectator, but there was no pulse to be felt at any artery. The buccal membrane was palid, but not clammy. The Schneiderian membrane was also colourless. The extremities were devoid of warmth, and the animal several times shook as if from the impression of cold on the body. The draught had been easily given, but no relief of the symptoms whatever had followed its administration. The excretions were healthy. I now began to make a more critical examination. The head, when held up, produced no perceptible increase of suffering; manipulation of the sides drew forth no response; indeed the body appeared to want sensation in every part rather than in any one place, so as to awaken suspicion of any organ being affected in particular. Here, I thought, is a puzzling case. Something evidently is very wrong, yet the symptoms denote nothing beyond congestion. Congestion, if universal, to be sure could not lead to any serious results; but in such instances it is accompanied with visible swellings, and other easily-recognized symptoms. The proprietor wanted me to bleed, and even pressed me to do so. This I refused, for I knew no blood could be obtained until reaction had been set up. I therefore applied a sinapism to the sides, stimulated the throat and chest, had the legs fomented and bandaged, and gave another draught as before, which the animal swallowed

freely. The owner further suggested that I should blister the sides. I was glad the ordinary blister gave me an easy excuse to decline doing so, seeing how much had already been done, for I was fearful, if full sensation of the skin, &c., returned, that nature might resent my interference with so large a surface of the body. To the master's inquiry as to what was the matter? I replied that I could see nothing beyond congestion, although the state of the visible mucous membranes was not in accordance with such a condition of the vascular system. Still all that had been done did not seem to produce the slightest change. The mustard and the stimulants appeared to be without effect, the hot fomentations had not increased the temperature of the legs, and the draughts were swallowed as if they had been so much water. I however left another draught, and promised to call early on the following morning.

Jan. 19th.—I was at Chelsea by nine o'clock. On my arrival I ascertained that the horse had died at ten the previous night. An hour before the time last mentioned, the owner, in opposition to my opinion, had bled, or rather endeavoured to bleed the animal, when about a pint of thick treacle-like fluid was abstracted, after which the horse fell to rise no more.

I proceeded to examine the body at once. Upon removing the skin there were indications of intense congestion, the areolar tissue being of a bright red colour. On cutting through the walls of the abdomen a quantity of fluid of a reddish-brown colour escaped, and with it were mingled flocculi of lymph, and a small portion of ingesta. The liquid very much resembled that which we sometimes meet with after acute pleurisy has terminated fatally. Seeing the ingesta, I exclaimed there is a rupture! but after carefully looking over the intestines I could fine none in any of them. The stomach was also entire. Still there was positive evidence that all could not be so perfect as it seemingly was, and it was only after repeated examinations that my eye caught sight of a dark-coloured enlargement on the mesentery, just above the centre of the ileum. It proved to be a small portion of the contents of the intestine which had entered between the two layers of the peritoneum. On either side of this were openings of an irregular shape, which at once accounted for the escape of the ingesta into the abdominal cavity. These lesions were also connected with rupture of the vessels, and had a free communication with the interior of the bowels. They were situated on the upper surface of the tube, ranging in direct lines on either side of the mesen-

tery. The largest would give egress to a filbert, and the smallest might allow a pea to pass through it. The peritoneum was reddened throughout; but the mucous membrane of the intestine was not much congested. Upon exposing the whole of the interior of the intestines, an ulcer, penetrating the lining membrane was discovered. This had removed about two inches in length, by one in breadth, of the mucous coat. A portion of the food, partaken of in the morning, had passed into the opening without any great resistance being offered, and came directly upon the muscular coat, and which, strange to say, had proved incapable of resisting the force of the peristaltic action. It had consequently yielded, and a rent in this tunic eight inches in length had actually been induced by so slight a cause; and a portion of the ingesta was driven, by the sudden disturbance of the function of the intestines, between the two folds of peritoneum forming the mesentery. This constituted the enlargement to which my attention was directed in the first instance. The serous membrane gave way in various places, and being thus torn, the rents had that jagged and uneven appearance which might induce one hastily to conclude they were so many ulcers. For the elucidation of this true condition of the parts, I must acknowledge myself indebted to the careful dissection of Mr. G. Varnell, assistant professor at the Royal Veterinary College, to whom I submitted the morbid specimen for inspection, considering it one of unusual occurrence.

Remarks. We have here another proof of the frequent impossibility of coming to a positive conclusion concerning abdominal diseases. In this case the leading symptoms pointed to the thorax as the chief seat of the affection. The excited respiration, the pendulous head, and stationary attitude of the animal, would all sway the judgment in this direction. It is true there were contradictory indications, such as the pallid aspect of the conjunctival and nasal membranes, the non-action of the external agents, the clammy state of the mouth, and the cold chills which from time to time pervaded the body. Manipulations were freely employed, endeavouring to draw forth some expression of suffering, but they elicited no response.

Still no medicine whatever, had we known the precise condition of the bowels that existed, could have been of the slightest benefit; for the first indication of disturbed health announced, we may reasonably suppose, the termination of the disorder. When the posterior intestines are ulcerated, dysentery generally shows itself, and when the small intestines are thus

affected, emaciation usually results. But in this horse, the ulceration not being very rapid, no signs whatever were observed which would induce the owner to seek advice. The horse, moreover, was a fast trotter, and had been recently clipped, whereby we may infer that his physical powers, so far as man could detect them, were really in full vigour. The state of the bowels was also healthy, the fæcal matter being neither relaxed nor costive; and he had eaten and drank his last meal with apparent appetite. All these things indicated health. But although it is probable that it was this which sealed his doom, is it not likewise strange that such a condition of parts should have drawn forth only partial symptoms of congestion at the outset of the animal's illness? The irritation of the serous membrane, together with the rupture of the vessels of the mesentery, will readily account for the floating particles of lymph, the colour of the effusion, and the pallid hue of the membranes, as well as for the chilly surface of the body.

In rupture of any of the abdominal viscera violent griping pains are generally witnessed; but in this case nothing of the kind was exhibited. Three draughts, each of a most pungent character, were likewise administered, and no sign of inconvenience followed, the horse taking them as if they had been merely water. We are told that such agents are a test for rupture of the alimentary canal; but in this instance they failed to call forth any symptoms. This may perhaps be attributed to their comparative small quantity, and the ulceration being situated on the upper portion of the intestine, or near to the mesentery, and the drinks flowing along the *floor* of the channel. This conjecture supposes the intestines to be stationary, whereas every one is aware they are in continual motion, and, therefore, the naturally superior often forms the inferior portion of the bowels. That three draughts should have been swallowed, and the ulcer have been so situated as to retain the fluid on each occasion, does appear opposed to the doctrine of chances. Still granting such to have been the fact, this circumstance does not explain the mystery which envelopes the other symptoms.

There are two circumstances that call for particular remark. In the first place, the simple absence of the mucous membrane over a small space, allowed the muscular coat to be ruptured for a considerable distance; and the power employed, supposing it to have been the passage of the alimentary matter, was only such as, we may conjecture, had been daily in operation for some time past. Now physiologists teach us that, in a living body, muscular fibre is endowed with a

strength which tendon itself does not possess. Still the occurrence of such an accident as this appears to give mucous membrane a property "not dreamt of in their philosophy." That muscular fibre, though apparently thin, is gifted with extraordinary strength, any one who has had his arm within the uterus of a cow, in a case of parturition, must acknowledge. However, red muscular fibre seems alone enabled to resist traction. White muscular fibre appears incapable of resistance, even of the slightest kind, when deprived of its natural covering, mucous membrane.

How are we to account for an irritating agent within the peritoneal cavity drawing forth no sign of agony? It might be supposed that nature was overpowered by the sudden lesion. Such, however, did not seem to be the case here, as there was no collapse, and all the ordinary functions of vitality were performed, it may be in an irregular manner, still for hours after the rupture had taken place. We also know that the horse is an animal which can sustain a far more serious lesion to an equally vital part, without sensibility being destroyed. I allude to rupture of the stomach. Why, moreover, should the rupture of a portion of the ileum excite the breathing, and not apparently affect the sensorium? The horse died at length from congestion, consequent upon prolonged and rapid breathing, and seemingly not in any way weakened or worn-out by the destruction of the integrity of the small intestines, or of the mesentery.

CASES OF POISONING WITH ARSENIOUS ACID.

By J. C. Truckle, M.R.C.V.S., Salisbury.

On Tuesday, the 2d January, 1855, I was requested to attend at a farm, some distance from this town, to see some horses which they said had lost the use of their limbs, and which were taken ill only the day before. On my arrival I found seven of them standing together, in excellent condition, their coats being as sleek as if stabled for the purpose. Three of them were then ill, one appearing much worse than the others. The symptoms of this one were—the pulse full and strong; breathing natural; bowels regular; conjunctival membrane of rather a livid hue; appetite very good. The head seemed particularly affected, as evidenced by its pendant position, and the difficulty experienced on my attempting to elevate it; but the most marked symptom was paralysis of

all four extremities, and that to such a degree that it became dangerous even to move him. The two others were not so much affected, but here, too, paralysis was the leading feature. The pulse in these two cases was weak. I concluded, therefore, that they were cases of paralysis, but could not account for the cause. Diffusible stimulants and tonics were administered, good nutritious diet ordered, and I directed the animals to be kept warm, and plenty of friction to be applied to the limbs.

On the 3d, I found all my patients in the same state, with another added to their number evincing precisely the same symptoms. I repeated the medicine to each, and stimulated the course of the spine.

On the 4th, the horses first attacked were not any better, indeed one of them was considerably worse, appearing uneasy, and scarcely able to stand. This day two more became affected precisely in the same manner. Considering the motor system of nerves to be chiefly implicated, I gave to each of them

℞ Strychnia, gr. j;
Pulv. Zingib. ʒj;
Pulv. Gentianæ, ʒij; in bolus.

Ascertaining that all the horses were now similarly affected, with the exception of one, a very old horse, and which never was attacked, I began to suspect they had been poisoned. I accordingly communicated my opinion to the owner, and also wrote the same evening to Mr. Crafts, V.S., of Blandford, asking him to come and meet me in consultation.

On the 5th, as four of them were still no better, I gave each of them a tonic ball, but while in the act of doing so to the remaining two, although I took the greatest care, they instantly fell down as if shot, and appeared to be in convulsions, but in a few minutes they recovered and got on their legs again.

On the 6th, I found two of the worst were lying down and unable to rise. They appeared in no pain, and ate and drunk with avidity while down. I certainly considered they were in a dangerous state, although there was nothing to warrant me in stating they were near death; but during the night they both died.

On the 7th, Mr. Crafts came over; and after carefully examining the affected horses, concluded with me that, from the similarity of the symptoms, the animals had been either maliciously poisoned, or the carter had unintentionally given some pernicious drug to produce what is called "condition;"

and as paralysis was the prominent symptom, he suggested that some compound of lead had been most probably employed. Mr. Coleman, jun., V.S., of Tilshead, also attended at a later hour in the day, and came to the same conclusion; after which a *post-mortem* examination was instituted in the presence of the owner.

Autopsy.—Lungs healthy; liver pale in colour; stomach highly inflamed, and nearly corroded through at its greater curvature; intestines inflamed throughout their entire course, and the mucous membrane destroyed; the diaphragm showed indications of spasm having existed, although it was not observed during life. A portion of the contents of one of the stomachs was taken home by Mr. Crafts and analysed, and he found it to contain arsenious acid. Both the stomachs and the duodenums, with their contents, were forwarded to Mr. Herapath, of Bristol, for analysis, and in a few days he sent word to say that he had found arsenious acid in both, which he considered to be the cause of death.

The *post-mortem* appearances in both horses exactly corresponded.

The usual antidotes were immediately resorted to for those living, in conjunction with aperients, consisting of Ol. Lini. The remaining four have recovered. The first taken ill was the last to recover. He never lay down for four weeks, and yet there was no swelling whatever of the legs.

As the above cases presented some symptoms not always indicated by poisoning with arsenious acid, I have thought this brief description of them might not be without some degree of interest to the profession.

[From the unusual but decided character of the symptoms manifested in these cases, and *the absence of all acute suffering*, we consider them of more than ordinary interest. Coma and paralysis we have not seen as the general concomitants of poisoning by arsenic. Probably because we have witnessed only the effects of this agent when it has been given in large doses and productive of death. The horse will resist the influence of comparatively large quantities of this irritant poison, but when its action is set up, we have commonly indications of gastro-enteritis present. This, however, is the consequence of its *local* influence, its *remote* action being on the brain and nervous system; and this, perhaps, will be more likely to be brought about when repeated small doses of the agent have been given, and it has found its way into the circulation, than when a large quantity has been administered so as to act as an irritant and caustic.

Dr. Taylor, speaking of the remote action of poisons, says, "Arsenic sometimes affects the heart, which is indicated by syncope. At other times the brain and nervous system, which is known by the *coma*, *stupor*, and *paralysis*, that occasionally supervene in poisoning by this substance. * * In all cases of poisoning, whether the substance have a local action or not, death must commonly be ascribed to the influence exerted on a remote organ important to life. * * Nothing is more common than to hear it said, in cases of arsenical poisoning, that the local changes are sufficient to account for death. These changes, which are due to the irritant properties of the poison, should, however, be regarded rather as accompaniments of its action, than as absolutely necessary to explain its fatal effects; although it cannot be denied that violent inflammation, attended by ulceration or gangrene, may suffice to account for death, as in cases of severe gastritis produced by any cause whatever. In this, and in most other instances, when the substance is simply irritant, death is commonly due to the remote influence of the poison. This view appears probable from the fact that, if arsenic be removed from the stomach before it has had time to produce any well-marked local changes, the case may nevertheless prove fatal by the effect of that portion which has been absorbed and carried into the circulation."

The French veterinarians assert, that from one to two ounces of arsenious acid is required to destroy life in the horse; and in an experiment performed at the College some years since, it was found an ounce and a half proved sufficient for this purpose.

The following are the lesions given by them as existing after death: "Erosion of the mucous lining of the stomach, particularly on the right side. Also of the cæcum, and sometimes of the colon. Spots of ecchymosis, occasionally extensive and numerous, in the bladder; and traces of acute inflammatory action under the serous membranes of the cavities of the heart." They have likewise proved, that however serious may be the lesions of the larger intestines, analysis, only with extreme difficulty, renders manifest any portion of the poison, but that the contents of the stomach yield it readily.]

TUMOUR WITHIN THE CRANIUM, PRESSING UPON THE CEREBELLUM.

By G. J. Vincent, M.R.C.V.S., Redgrave.

July 13, 1854.—I was requested this morning, about six o'clock, to attend a bay cart mare of the Suffolk breed, the property of Mr. D. Wolsey, Thelvetham, Suffolk. The man who has the charge of the cart-horses informs me that she refuses to feed with the others; stands back from the manger, hangs her head, appears a little restless, and he thinks she is also "a little griped."

On my arrival, I learn that the mare has been regularly at work, and was ploughing only the day before. She has been fed the same as the other horses, but had lately fallen off somewhat in condition.

The pulse is fifty in the minute, and very distinctly to be felt at the submaxillary arteries; respiration undisturbed; ears and legs warm; she frequently sighs, reels, and appears as if about to fall head foremost. One of the attendants exclaimed that she certainly must fall, but she succeeded in maintaining the standing position.

Abstract blood from jugular vein until a slight alteration is produced upon the pulse. Give Sol. Aloes, ʒviij, in haustû, and the following ball,

℞ Pot. Ant. Tart., ʒij;
Camphor., ʒj;
Pot. Nit., ʒij.
Com. mass. q. s. fiat bolus.

Apply a blister to the head, and a fresh sheepskin over the loins, and throw up injections of tepid water, *per rectum*.

I remained with her about three hours, during which time she occasionally walked round the box, then laid down, but almost immediately rose again, reeling forward. She sighs more frequently, and appears at times quite unconscious of surrounding objects.

6 p. m. I find my patient standing nearly in the same place as when I left her this morning. She has not eaten anything, although offered several kinds of food during the day. The pulse is 56. Repeat the fever ball as before ordered. The fæces voided are dry and hard, and as I did not fear super-purgation in an affection of this kind, I gave a draught composed of—

℞ Ol. Lini, Oj ;
Sol. Aloës, ℥ij ;
Spt. Ether. Nit., ℥iss.

and repeated the enemas.

July 14.—8 a. m. The symptoms this morning appear to me very unfavorable. The pulse has risen to about 68 in the minute, and is very weak; the breathing is somewhat quickened, and the eyes are perfectly closed. She stands with her head hanging over a rail which separates her from another stall; and in this position the attendant informs me she has remained the greater part of the night, as if in a sound sleep. The fæces are still dry and hard.

℞ Ol. Lini, Oj ;
Ext. Belladonna, ℥ij ;
Aq. tepid., Oj. Fiat haust.

Repeat the blister to the head, and order about two quarts of warm water to be thrown up *per rectum* every four hours. 4 p. m. Patient much about the same. The pulse is somewhat quicker, and she still stands in one place. Ordered a fever ball, and left her for the night.

15—7 a. m. This morning I found my patient prostrate. The attendant who remained with her during the night, says she stood as if in a sound sleep till about four o'clock this morning, when she suddenly fell, and then laid perfectly quiet. The breathing is more hurried, pulse 90, and very indistinct; patches of perspiration cover the surface of the body; she moans occasionally, as if in pain, and the lungs evidently are becoming congested, as ascertained by auscultation. As I do not see the shadow of a chance for recovery, I discontinue treatment, leaving her till the after part of the day.—4 p. m. The symptoms have all increased so much in urgency that it is impossible for the mare to survive the night; I therefore advise the owner to have her destroyed, which is done in my presence.

Post-mortem examination.—The whole of the abdominal viscera appears to be perfectly healthy. On laying open the cavity of the chest, I find effused into it about two quarts of bloody serum. The lungs are quite black.

On removing the brain from the cranium, I find at the upper part of the cerebellum, and adhering generally to the meninges of the brain, a soft tumour, composed chiefly of flattened discs, each of which, when cut into, has the appearance of being made up principally of earthy matter. The membranes themselves, at this part, are much thinner than at any other; there is also a small portion dark in colour,

but the remainder possesses its natural appearance. The substance of the brain, as well as the spinal chord, is somewhat deeper in colour than is usually seen.

The fact of a tumour situated upon such an important organ as the brain, and there forming with little or no inconvenience to the animal to within a few days of its producing death, is to me, I confess, a mystery.

[Cases similar to this recorded by Mr. Vincent are by no means uncommon, if we understand his description; yet the existence of these accumulations upon the membranes of the brain, or within his ventricles, involves a highly interesting chemico-physiological inquiry. It would seem from the nature of the greater portion of them that they cannot be *quickly* formed, and it has occasionally been the case that they have attained to a very large size without causing any observable symptoms. Lassaigne, in the *Ann. Chem. et Phar.* lxii, 292, records an instance of this kind, in which he says the concretion weighed nearly fourteen drachms, was of the form of a hen's egg, and existed in the right ventricle of an old horse; and that no indications of its presence were manifested during the life of the animal. Its composition he found to be

Cholesterine	58·
Membrane and albuminous matter . . .	39·5
Sub-phosphate of lime	2·5
	100·

Other instances are on record, in which the most violent symptoms have shown themselves prior to death. The preparations of two brains, thus diseased, are in the museum of the Royal Veterinary College, and we well remember the cases as related by Professor Spooner at one of the meetings of the Veterinary Medical Association. One of those specimens, in which a tumour exists in each of the lateral ventricles, involving the plexus choroides, was taken from a horse that he had examined only a fortnight before, apparently in health; but phrenitis showed itself very early after purchase, and the animal died manifesting intense suffering.

In the other, the tumour, which is as large as an egg, is situated chiefly in one of the lateral ventricles, the septum lucidum being broken through, and a portion of the hippocampus and the corpus striatum having disappeared. The horse had been driven to town in the morning, and on his return was attacked with the most violent symptoms resembling inflammation of the brain. When first seen by Mr. Spooner,

he was plunging about the stall, and knocking his head against the wall; the breathing was very laboured, and the body covered with perspiration. From the first, Mr. Spooner was convinced it was a hopeless case, and despite all his remedial measures, after a most desperate struggle, the animal threw himself backwards and died.—(*See Abstract of Proceedings, Session* 1838-9.)

But we have said that these formations involve an interesting chemico-physiological inquiry. In their composition they resemble the brain itself to a certain extent; there being that remarkable fatty substance in them called cholesterine, with albumine, and phosphorus combined with lime. "The most important point in the chemical history of the brain," says Dr. Gregory, "is that it contains both fat and albumen, the two extremes of the animal products; and substances—cerebric and oleo-phosphoric acids—of a composition intermediate between that of albumen and that of fat. These bodies, however, appear to contain even a larger proportion of phosphorus than albumen." From the abnormal action set up, has there taken place the formation of the sub-phosphate of lime instead of these peculiar acids; thus giving to the mass its granular character, and at last rendering the brain unfit to carry on its all-important functions, when the tumour has attained such a size as to communicate pressure to it; before which no indications of its presence are manifested from the progress of this deposit being so exceedingly slow?

These accumulations of cholesterine sometimes take place in a very peculiar manner. We have in our possession the cerebellum of a mare, in which they are arranged at intervals upon the plexus choroides of the fourth ventricle, in the form of small globular-shaped masses, resembling beads on a string; and each one having the characteristic lustre of this principle, gives to the specimen a still greater resemblance to these so-called ornaments. The animal, from which it was taken, died after a few hours' illness, which was ushered in by convulsions, an incapability of standing, and quickly followed by paraplegia. She was a well-bred animal, the property of a gentleman, who used her in his park phaeton, and he frequently complained of the difficulty he experienced in holding in while driving her, from the excited state she often suddenly evinced in her work. Similar symptoms of excitability were occasionally observed by the groom when the animal was in the stable. These, however, were referred to her high breeding, and an irritable temperament; but they were doubtless depending on this deposition of cholesterine on the vessels of the brain.

The composition of this substance, as given by chemists, is C_{36} H_{30} O. It occurs in the form of white pearly scales, which are lighter than water; soluble in boiling alcohol and in ether, also in wood-spirit and oils; but it resists being saponified by the alkalies, which is its characteristic.

In another part of this journal will be found an interesting discussion that has recently taken place on this subject in the "Société Impériale et Centrale de Médecine Vétérinaire" of France. And we append to this the description of a very unusual instance of a crystal of oxalate of lime, contained within a cyst situated upon the olfactory nerve of a horse: which was communicated to the Microscopical Society of London by Mr. J. B. Simonds. He observes that—

"The recent publication of Mr. Quekett's lectures on the occurrence of earthy salts in both animal and vegetable cells gives an unusual interest to these depositions, and more especially when they are met with in those parts of the organism of animals where we should scarcely anticipate their presence. For this reason, and as an addendum to his valuable papers now being read before the Society, I am induced to bring before you an interesting and novel fact which has lately come to my knowledge relating to a deposit of the oxalate of lime within a cell or small membranous cyst.

"In the latter part of March, Mr. Boreham, then a pupil of the Royal Veterinary College, found, in dissecting the brain of a horse which had been procured from the slaughter-house, a small transparent cyst, possessing a very bright or glistening aspect, attached to the bulbous portion of the right olfactory nerve. The specimen, together with a small portion of the nerve, was carefully removed, and a day or two afterwards it was kindly presented to me, he at that time believing it to be an hydatid.

"From having been kept in water, I found that the nerve was somewhat decomposed, and very readily separated into a pulpy mass; a circumstance which prevented any minute examination of its structure being made. I observed, however, that its substance was partly absorbed, so as to form a cup-like concavity for the lodgment of the cyst; and I am led to infer from this circumstance that the sense of smell of the animal was greatly interfered with, and probably rendered very obtuse. But of this, as well as the existence or otherwise of pain from the pressure of the cyst, we are without means of ascertaining.

"On placing the specimen under the microscope, and viewing it with a two-inch object-glass, I was surprised to find a large octohedral crystal of oxalate of lime, with beauti-


Fig 1
b
a

fully defined facets, freely floating in a limpid fluid which distended the walls of the cell. There appeared to be no obstacle to the passage of the crystal from side to side of the cavity or in any other direction when the specimen was placed in different positions, its weight quickly carrying it to the most depending part. The walls of the cell have every indication of being composed of layers of areolar tissue spread out in a membranous form; they are not, however, of uniform thickness throughout, although everywhere very translucent. Towards the circumference or periphery of the cell on one side there exists a bell-shaped spot (*See plate, a, fig.* 1), which is thinly covered with membrane, but surrounded with many fibres, far more dense than in any other part. Besides the crystal within the interior, there is a small mass of granular-like matter, which can also be made to vary its position; this mass is marked *b*.

"The occurrence of this deposition of the oxalate of lime in this situation is the more interesting from the circumstance that this salt of lime is very rarely met with in the urine of the horse, in which the carbonates, on the contrary, are very common. Various forms of the carbonate of lime are noticed in the urine of the herbivora, produced by causes disturbing its ordinary mode of crystallization; but none of these forms can be confounded with the octohedral arrangement of the oxalate.

"The priority of the formation of the cell or the crystal is not easy to be determined, it being possible that the blood of the animal, from impregnation with the oxalate of lime, deposited this salt in the place it was found, and that subsequently a cell enclosed it to prevent any serious ill consequences to the surrounding organism; or it may be that the cell was first formed, and then the salt was effused into its interior, where it led to the exudation also of fluid. It is perhaps right to mention, in conclusion, that several capillary vessels are to be observed ramifying upon the walls of the cyst, and that it was firmly held in its place by fibres of areolar tissue. I may also add that the crystal has not been measured to ascertain its exact size, but that it can very readily be seen by unassisted vision."]

STRAY LEAVES FROM MY CASE BOOK.

By M.R.C.V.S.

1. PUNCTURED WOUND—PYÆMIA—DEATH.

July 30, 18—, was admitted into our Infirmary an aged grey gelding, having a punctured wound at the back of the pastern of the near fore-leg, extending towards the insertion of the flexor perforatus tendon. Much pain was expressed, more especially on an attempt being made to flex the limb, which was swollen as high up as the knee, and there was present some irritative fever. Withdraw blood to the amount of 6 lbs. Constantly employ fomentations to the limb, and over the wound apply a poultice. Restrict the diet to mashes.

The next day a laxative was administered, and the poultices and fomentations ordered to be continued.

Aug. 1.—The limb has become more swollen, and the pain is very acute, the wound having assumed a very unfavorable appearance. The whole system sympathises, and one of the hind legs has become much enlarged. Give a diuretic, combined with a sedative, in the form of a ball. Dress the wound with the Compound Tincture of Myrrh, applying a poultice over the dressing. As the fæcal matter has been rendered soft, allow a little corn, although no disposition for food is evinced.

2d.—Since yesterday a remarkable change for the worse has taken place. The constitutional excitement is great; the swelling of the legs has increased, especially that of the near behind, on which apparently farcy buds have made their appearance, and the wound at the pastern has assumed a most unhealthy aspect. Mineral tonics were exhibited, and the wound dressed as before. Vary the diet.

3d.—Several ulcers have broken out on the hind leg, and on the fore limb there exists that tuberculated condition of the skin which accompanies farcy. The pain of the wound is intense, and the diseased action is extending downwards to the hoof, and to such a degree that the latter has become loose. The animal refuses food, and the febrile disturbance is considerable. Dress the wound and ulcers with a solution of Chlorinated Lime, and repeat the tonic ball. The animal's general comforts to be attended to. An unfavorable result is anticipated from the rapid progress of the disease.

4th.—The animal is in a state of extreme agony; the

wound has a gangrenous aspect; the pulse is 140 and intermittent; the respiration much disturbed; all food is refused; he fast loses flesh; is down, and the countenance is very anxious; while several more ulcers have made their appearance on both the fore and hind legs. No hope of cure can be entertained. Treatment as before ordered. During the day the animal continued down, without any lessening whatever of his sufferings, and in the evening he died.

A *post-mortem* examination showed the wounded leg to be in a state of disease little expected. Gangrene had extended from the foot to the knee, above which a considerable quantity of pus had been effused underneath the skin. The hind leg was not so much affected. The viscera, both of the chest and abdomen, were all more or less implicated, inflammation having existed in all the mucous membranes thereof. The lungs were also tuberculated. The vessels of the stomach were congested, especially near the cardiac orifice. Much inflammation had existed in both the small and large intestines. The liver was likewise structurally diseased, and adherent in several places, by its peritoneal covering, to the walls of the abdomen.

This case is interesting, perhaps, inasmuch as it shows how slight a cause will be productive of much mischief when chronic disease is existent in the system. From the punctured wound there was at the first no grounds for apprehension; yet a day or two only had elapsed when the most formidable symptoms showed themselves, and the animal sunk rapidly under what seemed to be a breaking up of the constitution.

2. PARTIAL OCCLUSION OF THE COLON—OBSTINATE CONSTIPATION OF THE BOWELS—DEATH.

Aug. 18.—This animal had been the subject of repeated attacks of colic; being what is usually denominated a voracious feeder. In the earlier part of the day he had experienced one of his usual attacks, and the groom gave him a stimulant, and removed the dung, which he found hard and dry, from the rectum, by the hand; but a recurrence of unfavorable symptoms taking place, further advice was sought. When admitted, about 10 p.m., much uneasiness was manifested by the animal's soon lying down in the box in which he was placed, rolling, looking at his flanks, and suddenly rising. The belly was tympanitic, and yet the pulse only very little affected.

℞ Sol. Aloës, fʒvj ;
Ol. Terebinth., fʒiv ;
Ol. Olivæ, Oj. Fiat haustus.

The above draught to be given immediately, and throw up enemata of warm water every half hour.

11 o'clock.—No mitigation whatever of the pain has taken place, which indeed appears now to have become continuous : and the pulse is accelerated, being 60. Abstract 4 lb. of blood from the jugular vein, and as no fæces have been voided since the attack, and the belly remains tense, give

Sol. Aloës, fʒiv ;
Ol. Olivæ, Oj. Ut haustus.

Continue in use of the clysters as before.

2 p.m.—Still no better. The abdomen much distended; the pain considerable ; and as yet no action of the bowels. Give an enema of tobacco-smoke ; apply hot water by means of rugs to the belly, use friction subsequently, and repeat the oil, following it with several hornfuls of tepid water.

4 p.m.—Some relief has been afforded, the pain being less intense, and the abdomen not so much swollen ; but the bowels have not responded. Throw up Ol. Oliv., Oss, in the form of an enema ; continue the hot rugs to the body, and also the friction.

8 p.m.—The pain has returned with increased severity ; the pulse has become much quicker and irritable ; the belly remains tympanitic, and the bowels have not yet acted. Repeat the tobacco-enema, and continue friction to the belly with the hot rugs.

Despite all the remedial measures adopted, the animal died, in great pain, about 10 o'clock.

The *post-mortem* examination showed the stomach and intestines to have been much inflamed. They were also distended with dry ingesta, and that to a very large amount, the stomach containing food weighing nearly 40 lb. The principal obstruction to the onward passage of the contents of the alimentary canal was produced by a lessening of the calibre of the colon. The small intestines were filled with air. The rectum was empty.

Extracts from British and Foreign Journals.

ON THE HEREDITARY DISEASES OF HORSES AND CATTLE.

By W. F. Karkeek, M.R.C.V.S., Truro.

(*A Prize Essay.*)

Although certain determinate characters and forms, perpetuated by generation, distinguish the several races or breeds of horses and cattle in this and other countries, yet these distinctive marks are not so arbitrarily fixed, but that individuals, in any one of those breeds, may and do differ among themselves, in constitution and temperament, as they are severally affected by varieties of organization, disposing them to different diseases. These predispositions, no less than the varieties of size, form, colour, and other obvious properties, are hereditary and transmissible to offspring; and though the direct proof may not be equal for the two cases, and the effects resulting are of such different importance, yet is it certain that the peculiarities so carried on, from one generation to another, have reference to one common law.

Without entering minutely into the consideration of the cause of such deviations from the primitive or common type of the species, we may remark that certain external circumstances, as food, climate, and domesticity, appear to have had considerable power in modifying animal organization. Possibly the most important influence in this respect is due to the artificial mode of life which some animals lead under the control of man, by which modifications are induced to a certain extent and are transmissible to offspring. It is to this influence that we may probably attribute the occasional production of accidental varieties—many instances of which may be cited as examples of this singular phenomenon in the reproduction of the species. Thus the polled breeds of cattle sprang from an individual variety, which was preserved by the Scotch farmers, on the supposition that such formed animals would become more quiet and less apt to gore one another than the native races.

The 'Ancon' or 'Otter' breed of sheep, now established in America, is another striking instance of departure from a common type—a variety that was preserved in consequence of their short otter-like limbs, which prevented them from leaping fences. We have also another singular example in those races of dogs that have a supernumerary toe on the

hind feet, with the corresponding tarsal bones—a variety analogous to the one presented by six-toed or six-fingered families of the human race.

Other cases could be adduced. We cannot, however, term such singular varieties as accidental, since there is nothing in the phenomena of nature to which the term accident can well be applied. The characters are doubtless the result of some organic change proper to the animals in which they appeared; and their transmission to their progeny is only the exemplification of a law common to other cases of transmitted characters.

It is generally allowed that congenital varieties of this character tend to become hereditary, but that changes wrought in an animal after birth are not thus transmitted to offspring. This assertion is especially true in respect of deformities and mutilations, the result of accident or of man's caprice. Changes of this kind occurring during the animal's life commonly end with it, and have no obvious influence on its progeny. Had nature wrought otherwise, the mischances of all preceding ages would have been entailed on us; and cropped dogs and dock-tailed horses would be born ready to our use. But although deformities of this kind are not hereditary, there are certain acquired conditions of the body, the consequence of disease, which are frequently conveyed from parent to offspring. The state of health of either parent, particularly of the mother, at the time when the existence of the offspring commences, has a strong influence in the production of healthy or unhealthy progeny. We shall adduce a great many examples in support of this position in the course of the essay.

The applicability of these remarks to the question of hereditary disease is sufficiently obvious. If new characters are produced in domesticated animals, because they have been taken from their primitive conditions, and exposed to the operation of influences unnatural to them, we can have no reason to doubt that deviations of structure, "whether in the way of deficiency or of excess, or any other new development, are occasionally produced and transmitted; and with these deviations, certain propensities to, or conditions of morbid action in the parts thus abnormally organized." Generally the offspring is born free from disease,* conse-

* Mr. G. Baker, V.S., Reigate, relates the case of a mare that was *farcied*, and, the owner breeding from her, the foal showed symptoms of farcy soon after birth, and died glandered.—'*Veterinarian*,' vol. xiii.

We have heard of a similar instance, where the farcied mare was bred from and the mare survived, but the foal exhibited symptoms of farcy and died.

These cases are congenital, but diseases in which the fœtus participates

quently it is not disease itself which is transmitted, but organs or textures of such imperfect kind, that they are liable to be morbidly affected by causes which would produce no effect on limbs or textures soundly and normally developed.

Regarding the subject of hereditary diseases in a general way, we shall have to consider—

I. *Those which are induced by peculiarity of conformation, both in the external and internal parts of the body.*

II. *Those in the transmission of which the condition of the blood may be supposed to be partly or wholly concerned.*

In treating the subject under these two heads, we shall follow the classification as closely as possibly, but, on account of the close and intimate connexion existing between the solids and the fluid portions of the body, in growth, function, and change, there will be a difficulty experienced in some instances, in separating them in the inquiry. Our first example will afford an instance of the kind.

I. (*a.*) *Spavin and other Ossific Enlargements*—the predisposition to which may be either constitutional or local. They are composed of the earthy matters of bone, chiefly invading the tissues low in the scale of organization, such as cartilage and fibro-cartilaginous substances; injuring the structure and functions of the parts, by rendering them rigid and inelastic, and causing partial or complete lameness, depending on the situation and the extent of the deposition.

It is perfectly well ascertained that the progeny of some horses inherit a constitutional tendency to splints, spavins, ring-bones, and other bony deposits, without exhibiting any peculiar conformation of limbs or joints to account for it. These are instances of an *ossific diathesis*, transmitted from parent to offspring. But, on the other hand, this hereditary predisposition more commonly depends on faulty or peculiar conformation.

Thus horses most disposed to *spavins* are those possessing short pointed hocks, deficient in width and breadth below, and disproportionately small compared with the upper portion of the joint. Those most disposed to *ring-bones* are horses with upright pasterns and high action; and those most liable to *ossified cartilages* are the heavy draught breeds; so much so that it is not an uncommon case to find the cartilages of the

with the mother, owing to their contaminating influence, or their extension throughout her organization, are not, properly speaking, hereditary

The following case is more to the purpose, related by the late Mr. Robert Reed, Crediton, V.S.—"I have seen," he says, "a foal born blind, having a lenticular cataract in each eye, from the dam having been put to a stallion with a cataract in each eye, the result of a constitutional inflammation."

feet of horses of this character changed into bone at four and five years old. The reason of this is evident enough: concussion is easily produced in the joints of the character of horses described; inflammation of a slow chronic kind follows as a natural consequence, and osseous effusion is the result.

There is no difficulty in establishing the hereditary character of those diseases. Taking spavin as an example, we have numerous and unquestionable cases to produce. Some ten or dozen years since a spavined thorough-bred stallion served mares in the neighbourhood of Truro, and in a few years afterwards it was really astonishing to see the number of his stock that were similarly diseased. One striking circumstance connected with this horse is much to the purpose. A half-bred mare, one of his stock, exhibited spavins at four years old, and, becoming unfit for fast work, was kept for breeding purposes and occasional work on the farm. Two of this mare's stock also exhibited spavins in a short time after the breaking.

There is a curious case recorded in the *Veterinarian*, by Mr. Percivall, of a thorough-bred horse called "Dominie Sampson," that had run very successfully on the English turf, and, although fired in both hocks, was inconsiderately purchased for the East India Company, and sent out as a covering stallion to the stud at *Buxar*, where for four years he had forty mares annually, and the whole of which generally proved with foal, but were affected either with curbs or spavins, and only *one* of his stock was passed into the cavalry: consequently he was discarded from the stud.

(*b.*) *Curbs* are frequently found in horses exhibiting the character of hock described in the last example, and are generally caused by injury of the annular ligament, from over exertion, producing swelling and inflammation about three inches below the point of the hock formed by the *os calcis*. The peculiar form of this bone appears to be connected with the cause of the disease. Its chief purpose is to act as a lever for the action of very powerful muscles, the tendons of which are inserted into its extremity, and in proportion to the projection of this bone will the muscular energy be increased by which the joint is moved. On this account, its length is a matter of considerable importance. It is supposed also to assist indirectly in supporting the superincumbent weight with the other bones of the hock, and materially assists in preserving these parts from the effects of concussion. But when the os calcis is short, forming a short pointed hock, the leverage or mechanical power is injuriously diminished,

leaving too much for the other parts of the joint to perform, and concussion is the common consequence, followed by inflammation and lameness, sometimes connected with *curbs*, at other times *spavins* or *thorough-pins;* and it is not an uncommon case to see all three of these diseases in the hock at one time. There are other formed hocks, which are even more disposed to curbs than the one just mentioned; such are the "sickle-hock" or "cow-hock."

We can scarcely name any disease of the horse which affords stronger evidence of a hereditary tendency derived from peculiarity of structure than the one we have been considering. We have also some interesting examples of disease in the feet arising from faulty and peculiar conformation.

(*c.*) *Diseases of the Feet.*—Most persons acquainted with the feet of horses will recognize their strong tendency to disease, arising from faulty formation. Sometimes the hoofs are disproportionate to the frame—they may be too small, without sufficient base to support the superincumbent weight—rendering the footing insecure, or too large and unweildy, rendering the action slow and awkward. At other times the crust of the hoof is naturally weak, arising from a faulty secretion of horn. Such hoofs are generally uneven, indented, and wrinkled, and have invariably flattened soles, with a disposition to become *pumiced.* Again, we occasioually find the crust morbidly dry and brittle, arising from the absence of that peculiar tough and elastic horny material which consolidates and binds, in perfectly formed hoofs, the longitudinal fibres of the crust together. Feet of this character are particularly disposed to *sand-cracks.* All these defects we have been describing in horses' feet are found to exist not only in different but in the same breed, and are most certainly propagated in breeding.

The Navicular Disease is another striking example of hereditary disease, to which horses are liable, arising from peculiarity of structure. Those most disposed to it have slender bodies, low action, strong upright hoofs, narrow heels, and great concavity of soles. Lameness is soon produced in horses of this description, when the hereditary tendency exists, from exciting agents of various kinds, such as exposure to heated, fermented litter, imperfect shoeing, fast road-work: whilst animals free from this hereditary proclivity are capable of withstanding all these influences.

The contraction usually seen in diseased feet of this kind is perhaps more commonly the consequence than the cause of the lameness; but sometimes it may act as a predisposing agent—the former in cases when inflammation precedes the

contraction, the latter when a manifest alteration in the form of the foot precedes the lameness. Hence, breeders should at all times look with very considerable suspicion on a stallion exhibiting narrow, contracted, upright hoofs; for although we may occasionally observe old horses, having contracted feet and otherwise out of shape, performing their work without lameness, yet such horses should be invariably avoided in breeding.

Mr. Thomas Turner, V.S., Croydon, related an interesting case respecting the hereditary nature of the navicular disease, at a meeting of the Veterinary Medical Association,* well worth mentioning here—that of a colt bred by himself, which became lame from this disease at four years old. Both the sire and dam of the colt had narrow, contracted feet; and the mare, becoming unfitted for work, was destroyed. On dissecting the foot which exhibited the greatest amount of disease, he discovered a hole in the navicular bone; and, strange as it may appear, the colt's lameness existed in the corresponding foot; and, what appears still more curious, the dam had a rat-tail, and the colt had a facsimile of it.

In the examples given we have positive evidence of diseased action arising from peculiarity of structure, and transmissible by descent. The breeder may learn a useful lesson from them—that, in selecting horses to breed from, it is not enough to direct his attention to pedigree chiefly, but he should be also guided in his judgment by external conformation. The animal machine may be put in motion by the noblest blood, but unless every bone has its just proportion, every muscle its proper pulley, and every lever its due length and arrangement, the motion can never be accurate, vigorous, and durable.

We will next direct our attention to some *important diseases of the internal parts of the body, depending on something defective or ill-balanced in the organization.* On the first view it might appear that such deviations were less extensive than those of outward conformation; but there is reason to believe that they occur far more frequently than is generally imagined. Dr. Holland says, "that there is scarcely any organ of importance which does not afford evidence of diseased actions derived from structure, and transmissible by descent. On looking to the textures more widely diffused through the body—as the different vascular systems, the nerves, &c.—we have every reason to suppose, though the proof be less direct, that they are subject to hereditary variations of structure, not merely in detached parts of each system, but throughout those minute branches and terminations where

* See Trans., January 20, 1839.

the most important functions of the body, both animal and vital, must be presumed to take place."*

The Diseases of the Respiratory Organs will afford some interesting examples, both in horses and cattle.

(*d*.) *Roaring*.—So called from a peculiar sound uttered by the horse when his respiratory actions are violently excited. Mechanical injury to the larynx, and the windpipe just beneath it, arising from improper use of the bearing-rein—or tight-reining, so commonly practised in the breaking of young horses—are frequent causes. Sometimes this disease makes its appearance independent of any of those uncalled-for mischievous acts—such as the result of catarrh, or some subacute inflammatory affection, causing a thickening of the lining membrane of the upper portion of the windpipe; and, at other times, roaring is produced without any apparent cause whatever; in which case the disease is attributable to *atrophy* of the muscles of the larynx.

Without further considering the causes of roaring, this fact is clear and evident enough, that its hereditary character is very frequently exhibited. Instances are numerous everywhere of stallions affected in this manner, causing the same in their offspring. Mr. Simonds, in his lecture to the members of the Royal Agricultural Society at York, referred to the circumstance of the larger proportion of roarers found amongst the Yorkshire horses, which he attributed to hereditary predisposition; and we had an opportunity, in consequence of an official appointment as Judge of the horses at that meeting, of proving the truth of this assertion.

(*e*) *Broken Wind* is another example of diseased action derived from abnormal structure, and transmissible by descent. This is a disease perhaps not generally considered as having an hereditary origin. It is caused by disordered functions of the lungs, and is common to horses of sluggish temperaments and slow action; also to carriage and hackney horses, whose work is irregular, and, from mismanagement, their exercise not sufficiently attended to. On the contrary, it is seldom or never seen in the racing stable, and rarely in the hunting stable, where the work or exercise, and feeding department, are properly conducted. Why is this? Because the condition necessary to preserve the healthy functions of the lungs are fulfilled in the latter instance, and not in the former. One of the chief conditions necessary to this end is exercise. It is this only which will promote perfectly free expansion of the chest, so that the air may have free and frequent access to the air-cells; by which not only the muscular functions of

* Medical Notes and Reflections,' by Henry Holland, M.D., F.R.S., &c.

the lungs, but other parts of the body, are alike preserved in healthy activity. In the absence of this, the textures of the lungs become flaccid and weak, and lose their healthy resiliency and contractile power. Under these conditions, in fact, they become gradually *atrophied*, which is the essence of the disease known as "broken wind."

The healthy vigour of all the functions of the body is best maintained by their equal and moderate exercise. The muscular function, and with it the circulation of the blood, is the first to suffer from the want of it; hence, first sluggish movements, and ultimately weakness of the heart and other muscles—causing deficient and disordered secretions, general plethora, over-nourishment of adipose textures, and wasting of muscles; and various evil consequences of these morbid conditions may result from these causes, when long in operation—such as biliary derangement, indigestion, and flatulency. The emphysematous state of the lungs, usually observed in dissecting broken-winded horses, is undoubtedly induced from disordered secretion, and not by any mechanical rupture of the air-cells, as is commonly imagined.

In the view we have taken of this disease, called "broken wind," the organs of respiration closely resemble the muscles and other organized parts of the body. They were made to be used, and if left in partial inactivity their natural elasticity and power, or tone, are unavoidably impaired. But the mischief does not stop here. It is a very common practice with farmers to breed from broken-winded mares, and the progeny, in a great many instances, inherit a tendency to the disease, because their lungs are never normally developed like those of sound active animals.

(*To be continued.*)

TUMOURS IN THE BRAIN.

At a Meeting of the "Imperial and Central Society of Veterinary Medicine, Paris," held on the 26th of October last,

M. Bouley, Senior, President, in the chair.

M. Leblanc read the following communication, relating to the formation of tumours in the brain, and their effects on the organism.

An omnibus horse, aged about ten years, and which had worked well for the last four years, during which time all the

animal functions appear to have been normal, was observed four months since to be less lively than usual, to have fallen off his appetite, and frequently to hang down his head. The company, nevertheless, continued to use him. One day the groom observed that the muscles of the eyes, jaws, and fore-limbs, were convulsively contracted: "the horse," said he, "*made grimaces*, he turned up his eyes, and twisted his shoulders." These symptoms were renewed several times every few days; becoming, at length, much more marked. As the attacks became more frequent, they often terminated in the falling of the animal, who, however, soon raised himself again. The groom now thought that the horse was very ill, and the omnibus company determined not to have him worked any more, in order to avoid all accidents. The animal was therefore placed in the infirmary.

I had never, till now, been a witness to any of his attacks; and had, consequently not been enabled to investigate the symptoms, or general habits of the animal.

On the 30th September, the superintendent of the stables said to me: "The epileptic horse has just had a very bad fit; he has fallen and cannot raise himself; he is going to die, for he does not move." I found the animal stretched upon the litter, in a comatose condition, insensible even to the strokes of the whip; his respiration was very slow, and sometimes suspended; the pulse was also very short and weak. I applied a very strong vesicatory on each side of the nape of the neck.

The following day I found the horse standing; he had got up shortly after my former visit. They had placed him in a loose box. He still hung down his head, but had a pretty good appetite. The groom informed me that he had seen him several times making circular movements from left to right. This action, he added, continued for some time, and he only stopped when one of his hind legs (the left, which he never raised from the ground,) became surrounded with a tight twist of straw. When this was removed, he again commenced turning, and always in the same direction. I ordered the horse out, he inclined a little to the right in his walk, and he was made to go backwards with difficulty, but this retrograde movement could always be effected. He easily resumed his proper position when his hind legs were crossed. His eyes were likewise fixed.

As the horse was not of much value, the owners proposed to have him killed, but I wished to observe his symptoms for a few days longer before this was done. They therefore kept him till Sunday, the 8th of October. From the 1st to the 8th

I saw him every day. He continued much in the same state, constantly turning when not occupied with eating, or entangled in the straw. Sometimes he would commence this circular movement before finishing his mouthful of hay, and which he held between his teeth.

I had him killed by bleeding, and made a *post-mortem* examination immediately afterwards. Before separating the head from the trunk, I satisfied myself that the spinal sheath was not distended by serous fluid. The transparency of the sheath within the *ataloid occipital* articulation enabled me to see that it contained blood. I cut through the membranes, and found a large blood-coloured substance of rather soft consistence, surrounding the spinal marrow. A very small quantity of limpid fluid only flowed from the spinal sheath, and which was of a deeper yellow colour than normal. I succeeded in opening the skull without injuring the brain. The parietal region of the osseous cavity presented an irregular projection on the right side which was well marked, being elevated, and narrow at the base. I cut down the whole length of the dura mater, and satisfied myself that it strongly adhered in several places to the right cerebral hemisphere. The adhesion was produced by false membranes, which were thick in substance. The blood-coloured tumour, of which I have spoken, extended as far forwards as the base of the cerebellum. It was of recent formation. All the blood-vessels on the surface of the brain were greatly distended, although the animal had been killed by bleeding. The brain, when completely removed from the skull, and examined as to its general appearance, presented nothing abnormal, except a very manifest fluctuation upon the lateral and antero-inferior parts of the cerebrum.

The opening of the cerebral ventricles disclosed a continuation of serious lesions; they were greatly distended by a large quantity of a whitish-yellow substance, the superior part of which was of a gelatinous character, and contained in a network of membrane, the inferior being more liquid and very limpid. By enlarging the incision made in the ventricles a portion of this liquid flowed out; the gelatinous material, however, remained fixed to the superior part of the cavity, being mainly composed of false membranes.

The choroid plexus of both the right and left ventricles was very much diseased, and of an enormous size. These congeries of vessels were closely connected by their upper surface to the inferior part of the corpus callosum, and from this they could not be separated without making a rent. The right choroid plexus was the most bulky and adherent. It

occupied all the anterior part of the ventricle, and was of an ovoid form. Its largest diameter measured ·050 of a millimetre, and its smallest, ·020.

The largest diameter of the left plexus was only ·035 of a millimetre, and the smallest, ·016. These plexuses were, therefore, from 15 to 20 times larger than in their normal state. Their surface was uneven; their substance firm, and of a deep red colour, slightly tinged with violet. Each tumour contained a considerable quantity of small nacreous bodies, which are known to be composed principally of cholesterine.

The cerebral substance, upon the whole, was of its usual consistency and density. It was of a slight yellow colour, however, in the parts contiguous to the enlarged plexuses, where it was also very much indented by the impressions which had been made upon it by these bodies. The plexus of the fourth ventricle was very red, and the pituitary body was also enlarged. M. Faivre, who assisted me in the autopsy of the horse, has very carefully examined with the microscope some portions cut from the left plexus. He found:

1stly. That the vascular element chiefly prevailed; the choroidal villi being closely compressed one against the other.

2dly. That the pavement epithelium was of its normal character.

3dly. That cholesterine was disposed in crystaline plates, which were lying one upon the other, similar to the leaves of a book. This substance was, he observed, to be encircling the arterial bunches, and filling, likewise, the spaces between the villi.

4thly. That some phosphate of lime was deposited in a granular form. The serous fluid presented nothing remarkable.

The principal lesions which I have just described, have been previously observed by several veterinary surgeons, and among others, by MM. Vatel, Renault, Villate, and myself. M. Bouley, jun., has likewise some time since demonstrated the existence of pearly masses of cholesterine in the tissues of the plexus choroides.

MM. Vatel, Renault, Villate, myself, and several others have observed that an increase of the size of the plexuses, together with modifications in the composition and structure of these organs, coincided with different functional diseases of the brain, and which they had without doubt produced. We have remarked, also, that these lesions were accompanied with abundant accumulation of serous fluid in the cerebral ventricles. One would have thought that similar lesions

would produce similar symptoms; this, however, has not been the rule, for at most there has only been an analogy between the cases. We have, indeed, all observed the existence of disordered function in both the sensations and the muscular movements of the animals, although in different degrees. Some animals were calm and in a state of drowsiness; others had a fit of vertigo. Some had a tendency to go forwards, and others to go backwards, or occasionally on one side, or in a circle. Some could not be made to go backwards, while others refused to advance. The symptoms were permanent, passing through various stages, with well-marked exacerbations, in some animals, but in others they were intermittent only. The lesions have often produced sudden death, while in other instances death has been very lingering. I know that, to a certain extent, these anomalies can be explained by the different complications of the lesions, for these may be only transient, or may vary in their intensity, as well as in their seat. But how are those great dissimilarities to be accounted for, which exist in the propensities that animals show of moving in directions which are diametrically opposite to each other? It has been said that compression of the corpora striata takes away the power of an animal to execute retrograde movements. If this be true, the leading symptom in the case I have just explained, as in all other analogous cases, would be of necessity the privation of this faculty; for in this instance, as well as in others, the compression was extreme, in consequence of the enormous development of the plexus choroides, and the great distension of the parietes of the ventricles by the superabundant serous fluid contained in their cavities. Rather than our attempting to uphold the physiological law, of which I have just spoken, it would be much better to say that the compression of the ventricular parietes excites various, and serious derangements in the several sensations, and in the muscular movements, and consequently, in the power of locomotion. It is not, however, by compression internally communicated to the brain-substance surrounding the ventricles, by whatever cause it may be produced, which necessarily leads to these functional derangements, for M. Renault has observed that pressure by an abnormal osseous projection produces defects in the movements of the animal, and often results in death. The giddiness of sheep and oxen is likewise very frequently produced by hydatids lodged on the *surface* of the cerebrum. I have likewise seen a case of giddiness in a horse which had a large cyst connected with the dura mater, and situated upon the exterior of the cerebrum.

The term *immobilité* has been given to a series of symptoms, the principal features of which are—an impossibility of backing, and a difficulty in adjusting the fore legs, which had been previously crossed. By this term, in its fullest meaning, is, however, to be understood all those symptoms, whether permanent or intermittent, that derange the general sensations, and cause an impossibility or an extreme difficulty of executing muscular movements, whether these movements be retrograde or not. This appellation then might remain in the nomenclature of the law regulating the return of horses for vices; because it recognizes such symptoms which I consider to denote the existence of important, and long existing lesions of the brain. I have at least always found, in the autopsy of horses, whose peculiarities would be better expressed by calling them *idiots* than by giving them the name of *immobiles*, original lesions of various kinds, either of the skull or of the viscera which it encloses. I do not mean to say by this, that all the chronic lesions of the brain are manifested by symptoms of *idiotism* or *immobilité*. For example, it has been very frequently proved that the presence of cholesterine upon the choroid plexus is compatible with appearances of perfect health.

M. Renault.—The position which M. Leblanc occupies as a scientific and practical man, renders it necessary that we should obtain from him an explanation of his opinion of the term *immobilité*. According to M. Leblanc, every horse which is affected with a disease of the nervous system that renders the execution of movements difficult, whether retrograde or not, should be considered as *immobile*. M. Renault would ask if it is thus that M. Leblanc carries out the existing law with reference to the return of horses, and whether he would condemn as *immobile*, a horse which could execute perfectly backward movements? The solution of this question appeared important to him, because it may have a great influence upon the proceedings of veterinary surgeons.

As to the lesions peculiar to *immobilité* which M. Leblanc says he has always met with in the skull or brain, M. Renault has not been so fortunate in finding them. He has opened horses acknowledged to be *immobile* in which he has found no lesion, and, on the contrary, he has met with very remarkable lesions of the brain in animals which, when living, had presented no symptoms of *immobilité*.

M. Leblanc.—To the question which M. Renault has just addressed to me, whether, with the law as it exists, I should condemn as *immobile* a horse which could perfectly execute retrograde movements? I answer, yes! if notwithstand-

ing the retrograde movement, which is often a negative sign only of *immobilité*, I observed—1st, That the animal presented other symptoms which denoted a derangement of the functions of sensation, and to such a degree that a skilful man would not be able to make him obey him, or direct him to the right or to the left, or make him to go forwards. 2d, If on his legs being placed in any particular position, the animal should not endeavour to move them, although certain methods of excitement are used—noise, for example. 3d, If his eyes remained fixed and open. 4th, If the horse, after having taken a mouthful of forage, and having commenced to masticate it, should suddenly stop, and, after some time, commence again.

I should, therefore, condemn as *immobile* a horse which would refuse to execute backward movements, or to immediately adjust his fore legs, they having been previously crossed; if also he should be observed to keep the eyes fixed, and to rest during the mastication of the forage, it being but partly taken into his mouth.

The most striking and constant symptom of what I understand by *immobilité* is a peculiar appearance or state of *idiotism*, characterised especially by a fixedness of the eyes, and by the slight attention paid by the animal to what passes around him. This condition of the animal is always accompanied by abnormal modifications, or momentary suspensions of the movements of a particular class of muscles having relation to life, whence results *immobilité*, for a given time, of the parts whose function it is to produce motion, and consequently the impossibility, or at least a great diffiulty, in the perfect locomotion of the animal.

There are, then, several kinds of *immobile* horses—those which cannot be made to go backwards, as also those which cannot be made to advance; and others again in which it is difficult to make them turn round. There are some which go forwards irresistibly, and others which it is impossible to stop when they begin to recede. All refuse to obey the wishes of the conductor, and all are unfit for service, and dangerous to use.

I therefore see nothing which can prevent this interpretation of the expression *immobilité*, as used in the text of the law of 20th May. This interpretation is at least impartial. I repeat that I have never opened a horse decidedly *immobile*, without finding lesions more or less manifested, although various, in the viscera of the cranium. One day I made the autopsy of an *immobile* horse, (about 25 years old) with M. Calmeil, and did not discover any lesion; but M. Calmeil discovered a very marked adherence between the two layers of

the arachnoid membrane. It is therefore very necessary to make a close observation before coming to the conclusion, that there are no lesions. I do not believe that *immobilité* is a purely nervous affection.

Without being able to prove by well attested facts that animals, which are found to have lesions in the brain, have always functional disorders during life, I am nevertheless convinced that lesions cannot exist without a more or less marked derangement of the animal vital functions.—(*Recueil de Vétérinaire*, Jan., 1855).

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Traité d'Anatomie Comparée des Animaux Domestiques. Par A. Chauveau, Chef des Travaux Anatomiques à l'Ecole Impériale Vétérinaire de Lyon.

Treatise of comparative Anatomy of the Domesticated Animals. By A. Chauveau, Demonstrator of Anatomy at the Imperial Veterinary School of Lyons. Published by J. B. Baillière, Paris and London.

Sometimes, when in a gloomy mood we are pondering over the actual state of our science and art, we have been so much impressed with its many deficiencies as to look with but faint hopes towards its future. But, as the bright rays of the light of history have been let in, these forebodings have all but vanished.

Veterinary science, is yet in its infancy, for, be it remembered, not a century has elapsed since Bourgelat, abjuring the bar, founded in Lyons the first veterinary school. When we reflect on what has been done in this brief period, we take courage, and this the more if we compare the progress we have made with that of the higher branches of medicine and surgery. Still there is one particular source of disquietude. Very little advancement is taking place in clinical study compared with its immense requirements. Works on anatomy and physiology are appearing, seemingly to the exclusion of

monographs and treatises on veterinary medicine and surgery; and when these do appear, but little encouragement is given to their respective authors.

Paré and Sydenham, the fathers of surgery and medicine after the revival of letters, were preceded by Vesalius and Harvey, the most illustrious among immortal anatomists and physiologists. Again, John Hunter's inquiries into the structure and functions of man and animals must undoubtedly be regarded as the foundation on which the greatest monument of surgical progress has ever been erected; and, from the advance of anatomy and physiology, it may safely be predicated that pathology will in a direct ratio advance. Therefore it is that we regard the work before us, not only as a great boon in itself, but as an omen of a yet brighter era. The compact form, and clear, nay elegant, style in which it is written, will tend to ingratiate the study of anatomy; and it is a happy antithesis in this respect to the 'Abozzo d'Anatomia e Fisiologia,' lately published in Lombardy, by Patellani.

We would gladly expatiate on M. Chauveau's preface, one of the most philosophical and practically useful introductions in the whole range of veterinary literature, but we must pass on to the consideration of questions of higher importance.

In the enumeration and classification of domesticated animals, our author adopts the arrangement of Cuvier; and he places the dog and cat in the order 'Carnassiers,' the 'Sarcophaga' of Grant's latinized Cuvierian nomenclature, the 'Carnaria' of Blyth's. We wonder he should sanction, at the present day, a classification which, though wonderfully great at the time it was composed, can only now be adopted with modifications. Cuvier, that immortal genius, in whose steps Chauveau has striven, and that with singular success, to tread, evidently erred when he confounded the rats with lions and tigers, and these with walruses and seals. How striking is the contrast when, from the genera Vespertilio and Galeopithecus, he passes to the Erinacea; from the genus Talpa to speak of Plantigrade Carnivora! There is something plausible in Chauveau's explanation of his choice

when he says that such a procedure will avoid all confusion of scientific language. But, throughout the 'Traité d'Anatomie comparée des Animaux domestiques," the author has only exceptionally separated the dog from the cat. We believe that, "for a carnivorous group, the feline animals must be selected as the standard—most characteristic example—of the order; but, in its totality, without reference to especial modifications, the dog has better claim to be placed at the head;" accordingly Chauveau has mainly devoted his attention to this animal, hence he has been sometimes led into error in not signalising generic anatomical differences. MM. Rigot and Lavocat had established this precedent in their 'Complete Treatise of the Anatomy of the Domesticated Animals;' and Professor Leyh, of Stuttgart, also groups the 'Fleischfressern,' or 'Flesh-eaters,' under one head, when speaking of differences.

In a work on comparative anatomy, which should really be the basis for a complete zoological classification of our domesticated animals,—always retaining the horse as the standard of comparison,—the differences should, we conceive, be better detailed than they have been hitherto, where authors have modestly aimed at giving a rough sketch of the anatomy of the other animals which are subservient to man. We record this stricture to prove we are no adulators, but desire to be just critics; for this is, after all, only one of the very many works, by very able authors, the contents of which do not exactly come up to the professions of the title and the preface. Such a reflection has often suggested to us a simile between books and ladies. But, witticism aside, it is a question we have sometimes put to ourselves,—Why should not the anatomy of *all* our domesticated animals be taught? Chauveau has incorporated in his work what Professor Gurlt proffered some time back to the public, in his 'Magazin für die Gesammte Thierheilkunde,' viz.: The anatomy of domesticated birds. He has not yet ventured so far as some of the fanatic naturalizers and domesticators of animals, now-a-days, to speak about fishes. We have it, however, from a good source that he has not shrunk from the difficult task of dissecting the osseous and muscular system in many

of those, the artificial propagation of which has so much been studied of late.

In this, the first volume of Chauveau's work which occupies our attention, he has embodied osteology, arthrology, and myology. The first and second need no comment: it is the anatomy of the muscles which calls for some. With Geoffrey Saint-Hilaire's doctrines for his guide, and Bourgelat's nomenclature as his basis, the distinguished young anatomist of Lyons has ventured to change the names of some muscles, so as to adapt them to his philosophic views of anatomy in general; and, in so doing, he has been guided by the fact, as he states it in his preface, that "the form and the functions of organs do not offer any stability, their relations alone are invariable; these alone are incapable of giving false indications in the comparison of the instruments of life." To exemplify this, he especially mentions the glutei muscles, which he distinguishes as the superficial, the median, and the deep glutei. He thus considers, as we do, their relative position, with the exception of the gluteus maximus, which he calls *the median*, from its situation, which is constant, but its size varying widely in different animals. Chauveau has certainly facilitated the study of the various anatomical authors of his country by sometimes giving copious lists of synonymes. French veterinarians have already much mystified the subject by each having a distinct anatomical nomenclature. They thus positively place a great barrier before naturalists who resort to their works for the valuable instruction they contain.

Our author's general remarks on the muscles are followed by considerations on the following all-important topics:—"Choice of the subject for dissection,"—"Position to be given to it,"—"Rules to be observed in preparing muscles." As he divides the body into regions, the preparation of each is more or less dwelt upon, and thus the youngest student can, by the aid of M. Chauveau's illustrations, perfectly dissect a subject without further assistance. He is clear and concise, and will be found to have perfectly understood the subject.

We cannot pass over this part without commenting on

his peculiar ideas respecting the plantaris muscle. He calls it the 'Soléaire,' or Soleus, and, speaking of synonymes, says, "Bourgelat and his successors have wrongly assimilated it to the plantaris of man." One thing is certain, it is not the human soleus, this is the gastrocnemius internus, and not the plantaris of our quadrupeds. Again our author errs in saying "the carnivora have no plantaris." The dog has none, we admit, but the feline tribe possess it; and in the lion it is enormously developed.

In conclusion, we cannot but allude to the happily growing tendency to illustrate anatomical works. Gurlt's plates, published many years ago, evidently gave a great impetus in that direction. Many scattered plates have since appeared: but Professor Leyh, of Stuttgart, was the first one to contribute largely to the work commenced by the great anatomist of Berlin. To Chauveau, for a similar reason, much credit is due. He must have been indefatigable in placing his dissected preparations in a position natural to the living animal, and exemplifying them to the utmost. They are a most useful guide to the student in dissection; and although some of his woodcuts are singularly deficient in an artistic point of view, partly because badly printed, they are in general anatomically correct. It is to be regretted that the printer has not more satisfactorily carried out the munificent idea of the publishers, who, in issuing Colin's and Chauveau's 'Treatises on Comparative Anatomy and Physiology,' have conferred on the veterinary profession, and through it on the whole medical republic, one of the most signal among the many advantages for which science is indebted to them.

If it be thought that we have unduly criticised this work, it is because it has inspired us with great esteem for its author, who will, we confidently anticipate, ere long be engaged in the preparation of a new edition, so rapid must be the sale of the present one. We have reason to believe that it is in progress of translation into Italian, and we hope that all students in the schools of comparative anatomy throughout Europe may, before many years elapse, have the privilege of studying it in their own vernaculars.

THE VETERINARIAN, MARCH 1, 1855.

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

OUR PROSPECTS.

We should not only do violence to our feelings, but prove ourselves ingrates, indeed, did we not at once express our thanks for the numerous kind promises of support we have already received from our friends. By the reiterated encouragements they have given us, we are emboldened confidently to hope, not only for the *continued*, but the *increased* prosperity of our periodical; and our earnest endeavours shall be made to secure this. Whatever "is honest and of good report," that we will strive to accomplish, believing that by so acting, we shall, as journalists, gain all that we are desirous of possessing. Nor have we any fear of being charged with overweening self-confidence, when we express our well-grounded conviction that an improvement will be effected in the work generally. This, indeed, we are convinced must be the case, from the *nature* of the support we have been so kindly assured will be given to us. Fresh facts, too, connected with medicine, bearing on Veterinary Science, shall, as we become conversant with them, be recorded by us; while it will be our duty and our privilege—for they are correlatives—to seek out from contemporary publications, that kind of information which will both profit and interest our readers. To each section, therefore, our earnest attention will be given. And when we reflect on the rapid advance which is taking place in the collateral sciences, and the discoveries that are being made in physiology and pathology, more especially by the aid of the microscope, and the application of the principles of chemistry—whence has resulted a simplification of the treatment of diseases, and a more intimate acquaintance with their nature—we cannot for a moment

entertain a doubt that the transference of these truths to the pages of *The Veterinarian* must render the journal in every sense worthy of the profession. The realization of this is what we aspire to, nor shall we be contented till it is attained. To no less a height does our ambition rise!

It is very gratifying to know that the outline of our views intentions, which we felt it to be incumbent on us to give in our last number, has been generally approved of. We could not hope to please *all*, for there ever will be those who can find in the best devised plans something that is objectionable, and that for a very simple reason, man's schemes are always imperfect. To such we are willing to accord that which we claim for ourselves—a right to form and to hold an independent opinion. Nay, we are obliged to them, both for their friendly criticism and suggestions for improvement, some of which, probably, will be adopted hereafter.

As to the difficulties that may from time to time present themselves in the carrying out of our plans, we can only hope there will be none that will prove insuperable. Our course is plain and simple enough—the inserting of such matter as we may be furnished with for publication, reserving to ourselves the editorial right of selection and arrangement; adding, if it be the description of a disease, similar cases, should we know of their occurrence; or, if otherwise, short and explanatory comments, when necessary, placed within brackets at the end; thus increasing, if this be possible, the worth of the communication. By these means we believe the archives of Veterinary Medicine will become rich in accumulated facts connected with this division of science, and our journal prove a record to which reference may be at all times confidently and advantageously made.

With party we profess to have no sympathy. We would not have our minds "cribbed, cabined, and confined" by its narrowness or one-sided exclusiveness. That which we have devoted ourselves to is expansive in its nature, and not confined to country, climate, or to language. 'Tis world-wide, and all alike bask under its mind-invigorating influence, where freedom and civilization have found their way, har-

bingered by truth. Our object and our watchword are but one—THE ADVANCEMENT OF OUR PROFESSION. Our faith and our confidence are strong, and may it never be ours "to dash the cup of expectation from the lip."

It may not have been observed that with the present volume a *New Series* of this journal was entered on. Its necessity was seen at the beginning of the year, so that it will constitute a favorable period for those to commence taking this work who hitherto might have hesitated to do so, from a dislike to possess a journal which probably would have been incomplete.

And now that our little bark is fairly launched on the waves of public opinion, may we have the good fortune to "take the tide at its flood;" to catch the favoring breeze, and so to shift the sails, when varying gusts arise, that periodically she may return richly laden with the fruits of mental industry and observation; thus adding to the intellectual stores of those for whom we willingly labour.

We well know the truthfulness of the poet's expression, that "it is not in mortals to command success," but "may we do more—deserve it;" for soon too, with us, the sands of time will have run out, and "the wearied springs of life stand still."

OUR REVIEWS.

. . . Ten censure wrong for one who writes amiss.

. . . . . .

Let such teach others who themselves excel,
And censure freely, who have written well.

. . . . . .

Of all the causes which inspire to blind
Man's erring judgment, and misguide the mind,
What the weak head with strongest bias rules
Is pride, the never-failing vice of fools.
Whatever nature has in worth deny'd,
She gives in large recruits of needful pride.

If once right reason drives that cloud away,
Truth breaks upon us with resistless day;
Trust not yourselves, but your defects to know,
Make use of ev'ry friend—and ev'ry foe.

. . . . . .

Avoid extremes; and show the fault of such,
Who still are pleased too little or too much.
At ev'ry trifle scorn to take offence,
That always shows great pride, or little sense;
Those tender stomachs are not sure the best,
Which nauseate all, and nothing can digest:
Yet let not each gay turn thy rapture move,
For fools admire, but men of sense approve.

. . . . . .

Be thou the first true merit to befriend,
His praise is lost who stays till all commend.

. . . . . .

Be silent always when you doubt your sense;
And speak, tho' sure, with seeming diffidence:
Some positive, persisting fops we know,
That, if once wrong, will needs be always so;
But you with pleasure own your errors past,
And make each day a critic on the last.

'Tis not enough, your counsel still be true;
Blunt truths more mischief than nice falsehoods do;
Men must be taught, as if you taught them not,
And things unknown propos'd as things forgot.
Without good breeding, truth is disapprov'd;
That only makes superior sense belov'd.

Be niggards of advice on no pretence;
For the worst avarice is that of sense.
With mean complacence ne'er betray your trust,
Nor be so civil as to prove unjust:
Fear not the anger of the wise to raise;
Those best can bear reproof who merit praise.

POPE'S '*Essay on Criticism.*'

No one can have watched the growing frequency in the intercourse among peoples, various communities or professions of the same nation, without being struck by the fact, that *pari passu* the constitution of a tribunal progresses, before which the personages in the great drama of life are brought for judgment.

When the glory of ancient Rome was at its zenith, the interchange of relations between the remote parts of the empire was so rare and difficult, that Livy, the famous historian of the great city, had so few materials for his narrative, that much of it is manifestly the weaving of his constructive imagination; so much so, as to have given scope for the sweeping criticism of Niebuhr.

We sometimes are amazed at the fundamental truth of the wise man's sentence: *There is nothing new under the sun!* Fundamental truth we call it, because such it is; but the foundation has been so wonderfully built upon, that the similarity of the world's edifice at the interval of centuries is only recognized in outline. Vice and virtue, ignorance and learning, are still absolutely what they were, but their form, their degree, though not their kind, have been singularly metamorphosed. In nothing is this so evident as in the judgment formed of the actions of men by their contemporaries. We are no longer satisfied with leaving to posterity the weighing of our proceedings, intellectual and material, but we must have a council sitting *in permanence*, from which judgment on passing events shall emanate. This council is the periodical press of which we are members.

There can be no doubt that the manifestos and verdicts of Printing-house Square, curb even those in ermine decked; and that the equally noble potentates of the intellectual universe pay homage to the judgment of the professional press; thus on those who in it review and criticize the scientific progress of the age, devolves a duty sacred as important.

We have reached this point by a tortuous course not without design. This is the first number of our series in which a review has appeared, and we are anxious to make it known with what spirit we engage in the great office of public critics. The incomparable Essay on Criticism, from which we have so largely quoted, shall ever be our guide in the performance of this section of our onerous duties. We shall forget persons, only bearing in remembrance the great end of our mission; the increase of scientific truth, by culling all that is valuable, setting aside the false, and giving such monition as we may

deem necessary to the furtherance of our great and useful object. This, and neither adulation nor vituperation, is the reviewer's legitimate vocation; a vocation in which we hope to acquit ourselves in proportion to the purity and consistency of the motives with which we are devoted to it.

ROYAL COLLEGE OF VETERINARY SURGEONS.

Council Meeting, January 17.

Present—The President, Messrs. Braby, Burley, Ernes, Goodwin, Mayer, Peech, Sylvester, Turner; Professors Spooner, Simonds, and Morton, Treasurer, and Mr. Gabriel, Secretary.

W. Field, Esq., the President, in the Chair.

The minutes of the previous meeting were read and confirmed.

Letters were read from Mr. T. W. Rogerson, acknowledging his election as Vice-President; from Mr. F. King, with a donation for the Library; from Mr. Peech, with a second donation for the Library; from Mr. G. Austin, with specimens for the Museum; and from Mr. Adlard, on behalf of Mrs. Percivall, with a donation of a part of the works of the late Mr. Percivall for the Library.

The President stated that he had, in behalf of the Council, though without its sanction, written a letter of condolence to Mrs. Percivall.

The letter was ordered to be entered on the minutes.

Professor Morton proposed a vote of thanks to the donors to the library and museum, and to the President for having so promptly written to Mrs. Percivall.

Mr. Mayer seconded the motion, which passed unanimously.

An engrossment of the lease of the premises, 10, Red Lion Square, was then laid before the Council; and, on the motion of *Professor Spooner*, seconded by *Professor Simonds*, it was resolved that a Committee, consisting of the President and two members of Council should be appointed to examine the lease, and attach the seal of the College thereto.

Professors Spooner and Simonds were appointed members of the Committee.

On the question of reconsidering the term "Institute," being brought forward, letters were read from Mr. Lepper and Mr. Pritchard, objecting to the word "Institute," as applied to the College premises, and recommending its disuse.

Professor Morton said the word "Institute" was adopted for the sake of a better distinction between the Royal College of Veterinary Surgeons, and the Royal Veterinary College. That, however, he regarded as an insufficient reason. Persons might occasionally confuse the two, as was the case with the London University and the University of London; but the proper designation should nevertheless be maintained.

Mr. Turner urged the discontinuance of the word "Institute," but desired that it should be generally known that the College was part and parcel of the original Royal Veterinary College of St. Pancras.

Professor Spooner said the word "Institute" was adopted at his suggestion, with a view to prevent confusion, but he would now vote for its abolition. It did not at first occur to him that a College was really an Institute, and that the additional title was therefore superfluous.

The Secretary then moved the omission of the word "Institute."

Mr. Peech seconded the motion, which was unanimously adopted.

The Treasurer's balance sheet for the quarter was then laid before the Council; it showed a balance in hand, after defraying the current expenses of the quarter, as well as the extra ones of the lease, the solicitor's account, and a re-issue of the register, of £164 3*s.* 11*d.* *Mr. Burley* moved its reception and adoption.

Mr. Turner seconded the motion, which passed unanimously.

The registrar reported two deaths and six admissions during the quarter.

Mr. Gabriel gave notice of motion for the election of a member of the Board of Examiners, in the place of the late Mr. Percivall.

Messrs. Braby, Ernes, and the Secretary, were named as the Committee of Supervision, and the proceedings terminated.

E. Braby,
W. Ernes,
E. N. Gabriel.

At the termination of the Council Meeting, the members

present formed a Committee to consider the desirability of making arrangements for the Annual Dinner, on the day of the General Meeting of the Profession in May, when it was resolved, That the members of the Council constitute a Committee for that purpose, and that a sub-Committee be appointed to carry out the details of the same.

MISCELLANEA.

CAMPHOR.

This drug, according to Mr. J. Ince, is the most popular remedy at the present day among the French. With us it was at one time an altogether proscribed article, and many even now, think it of only doubtful utility. We are, however, disposed to attribute to it diuretic and febrifuge properties when given internally, and anodyne action when applied externally.

Mr. Ince says, "Camphor is the Proteus of Raspail's Hygiène. It is ordered in every shape; is either used as snuff, or smoked in cigarettes; taken internally for almost all diseases, or exhibited in various forms as an external application. Of these, several formulæ are given for a pomade, a vinegar, and a cerate. We extract the following:

EAU FORTE—STRONG SEDATIVE WATER.

Liquor. Ammoniæ, ℥iiiss;
Spirit. Camphoræ, ℥iij;
Bay Salt, ℥j, ℥j;
Aquæ Destillatæ, ℥xxxij.

Dissolve the salt in the water, with a few drops of the ammonia; allow the impurities to settle, and add the clear liquor to the camphor and ammonia, previously mixed together by agitation in a stoppered bottle."

This preparation, we are told, it much too strong for ordinary use, and is intended only for veterinary practice.

The effect of this remedy is described as nothing less than marvellous; its action depending partly on the absorption of ammonia and salt (the two great solvents of the coagulation of the blood), by the superficial vessels of the skin, and partly, of course, upon the camphor which it contains. By keeping, it acquires a smell of bitter almonds, and after a certain time a white powder is deposited. It is not then considered as unfit for use, but requires to be well shaken up before applying it.

Under the influence of this preparation, fever is said to disappear, and endless maladies to be subdued.

To what extent these statements are true, we are contented to leave our readers to decide. To the above lotion we should be inclined to give resolvent powers, but we should assign by far the greater part of its action to the ammonia rather than to the camphor. Nor do we think it better than other formulæ which already exist among us.—*Pharmaceutical Journal.*

GLYCERINE.

Glycerine has been substituted for cod-liver oil by Dr. Crawford, as stated by him in a letter to *The Chemist*, who has found it equally as efficacious as a medicinal agent, and far less nauseous to take.

He also finds that the assimilation of iodide of iron is materially increased by giving it in combination with this principle. And as its solvent power over sulphate of quinine, and phosphorus is so great, we see no reason why veterinary surgeons should not avail themselves of the use of this vehicle for the exhibition of those agents.

The first of these positions settles the question as to the cause of the efficacy of cod-liver oil: it is not on account of the iodine or bromine it may contain; but its therapeutic action is referable to the large amount of hydro-carbonaceous matter in it.

Glycerine (Greek for sweet) is obtained abundantly during the formation of potash and soda soaps. After the soap has formed, the liquor is to be neutralized by sulphuric acid, and then evaporated to a syrupy consistence. The glycerine is extracted from this by means of alcohol and subsequent evaporation; or it may be procured by boiling oxide of lead with fats, or oils, and water; the lead being removed by means of sulphuretted hydrogen. It is a thick uncrystallizable fluid, having a sp. gr. of 1·28. Its composition is $C_6\ H_7\ O_5$ (anhydrous). It is sweet, inodorous, and soluble in all proportions in water and alcohol, but insoluble in ether. It does not ferment, but dissolves many salts, and also baryta, strontia, and oxide of lead, which compounds are not dissolved by water.

VALUE OF CARROTS FOR MILK COWS.

I have tried feeding milk cows on carrots, and will give you one of my experiments. I have (April 15th) seven cows in milk—one calved in June, the rest in September and

October. I raised eighty bushels of rutabagas and four hundred bushels of carrots, and gave them to my cows, commencing the 1st of December. I gave them about 2½ bushels per day, at noon, the rutabagas first, and when they were all fed out, the same quantity of carrots. I found, when I had fed the latter a few days, that my cows were each giving from two to three pints of milk more per day, than when fed on rutabagas. I was feeding my cows, meanwhile, with cut hay, and 2 lbs. oilcake and meal, and 2½ lbs. wheat screenings, ground. The thought struck me that I should like to know the value of carrots for making milk, so I selected the cow that calved last for the trial. I weighed the hay, meal, and carrots, and fed her on 27 lb. of hay, 4½ lb. of mixed meal, and 22 lb. of carrots, and she gave 35 lb. of milk per day. I then left off the carrots and gave the same amount of meal, and all the hay she would eat, which was 33 lbs. per day. After feeding so for a week, I found she gave 23 lb. of milk per day. I then gave her the carrots as before, and in eight or ten days she came up again to 35 lb. of milk per day. This shows that carrots are worth to me, to feed cows, 82 cents per 103 lb. Hay is worth 20 dollars per ton in the barn, and at 3 cents per quart, or one cent per pound for milk; 6 lb. less hay, and 12 lb. more milk, gives 18 cents for 22 lb. of carrots. My carrots are all gone now, or I would try one or two more cows. Next winter I hope to have another opportunity for experiment.—Abner Haven, *Rural New Yorker.*

ARMY APPOINTMENTS.

As several appointments of veterinary surgeons have been recently made, both by the War Office and the Board of Ordnance, and as many changes have likewise taken place among regimental veterinary surgeons, consequent upon the active service of the army in the East, we give the list corrected up to this date, and shall continue to notice any further alterations which may occur.

Those marked * are serving in the Crimea.
Those marked † are Assistant Veterinary Surgeons.

Wilkinson John, Esq.	Principal Veterinary Surgeon to the Army.
Stockley, W., Esq.	Senior Veterinary Surgeon to the Board of Ordnance.
†Barker, John, Esq.	1st or King's Dragoon Guards.
Brennan, Jas., Esq.	Royal Artillery.
Brett, Chas. C., Esq.	Cavalry Depôt, Maidstone.
*Byrne, John, Esq.	4th Light Dragoons.

*Byrne, Luke, Esq. . . .	4th Dragoon Guards.
†Chambers, Evander, Esq. .	Cavalry Depôt, Dorchester.
*Cherry, Alfred H., Esq. .	Staff.
*Cochrane, Jno. Thos., Esq.	Royal Artillery.
*Collins, Francis F., Esq. .	16th Lancers.
Collins, James, Esq. . . .	6th Light Dragoons.
*Constant, Stephen, Esq. . .	5th Dragoons.
*Cotterell, Francis, Esq. . .	Royal Artillery.
†Death, William, Esq. . . .	Cavalry Depôt, Brighton.
*Delany, Felix, Esq. . . .	Staff.
Gardiner, B. C., Esq. . .	3rd Light Dragoons.
*Gavin, William, Esq. . . .	17th Lancers.
*Gloag, John W., Esq. . .	Staff.
*Grey, Edward Simpson, Esq.	8th Hussars.
*Gudgin, Thos. Parinder, Esq.	2nd Dragoons.
Hallen, Herbert, Esq. . .	Cavalry Depôt, Canterbury.
*Harply, Matthew J., Esq. .	Royal Artillery.
Hurford, Thos., Esq. . . .	9th Lancers.
Jex, Thos., Esq.	1st Life Guards.
Kingsley, John, Esq. . . .	Cape Mounted Riflemen.
Legrew, John, Esq. . . .	2nd Life Guards.
Lord, Wm. C., Esq. . . .	14th Dragoons.
Lord, Wm. Barry, Esq. . .	Royal Artillery.
Owles, Alfred J., Esq. . .	6th Dragoon Guards.
*†Partride, William, Esq. . .	11th Hussars.
Philips, James, Esq. . . .	7th Hussars.
*Poett, Matthew, Esq. . .	1st Dragoons.
†Reynolds, Bernard, Esq. .	Cavalry Depôt, Newbridge.
Rollings, Gabriel Isles, Esq.	Royal Artillery.
Shaw, Austin Cooper, Esq.	3rd Dragoon Guards.
Siddall, J., Esq.	Royal Horse Guards.
Siddell, Thos., Esq. . . .	10th Hussars.
Smith, Opie, Esq.	2nd Dragoon Guards.
*Stockley, John S., Esq. . .	Staff.
Thacker, Wm., Esq. . . .	15th Hussars.
*Towers, Thos. J., Esq. . .	13th Dragoons.
*Withers, Hicks, Esq. . . .	Royal Artillery.
†Sewell, Herbert, Esq. . . .	London.

OBITUARY.

Since our last, we have been informed that the following members of our profession have been removed from among us by death:

Mr. John Dixon, Leeds,
Mr. George Douglas, Grantham,
Mr. James Reynolds, Newark.

THE

VETERINARIAN.

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Communications and Cases.

SESAMOIDITIS;

OR THE SEAT OF OBSCURE LEG-LAMENESS OF HORSES UNMASKED.

By James Turner, M.R.C.V.S., Regent Street.

(*Continued from the 'Veterinarian' of November*, 1847.)

Domestic troubles, in rather quick succession, during the last few years, have pressed somewhat heavily upon me, or certainly I should not have allowed the subject of so formidable a malady as the above to have slumbered so long.

Favoured by admission into your valuable columns, I am induced to renew the investigation from the following motives: *Firstly*, to redeem my promise to the profession generally. *Secondly*, because I flatter myself that it may render good service to the junior members of the profession when they find themselves launched into active practice, and thrown solely upon their own resources, in meeting the exigency of these cases.

Let us assume that, in a case of obscure lameness, the seat of mischief shall be somewhere below the knee of the horse, and that the foot is not involved. The tyro's first care will be to ascertain that the suspensory ligament is intact, also the main back sinew, together with its sheath, and that there is likewise an absence of ringbone, splint, and other exostoses, in the region of the coronet. At this stage of the examination (when perhaps narrowly watched by an unfriendly eye) great, indeed, would be the pity if "Sesamoiditis" had never entered into the young man's philosophy or his nosology.

Thirdly, veterinary medical jurisprudence is another inducement.

I cannot refrain, in common with others, from making a passing remark, and from expressing my regret at the occurrence, of late years, of serious collisions in veterinary evidence, within our public law courts, between the highest scientific authorities; yet I do most sincerely believe without the slightest blame either morally or professionally being attached to any individual.

As a chartered professional body, it behoves us to be much more industrious than hitherto in accumulating and chronicling all the great leading facts as landmarks. The public have a right to expect from us a much larger array of demonstrable facts. We have not as yet fairly earned by scientific contributions the claim of a cordial shake of the hand from the members of the sister science. We are too young, and have not contributed our quota of recorded facts bearing upon medical science.

I must remind the rising generation of veterinary surgeons that familiarising themselves by minute dissection (not by reading) with the true normal structures, and promptly availing themselves of their almost unlimited scope for *post-mortem* examinations, the object of their pursuit has only to be seen to be at the same time within their grasp.

It is their mission by the exercise of their talents and energies to reap well merited laurels, and thus materially to extend the present limits which seem to bound the anatomy, physiology, and pathology of the lower animals. Then, and not till then, can they take their place as a matter of right by the side of their compeers in the science of medicine.

There yet remains an immense unexplored field to attract and captivate the young scientific veterinarian, and if, besides concentrating his talents on the points I have alluded to, he has the command of physical strength, his chance of success far outstrips the young surgeon of human medicine in finding out and bringing to the surface Nature's secrets. All hail! "the vast renown!"

But to return to the subject of sesamoiditis. It is fresh in my memory that some of the horse causes, to which I have alluded, have within the last two or three years involved the question of the existence of this disease in a concealed form.

From conversations which I have had with several leading provincial practitioners, I am satisfied that this formidable leg disease is pretty well understood in the provinces, but I complain that it has not been duly recognized by many of

the metropolitan veterinary authorities who are actively engaged in practice. And as to British veterinary authors, ancient or modern, I look in vain even for a mention of it. Let it be remembered that this is a disease of the fore-legs (although the hinder ones do not always escape it), and that, therefore, it is of great importance.

To obviate the recurrence of professional contradictions in this affection, I do most earnestly hope that in future our London veterinary surgeons, besides continuing so assiduous in applying their remedial measures for this malady, will unhesitatingly admit that it has a name, and that our veterinary nomenclature is incomplete without its introduction. I feel assured that such a decision would be satisfactory to our provincial brethren, and that by them it would be extensively promulgated.

Sesamoiditis is essentially a disease of wear and tear—violence received in a variety of ways. The subjects of it are the colt, whether of the light or the heavy breed, when undergoing the exertion of breaking, likewise the fast or the slow animal of matured age, but especially the race-horse, the hunter, the fast trotter, and the charger, while even the cart-horse is not exempt from it.

It is an evil seriously affecting the interests of the owners of all fast going horses, as it is liable to occur in a moment, and when the least expected. I, however, must leave the *details* for another, and I hope early paper, on this important subject.

THE GASES CONTAINED IN THE INTESTINES OF THE HORSE.

By Wm. Camps, M.D.

The following remarks on the presence of the gases existing in the various parts of the intestinal canal of horses have appeared in some of the journals published in our own country, and on the Continent, that are especially devoted to physiological and pathological science. These refer to certain experiments of Valentin, a German physiologist, who has examined the gases that he found to be present in the intestines of the horse. The animals on which he experimented were killed by bleeding. Separate portions of the intestinal canal were isolated by double ligatures, and the gases collected immediately after death. His experiments were made upon two animals.

First.—A gelding, twenty years old, healthy, fed with oats and hay. The stomach contained a large quantity of food; the gases of the small intestines were collected from comparatively empty portions; the cæcum was in a great part filled with the remains of food; the gases of the rectum were from between the fæcal balls.

Second.—An old mare, healthy, fed with oats. The stomach and cæcum were almost filled with solid masses. The rectum contained so small a portion of gas that no sufficient quantity for an analysis could be collected. The following are the names of the gases found in the various parts of the intestinal canal: Carbonic acid, carburetted hydrogen, sulphuretted hydrogen, hydrogen, oxygen, ammonia, and nitrogen. The coincidence of the large proportion of carbonic acid in the stomach and cæcum of both horses is remarkable, a circumstance probably connected with the functions which both organs have to fulfil in the digestive process. The presence of sulphuretted hydrogen in the gases of all parts of the intestinal canal leads Valentin to conclude that the formation of this gas commences in the stomach. He considers the albuminous substances of the food to be the source of this formation, and draws the inference, that in the stomach not only a mere solution of some of the substances containing nitrogen and sulphur takes place, but that there is also a partial decomposition. It must, however, as yet remain uncertain how much of the sulphuretted hydrogen found in the stomach is due to a development of this gas in the stomach itself, and how much may have been introduced from lower parts by the diffusion of gases. Ammonia, it will be seen, on the other hand, is met with only in the large intestines. The proportion of hydrogen found by Valentin is smaller (except in the rectum) than that stated by former observers. He agrees, however, with them concerning the total absence of oxygen in the gases of the large intestines. The larger quantities of carburetted hydrogen and hydrogen in the rectum show that changes in the remains of food continue taking place up to the last portions of the digestive tube.

52, *Park Street, Grosvenor Square.*

FRACTURE OF THE HUMERUS.

By F. J. Sewell, M.R.C.V.S., Pimlico.

The subject of this case was a bay carriage-horse, four years old. Early in the morning of Oct. 21, 1854, the groom

perceived that he was very lame of the off fore leg, and my attendance was consequently requested. On seeing him in the afternoon, I found the limb flexed and resting slightly on the toe, with an inability on the part of the animal to move it forwards. There was considerable effusion around the humerus, and the pulse and respiration were somewhat accelerated. On raising the limb gently forwards and outwards, a crepitation could be distinctly detected, and more particularly on applying the ear to the shoulder. I had no doubt that a fracture of the humerus existed, in which opinion my friends, Messrs. Varnell and Yeomans, who saw the case the following day, fully coincided. As there was no distortion or shortening of the fractured limb, and as the horse was young, and of considerable value, it was determined to give him a chance of recovery. He was accordingly placed in the slings. The principles of treatment in this case appeared to be the adoption of perfect quietude, a cooling regimen, and the giving of support to the whole limb as much as circumstances would allow of. From Oct. 24th to the 30th the effusion around the injured parts very much increased, and gradually extended to the knee. The additional weight of the swelling tended to draw the shoulder downwards, so much so that there was an inclination to rest the limb on the front of the fetlock-joint. To obviate this, a thick compress was adapted to the pastern, and which received the superincumbent weight, and tended to the support of the limb. No fomentations or lotions of any description were made use of, as their application would only have irritated the patient, and disturbed the position of the fractured parts. Very little irritative fever followed, and the general health and spirits of the animal remained good throughout the progress of the cure.

There was no particular change, except the gradual lessening of the swelling, till the latter end of December, when the horse began to place his foot more flatly on the ground. The improvement continued, till at length he stood firmly on the limb, and occasionally pawed the litter under him. During the month of January the patient was removed from the slings in the daytime, but replaced in them at night. By the 21st of this month he was enabled to bear a little walking exercise. The distinguishing features of this case are that, under three months, union of one of the largest bones of the frame, and consolidation of the callus to an extent sufficient to allow of locomotion being undertaken by the animal, had been effected.

On stretching a tape from the *point* of the shoulder to the

point of the elbow, the injured limb was found to measure three quarters of an inch less than the other, but this might be referred principally to the wasting of the muscles. With this exception, and a slight turn of the elbow outwards, nothing now exists to denote the occurrence of so serious a lesion.

Upon this case Assistant-Professor Varnell remarks that, when I was requested to see the animal, Mr. Sewell informed me that he had not the slightest doubt as to the nature of the lameness, being, as he said, fully satisfied that the humerus was fractured, but that both himself and the owner preferred having another opinion before they decided as to what step should be taken under the circumstances. On my arrival at the stables I was shown into a large, loose box, where I found the patient lying on his left side, being the opposite one to that which was said to be injured. I had thus a very good opportunity of making an examination of the limb without altering the position of the animal. In the recumbent position, there were no visible indications of any lesion whatever, but having heard Mr. Sewell's opinion as to the seat of injury, I at once directed my attention to that region of the fore extremity. The horse being very tranquil, I had a man placed at his head, with a view to keep him down, while I placed a second man at his affected limb, the lower part of which he was told to raise gently, my own hand being at the same time placed over the part of the bone where the fracture was believed to exist. By thus manipulating I was at once convinced of the correctness of the diagnosis which had been given, as the movement of the limb conveyed to the hand the sensation of crepitation, and which was fully confirmed on the application of the ear over the seat of fracture. Upon further examination, although the fracture was masked by large muscles which surround the bone, I was enabled to give an opinion that the fracture was transverse in its direction, and that the divided ends of the bone were placed directly in apposition with each other. In this position they would be more likely to remain than had the fracture been in any other direction, such for example, as oblique or longitudinal. The ends of the divided bones in the latter named varieties of fracture generally pass each other, in consequence of the contraction of the muscles, thus causing immediate distortion of the limb, which is at once readily detected; but this, as previously remarked, did not exist in this instance. I was inclined to take a favorable view of the case, my prognosis being based upon the following grounds:

1st. The age of the horse, this being in favour of a quick reparation and consolidation of the bone.

2d. The state of the animal's constitution, as denoted by his general appearance, there being no indications of a scrofulous diathesis, which could but prove unfavorable to a restoration of the injured part.

3d. The fracture being a simple one, and unconnected with any riding of the ends of the bone upon each other, thus obviating the necessity of bringing their ends in apposition by overcoming muscular contraction, and which, had the necessity existed, could not have been properly accomplished in a fracture of this description.

4th. The slight amount of tumefaction which was present; and, 5th, the little constitutional disturbance.

These circumstances being all in our favour, coupled with the apparent unexcitable temperament of the animal, impressed me with the idea that the case would do well, and especially so, as there seemed to be every convenience for carrying out any treatment that might be suggested. These views were acquiesced in by Mr. Sewell; and the owner of the horse (much to his credit) promised to afford all the time that might be thought necessary for a perfect cure.

Arrangements were therefore made for leaving the horse under the care of Mr. Sewell, who forthwith proceeded to place him in well adapted slings. I did not see the animal again for a fortnight, when I found that he was progressing favorably.

I afterwards learned that he continued to go on well, and that when first taken out of the slings, he walked far better than could have been expected. His owner, I am informed, is about to remove him to his other stables, five miles distant, being fully satisfied that he can undertake the journey with perfect impunity.

I am induced to add to these remarks the following particulars relating to a case of fracture which has just been brought under our notice. The subject of it was a brown cob, fourteen hands and a half high, thick-set, and about eight years old. A short time since he had been under treatment in the College Infirmary for splint lameness, from which he had nearly recovered, when his owner, not wishing to keep him any longer at so great an expense, determined to send him to a straw yard, with a view of giving him the required rest. The horse was seen from time to time, and it was latterly observed that the lameness had entirely passed off. It was customary for the horses at this place to go out of the yard to other parts of the premises to

water, and on these occasions this horse was in the habit of galloping about very much. One day he was observed to be lame after his gambols, and so much so, that it was thought necessary by the persons having the care of the animals, to have the shoe taken off. In the attempt to do this, it was discovered that one of the bones of the pastern was fractured. We were informed of what had occurred, and, at the request of the owner, a van was sent for the animal, in which he was brought to the infirmary. An examination showed it to be a case of comminuted fracture of the long pastern bone, extending into its upper and lower articulations, thus making the case even more complicated than otherwise it would have been. Under such circumstances no hopes of recovery could be entertained, and the animal was therefore ordered to be destroyed.

Fractures of this kind are by no means rare in the fore limbs of horses. There is scarcely a practitioner of any standing who has not met with instances of it. I have heard it argued, that horses with upright pasterns are more liable to fracture of the pastern bones, than others in which a greater obliquity of this part of the limb exists, and perhaps it is so. Nevertheless, I have seen it occur in horses nearly thorough bred, and who had very oblique pasterns.

As a rule, fracture either of the os suffraginis, or os coronæ, is comminuted, the main split or division of the bone being usually in the direction of its long axis. Sometimes, however, it takes an oblique direction. Occurring as it frequently does on the level road, and when the horse is going at a moderate trot only, makes it difficult to assign a true cause for the fracture. May it be that the attention of the animal is somewhat suddenly taken off by an object which excites his attention, so that an unconscious step produces concussion and to such a degree as to fracture the bone?

CASE OF MESENTERIC HERNIA PRODUCING STRANGULATION OF RECTUM, AND ACCOMPANIED WITH RUPTURE OF THE ILEUM.

By John Markham, M.R.C.V.S., Rugeley.

Yesterday afternoon, March 8th, my attendance was requested by Mr. Holliss, of Oak Fields, to a mare which had been suddenly seized with abdominal pains while at plough; blood

had also been observed to pass down the nostrils. I arrived about 6 p. m. and found the mare in very great agony. Profuse perspirations bedewed the body, but the escape of blood from the nostrils had now ceased. I was informed that she had purged yesterday without any apparent cause, but had not been observed to void any fæces for the last six hours. The abdomen was swollen, the respiration very much increased, and the pulse quick and wavering. I gave an aperient in combination with an opiate, and threw up a clyster, which was, however, immediately ejected. Seeing this, I introduced my arm up the rectum, and found, at a short distance beyond the pelvic portion of the intestine, that I could not pass even a single finger farther onwards.

I now gave trial to opium with ether, and employed an infusion of tobacco as an enema, but without any benefit. Taking some tobacco in my hand I again introduced the arm into the rectum, and was enabled to pass a small portion of this sedative agent a short distance within the strictured part of the bowel, in doing which I remarked that no gaseous matters escaped, a fact which led me to believe that a more than ordinary stricture was present. With a view of supporting the sinking powers of life, and to neutralize the gaseous compounds, the preparations of ammonia, with diffusible stimulants were next administered, but with no avail, the patient sinking almost without a struggle in twelve hours from the attack.

Post-mortem examination.—About two gallons of a dirty green-coloured fluid, mingled with a little cut hay, was found in the abdominal cavity, and which, by further research, I ascertained had come from a small rupture of the ileum, at about three inches from its termination in the *cæcum caput coli*. The diaphragm was likewise ruptured, and the right lung greatly congested. A small quantity of blood was present in the bronchial tubes and trachea, which accounted for the nasal hemorrhage. On examining the rupture of the ileum, I discovered about twenty leech-like parasites of a small size, and white in colour. They were sticking with great tenacity to the mucous coat of the intestine near to its torn edges. I examined the inside of the bowels in many other parts, but could not find any more of these parasites. The lesion, however, which was the chief cause of the mare's death, was found at the terminal portion of the intestinal tube. Here a rent in the mesentery existed, into which a fold of the floating portion of the rectum had insinuated itself. This part, with some of the parasites, I send for your inspection. I ought to have previously remarked that the mare had often been the

subject of colic during the past year, but which required only ordinary measures to effect its removal.

[We thank Mr. Markham for affording us the opportunity of examining this morbid specimen. It consisted of about two feet of intestine, continuous with the pelvic portion of the rectum. A rent, as described by Mr. Markham, existed in the mesentery, or as it is sometimes called, the meso-rectum, and into this a double fold of the intestine had passed and become strangulated. The laceration was evidently of very recent date. The gangrenous condition of the impacted intestine was of itself quite sufficient to cause death, and the nature of the lesion was such as fully to explain the symptoms exhibited by the animal. The rupture of the ileum, of which Mr. Markham speaks, although likewise recent, was probably connected with some long existing functional derangement of the organs of digestion and assimilation, and which led to the repeated attacks of colic. One of these attacks most likely preceded and became the cause of the lesions which were found in both the ileum and the meso-rectum.—The parasites were ordinary examples of the entozoon, called the tænia serrata. These creatures are usually found in groups of ten or twelve in number, and often but in one part of the intestinal canal and that the cæcum, firmly attached by their sucking discs to the mucous membrane. They rarely measure more than an inch in length, and whether they are fully developed creatures, perfect in themselves or immature forms of other tænia, remains as yet an undecided question.]

VALVULAR DISEASE OF THE HEART.

By Francis Blakeway, M.R.C.V.S., Stourbridge.

On January 24th, 1855, I was requested by Mr. W. Hazledine to see a bay gelding, two years old, that had been unwell for some time. Upon my arrival at his farm, at 4 p.m., I found, somewhat to my surprise, that the animal was fast sinking. He was still standing, but his body was with much difficulty supported. The respiration was of that character commonly called "panting," and numbered from thirty-five to forty inspirations in a minute. The pulse at the jaw was regular but quick, being ninety per minute, and easily compressed. By auscultation, the sound of the heart

was readily detected on either side of the chest. Its beating was accompanied with a peculiar hollow-like sound, which the least excitement rendered audible several yards from the animal. The visible membranes were blanched upon their general surface, but studded here and there with petechiæ varying in size from a pin's head to an oat-grain. The extremities were cold, and slight œdema of them was present. There is no cough. Mr. H. informed me that since the animal has been in his possession he has continued to fall off in condition, although eating a good allowance of corn, and that up to the day before my seeing him he had lain down as usual. Diagnosis, diseased heart.

25th, 10 a.m. The patient's end is fast approaching; the pulse is much increased, but hardly to be felt at maxilla; the respiration is also more panting. The fore legs are arched backwards, and the poor animal can scarcely stand, although he persists in so doing. The œdema of the extremities is decreased. He has shown a constant desire for liquids. The other symptoms are about the same as yesterday. He was found dead at six o'clock on the following morning. At 11 a. m. I made a *post mortem* examination. Upon removing the common integument, I found the muscles pallid, but thickly studded with petechiæ, and which was especially the case with both the serous and mucous membranes throughout the body. The intestines were healthy, but slightly congested in places. Liver and spleen highly congested and softened in their structure. Kidneys enlarged and flaccid. On laying them open the pelvis of each was found to contain a quantity of thick mucus, having an appearance similar to pus, and which could be traced along each ureter into the bladder; this organ, however, was nearly empty. On opening the thorax, the lungs quickly protruded, being apparently much larger than usual, but pale in colour. On cutting into them they immediately collapsed, expelling a considerable quantity of frothy mucus. There was no effusion into either the chest or the pericardial sac, the structure of the latter was normal. The heart was of its natural size, but also pale and flaccid. The right auricle contained a large amount of coagulated blood, as did also the ventricle. The lining membrane of both these cavities was darker in colour than is usual, and two of the *tricuspid* valves were much thickened by a deposit about the size of a small nut upon each, which appeared to me to be an abnormal growth of the *corpuscula Arantii;* the other valves on this side of the heart were healthy.

The left auricle had much the same appearance as the right,

but there was protruding through the auriculo-ventricular opening a substance that at first sight might be mistaken for coagulated blood. On attempting to withdraw it I detached a small portion, which had something of a fungoid character. On cutting open the left ventricle, its superior part seemed quite filled with this same morbid growth. It appeared to have originated in the bicuspid valves, whose true character was completely lost, as was also that of most of the chordæ tendineæ, still I could distinctly trace one or two of these bands into this substance. I should imagine that, during the latter period of the animal's life, at each contraction of the ventricle, as much blood would pass back into the auricle as could possibly have gone into the aorta. I found also that the semilunar valves at the mouth of the aorta were diseased, but to nothing like the same extent as tricuspid.

The valves of the veins throughout were healthy, but on laying open the posterior aorta I was surprised to find, close to its bifurcation into external and internal iliacs, a portion of the same abnormal growth of nearly the size of a large acorn, which had evidently been detached from the valves of the heart and been carried to this place by the circulating current. The substance itself was irregular in its general aspect, and in places its structure was hardened, with slight ossific deposit; in other respects it had more the character of a fungoid growth of somewhat rapid development. I may add that the patient had been attended by a farrier in the neighbourhood, who was completely at a loss to account for the animal's illness, and who had been giving sedative and febrifuge medicine, but of course with no benefit.

CONTRIBUTIONS TO VETERINARY MEDICINE AND SURGERY.

By J. G. Dickinson, M.R.C.V.S., Boston.

It would not be consistent for me to offer a series of contributions to veterinary medicine and surgery, unless I really felt that every individual belonging to the profession should do his best to advance it.

I might have easily selected twenty or thirty cases from my note book, and have drawn them up in a more or less cursory manner; but it is rather my object so to produce them that they may not turn out to be an unconnected mass of facts, from which no conclusions can be drawn. This, then,

is my aim,—fall as short of it as I may or probably shall do. Experience has taught me, as I am confident it must have many others, that in the bustle of an extensive practice the most observant practitioner will often fail to give to the gleanings of daily practice that value which only extensive reading and deep study can impart to them. The first case I select is one of—

EXTRA-UTERINE GESTATION.

There is no doubt that *true* cases of extra-uterine gestation are extremely rare. When fœtuses are found in a more or less perfect state, free in the abdomen, the ova have doubtless found their way as usual into the uterus, from which ultimately they have obtained exit by rupture, and thus they have been improperly incubated.

Rupture of the uterus and escape of the fœtus may occur, as is well known, either at or before the time of parturition.

I here have, however, to relate a very singular case of extra-uterine gestation, which I had the opportunity of witnessing while assisting in the practice of Mr. Bowman, of Howden, in Yorkshire.

In the month of December, 1851, we were called in by Mrs. N—— to attend a valuable sow, which had been ill for some time, and should have pigged four weeks before our attendance was sought. Some mistake, however, was supposed to exist as to the precise time she was put to the boar, the general external appearances of approaching parturition not being present.

The symptoms manifest at the time we saw her were, loss of appetite, obstinate constipation, a peculiar or painful grunt, and a lying on her left side with her leg held out, as if to take the weight of it off the abdomen. When standing she would support herself against the wall, and then gradually drop down as easily as possible. A hard mass could be distinctly felt on manipulating the abdomen, especially towards the left side: the pain on pressure was intense.

A correct diagnosis being at first extremely difficult to make; to alleviate the symptoms, we prescribed hot fomentations to the abdomen, the exhibition of clysters, and the following draught:—

℞ Sol. Aloës, ʒij;
Ol. Lini, ʒij;
Tinct. Opii, ʒiv. M.

This gave no relief, and, therefore, some hours afterwards, we administered:—

℞ Ol. Lini, ℥ss;
Aloës Sol., ℥ss;
Hydr. Submu., gr. ij. M.

The second day the animal continued much the same: we therefore repeated the fomentations, and gave another half ounce of tincture of opium.

The third day the bowels were acted upon being the first time for seven days; but the pain of the abdomen and other symptoms were not lessened as a consequence. I expressed an opinion to Mr. Bowman, that if the sow was with any foundation believed to be in pig, as she had evidently gone over her time, and there were symptoms of something acting as a foreign agent in the peritoneal cavity, that it must be a case where the fœtuses had by accident escaped from the uterus; or, otherwise, that it was a bona fide case of extra-uterine congestion. Under such circumstances, we thought it advisable to discontinue medical treatment, there being no hope of recovery. On the following day she died.

Post-mortem examination.—Anxious to ascertain the accuracy of our diagnosis, we proceeded to the tan-yard where the sow was opened. The respiratory organs were found to be healthy. In the abdomen, however, there was intense and pretty general peritonitis, the visceral portions of the serous membranes being most affected. The uterus was found to have been seriously mutilated, evidently by the imperfect performance of the operation of spaying. The right horn and its ovary, with a part of the body of the uterus and vagina, were absent. A mass about the size of a man's head, enveloped in false membranes, was situated in the left iliac region, and connected with the left horn of the uterus, which was still continuous with its ovary and the vagina.

On dissecting the tumour, the osseous remains of seven pigs were discovered, enclosed in separate cavities. Seven heads and all the bones were collected. They were, however, denuded of all soft parts, as if they had been subjected to maceration.

This case has many interesting and novel features about it. If the vagina had an opening into the abdomen, or if such an opening existed only in the left horn, where were the ova fecundated? This act must have occurred as the Graaffian vesicles poured forth their contents, so that the semen found

its way into the Fallopian tubes without being lost from the artificial aperture in the uterus.

The second important question is, how did the embryonic development occur at first? The check to the complete formation of the young ones was evidently defective nutrition. Nature's artificial uterus, in the shape of false membranes, could not exactly answer the purpose.

Lastly, we must observe as being very probable, that not one of the ova separated from the left horn escaped incubation. Fourteen is reckoned a good litter of pigs, and seven consequently would be the complete number of ova furnished by each ovary, supposing both to yield the same proportion. The left one, however, is probably the most prolific in animals.

NASAL POLYPUS.

By the Same.

In the month of January, 1852, Mr. Bowman and myself were requested by Dr. Baker, of Howden, to attend a bay mare, twelve years old. Some months previously this mare had suffered from an attack of strangles, and at that time tracheotomy had to be performed to prevent asphyxia, from the enormous swelling of the throat which existed. After her recovery she went on very well for some time, when she was again taken ill, without any apparent cause. Her respiration gradually became much impeded, and this led to her becoming very excitable, so much so that she was threatened with suffocation if disturbed, even by simply opening the stable door.

A discharge from the nostrils at once attracted our attention. From the near one in particular it was copious, white, and muco-purulent in its character. So abundant was it that it would often plug up the cavity; when repeated washing was required to relieve the patient. We noticed, also, that the air did not pass with freedom through this nostril, and, on covering over the opposite one, symptoms of asphyxia were at once produced. No external signs of disease of the bones were present, nor any evidence of a collection of pus in the nasal sinuses, as evinced by percussion, although, in fact, we had no difficulty in coming to the conclusion that some obstruction did exist in this nostril, and in it alone. The index finger was passed up the opening, and with little difficulty we succeeded in reaching a soft and slightly elastic tumor,

which was evidently covered over by the mucous membrane. Its size could not be exactly ascertained, but we came to the conclusion that it was a nasal polypus, and which we considered might ultimately kill the mare were it not removed. The owner being reluctant to have the operation performed, alterative medicine was administered, and continual fomentations and steaming the nostrils persevered in. This treatment was seemingly attended with some benefit, as the discharge became more copious, and thereby afforded a little relief to the breathing. All this palliative treatment, however, could clearly have no permanent benefit, and as the life of the mare was still in jeopardy, an operation was decided on.

The difficulty of breathing was such that we thought it would be unsafe to cast the mare without first opening the trachea. She was, however, first thrown, and then it was found absolutely imperative that tracheotomy should be immediately performed. This accomplished, Mr. Bowman proceeded to extract the polypus by slitting up the false nostril, and then, with a curved, short-bladed, but long handled instrument, he succeeded in cutting away piecemeal about six ounces of a softish, and in part fibro-cellular, tumour. With this was a marrow-like substance, which I am led to believe was, to a great extent, a simple, plastic, sub-mucous exudation. The hemorrhage was very slight, no more blood being lost than could be expected from a laceration of the Schneiderian membrane. A few cold water injections were used, after which sutures were employed to unite the wound in the false nostril, which completed the operation. The mare was greatly relieved, so much so, that on closing the tracheotomy tube she breathed very freely through both nostrils. The trachea was kept open, however, for about three weeks, at the expiration of which time all swelling had passed away, and every appearance of nasal obstruction was removed. The wound freely cicatrized. Since her recovery the owner has bred from her, and there has been no recurrence of the untoward symptoms.

I am indebted to Mr. John Gamgee for the following particulars relating to this subject.

HISTORICAL AND CRITICAL REMARKS ON NASAL POLYPUS.

By J. Gamgee, M.R.C.V.S., London.

The learned Adams, in his Commentaries on 'The Seven Books of Paulus Ægineta,' says, that "Hippocrates describes five species of polypus. The first is represented to

be like a piece of torn flesh hanging in the nostril, and is to be extracted. The second consists of hard flesh, which fills the nostril, and is to be treated by the cautery, with the application afterwards of the "flos æris" to the part. The third is a round and soft piece of flesh growing from the cartilage, and is to be extracted by a ligature, which operation he describes minutely. The fourth is of a stony hardness, and is to be cut all round with a scalpel, then burnt, and the part touched with 'flos æris.' The fifth grows from the top of the cartilage, and is to be burnt."

Galen gives various "prescriptions from Archigenes, Asclepiades, Lampon, and others, for removing polypus. The most active ingredients in them are copperas, burnt copper, verdigris, alum, chalcitis, and arsenic."

Antonio Musa recommends a powder consisting of equal parts of arsenic and copperas. "This may prove dangerous," says Adams, "if misapplied; but, in the hands of a cautious surgeon, such an application will be found both safe and effectual."

Celsus, Oribasius, Scribonius, Octavius Horatianus, Aëtius, Alexander, Marcellus, and amongst the Arabians, Serapion, Albucasis, Avicenna, Mesne, Haly Abbas, Rhazes, and Alsaharavius, complete the list, with Guy of Cauliac, of ancient writers on polypus, quoted by Adams.

We can add to these some who have more exclusively written on the veterinary art, such as Marcus Porcius Cato, the celebrated censor, but superstitious friend of incantations, in whose work, 'De Re Rustica,' much is spoken of "Polypus in Naso."

Apsyrtus, Hierocles, and Hippocrates are quoted on this subject in the famous 'Hippiatricon.' Publius Vegetius Renatus, who lived from 450 to 510 years after Christ, did not omit to mention it in his 'Artis Veterinariæ, sive digestorum Mulomedicinæ,' the most complete work of its period.*

From Vegetius, apart secondary writings, we pass to the middle of the fourteenth century, when there appeared a book in great part compiled from the 'Artis Veterinariæ,' and which bore the title of 'Mascalcia di Dino di Pietro Dini, Maniscalco e cittadino fiorentino,' in which a whole chapter is devoted to fleshy productions of the nose or polypi.

Three centuries later, the illustrious senator of Bologna, Carlo Ruini, filled a side and a half of his royal quarto volume when speaking of nasal polypi: he was thoroughly

* See Ercolani, 'Ricerche storico Analitiche sugli Scrittori di Veterinaria,' Torino, 1851.

acquainted with the various modes of extirpating such tumours.*

Continental veterinary authors speak more or lessin general terms about polypus, either copying the ancientsor drawing from works on human medicine, or some of them from their own very limited observation. Comparatively, seldom have cases been recorded in journals or elsewhere, so that it would be difficult, not to say impossible, to write a complete monograph on nasal polypus.

English writers treat the subject with little erudition, indeed, most of them do not even mention the term polypus. White, Blaine, Field in his 'Records,' and even Mayhew in his new edition of Blaine's work are of this number. Youatt, in his work on cattle, says, "This is a rare disease in the horse, and still rarer in the ox. We have only one case of it, and that might have been said to be more polypus of the pharynx than of the nasal cavity, had not its pedicle been traced into that cavity, and seemingly attached to the upper part of the inferior turbinated bone." He goes on to relate a very interesting case of polypus in the nose of a cow. In his work on the dog, Mr. Youatt speaks in more general terms, though to my mind not so satisfactorily; he makes a curious confusion of matter by saying, "The polypi of the nasal and of the anal cavities, often show themselves under the form of rounded bodies, projecting from the nose or anus, &c."

As a proof of how little this interesting subject has been considered, I transcribe Mr. Percivall's words from his 'Hippopathology.' "Polypus is the name given to an excrescence or tumour growing from a mucous membrane by a narrow part or neck, called its pedicle. It is a very rare occurrence in horses. Never having had a case myself, *I have nothing of my own to offer on the subject.* A very good article appeared in the 'Veterinarian' for 1834, under the signature T., from which I extract the greater part of what follows." This chapter of Mr. Percivall's is based on the histories of five cases; the first, by Gohier, occurred in the left nostril of a horse; it was situated very high up, and was removed in an attempt to draw tight the slip-knot of a ligature round its neck. From Chabert's 'Veterinary Instructions' the second is borrowed, which occurred in a trooper condemned as glandered by a serjeant farrier; a polypus was afterwards discovered, and M. Tears surgeon to the regiment, who "cast the horse, slit up the nostril, when

* Anatomia del Cavallo, Informità e Luoi Rimedii del Signor Carlo Ruini, Senator Bolognese, la Venetia, MDXCIX.

he not only found it completely filled with polypus, and the septum narium bulging into the other division of the cavity; but, from long continued inflammation and pressure, it adhered to the membrane of the nose in so many points, and so extensively, that it was impossible to get round it or move it. He contrived, at length, to pass a crucial ligature around it, and it was torn out by main force. Four considerable portions of the turbinated bones were brought away with it. The hemorrhage was excessive, &c." "Chabert, in a case which he had himself, of very large polypus, was obliged to make a hole in the frontal bone, which he contrived to cover afterwards with a leather shield, attached to the front of both bridle and head collar. For a long while after recovery the horse ran in a cab." Rigot relates the fourth case, in which the tumour was removed by the knife and cautery; and the fifth, if referred to, will be found to have some identity with the case related by Mr. Dickinson.

D'Arboval, who was well versed in the veterinary literature of his country, compiles his article with nearly the same cases as Mr. Percivall. There is an additional one by Icart, from the volume for 1794 of the 'Instructions Vétérinaires; it is extremely interesting, from the size of the tumour and the difficulty of extirpating it; the knife and evulsion were both used. Two others named by Gohier, are the only ones I know of in the dog. One of these animals was destroyed, and on opening his head, several polypi were found near the ethmoid bone, which almost entirely obliterated the nasal cavities. They were of a whitish colour and weighed two ounces, an equal number were existing in the two cavities of the nose. In the other dog, it had seemingly been easy to determine their existence, from the impediment to the respiration, and by probing. They were got rid of by the continued use of powerful doses of arsenic. Notwithstanding our great respect for Gohier's opinion, I should be inclined to doubt his assertions on a point like this. Had the dog polypi? Would arsenic have caused their absorption? The answer to the first query, is doubtful: to the second, I should reply in the negative.

In Hering's 'Repertorium der Thierheilkunde,' for 1844, at page 355, I find cited "three observations of Professor Delwart, of whistling and impediment to breathing, through morbid productions in the nasal cavities.

1st. A two year old colt was so affected in his breathing as to threaten suffocation on the least exertion. The right nasal cavity was found completely plugged by an enormous polypus, which pressed against the septum nasi, and impeded the

passage of air through the *left* nostril also. It was extirpated.

2d. A very large sessile polypus filled the left nasal cavity; its pedicle was cut through and burnt; the animal soon recovered.

3d. Two polipiform masses occupied the nasal cavities of a three year old mare, and sprung from the septum nasi and false nostrils; they were extirpated by the knife.

In Dieterich's 'Handbuch der Veterinair-Chirurgie,' at page 236, there is the following foot-note:

"1st. In the Museum of the Veterinary School of Berlin, exists a horse's head, No. 629, which has a polypus in the right nasal cavity. It quite blocks up the posterior naris, so that the animal could scarcely breath. It is fast, and springs from the mucous membrane of the right nasal cavity, close under the ethmoid, upon the septum nasi.

"2d. In the Museum of the Veterinary School of Hanover:

"(*a*) A horse's larynx, the cricoid cartilage of which is ossified; under the epiglottis is a polypus which was the cause of the horse's death.

"(*b*) The septum nasi of a glandered horse, upon the surface of which are attached two spherical polypi, the one the size of an apple, the smaller one of a walnut."

It is with pleasure I here interrupt the monotonous quotation of published writings to transcribe a case which occurred in Mr. Varnell's practice in America, and which he has very kindly penned for me.

"About the year 1838, while living in the United States, I was requested by a person to examine a chestnut horse, seven years old, which he had bought very cheaply on suspicion that he was glandered. When I saw the horse he was in fair condition, but suffering from a continuous and abundant discharge from the off nostril. The parts having been washed I proceeded to examine them, and discovered an irregular shaped fleshy substance filling up the whole of the nasal passage; it could be reached with the end of the finger, and the slightest manipulation made it bleed. When an appropriate amount of light was made to fall on the tumour it was seen to be extremely nodulated on its inferior surface, and to possess a glutinous appearance. A surgeon who was with me, gave it as his opinion that it was a polypus, and at the same time he stated that in all probability I should find it attached by a peduncle to the membrane which covers the septum nasi. Exploration with a whalebone probe convinced me that such was the case, and that the origin of the peduncle was several inches from the

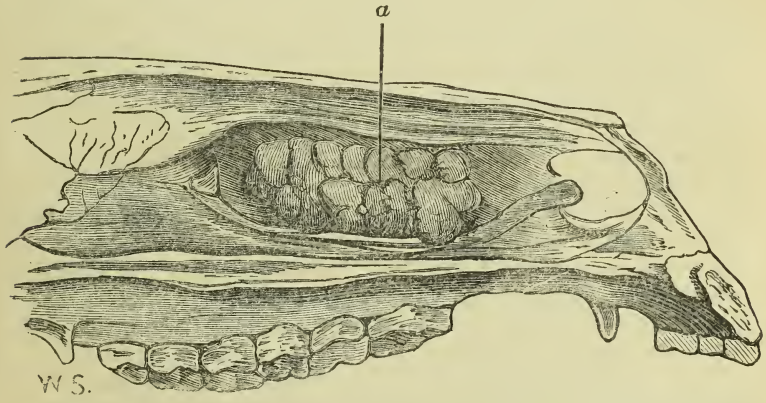
external nares. I lost no time in having an instrument made, the blade of which was curved a little upon its flat surface, both borders being ground to a cutting edge that I might cut either from above downwards, or from below upwards. After securing the horse by a twitch on his ear, the knife was readily passed up the nostril by the side of the septum to the attachment of the polypus, the pedicle was cut through and the tumour dropped out. Its removal, however, was attended by considerable hemorrhage, although not sufficient to create alarm. In about twenty minutes the bleeding ceased. The wound very soon cicatrized, and in a short time the horse was sold as a sound one. I lost sight of him then, but about two years afterwards I heard he had been sold for a very high price to go abroad.

"To illustrate what strange occurrences may happen, I may add, that on my returning to England, and one day while fulfilling the duties of my official appointment in the Royal Veterinary College, I was much surprised at seeing a chestnut horse, with white legs, come into the yard, which I immediately recognized as the same animal from which the polypus was extracted eight years before. He was in perfect health, and had no signs of the recurrence of such growths in the nasal passage." GEORGE W. VARNELL.

R. V. C.; *March* 7, 1855.

Mr. Varnell's case completes the interest attaching to the subjoined sketch of half a horse's head, as preserved in the Museum of the Veterinary School in Stuttgart. The head belonged to a six-year old stallion, which I am told was

FIG. 1.



Note.—By an error of the wood-engraver, the polypus is represented as being in the left instead of the right nasal cavity.

destroyed in 1845 for an incurable nasal gleet, there being some suspicion that he was glandered. On opening the nasal cavities, the polypus here delineated from the dried specimen was found between the turbinated bones, and closing the nasal area. (See fig. 1, *a*.)

Although the tumour had attained a considerable size and firmness, there were no external signs of its existence, and it eluded the most scrutinising examination. The discharge from the nose was always great, and the impediment to the breathing considerable.

The facts afforded by the history which I have mentioned in the foregoing pages, are all I have as yet had an opportunity to bring together, and I venture to think that the collection is not useless. It will now be my endeavour to glean from them, and from other sources, that instruction which is necessary to be possessed on such an important topic.

Of the sixteen cases here recorded, none are devoid of interest. Thus brought together, they clearly prove that nasal polypus, though not a frequent affection, is by no means unlikely to happen, and perhaps several times in the course of a man's practice, and unless he be master of the subject, they may cause him to commit serious errors. They most undeniably demonstrate that there are difficulties in the way of a correct diagnosis, and obstacles in the treatment, which need more than ordinary skill and tact to overcome. Thirteen instances have been witnessed in the horse, one in the cow, and two in the dog. It must not, however, be concluded from this that the horse is most liable to such growths, or that other animals are not as often the subjects of them.

I shall now proceed to systematize our acquired knowledge on the subject, and to this end these sixteen cases will largely contribute, if not form the basis of the following—

General Remarks.—First, as to the word "Polypus." It is a striking example of how happy the ancients often were in their comparisons. What could the nasal tumours be said more to resemble than those fleshy animals that have the power to fix themselves by their bases. There is, however, one self-apparent difference, namely, that the former cannot detach themselves from their situation, but both can produce a watery current around them, the "Sea Anemones" with their retractile tentacula, and the nasal polypi by ciliated epithelium, which is sometimes arranged on their surface in the most interesting manner.

The intricate structure of the polypus in animals has never been studied; but mucous membrane in man, and mucous membrane in the horse, is one and the same thing.

I hesitate not, therefore, to glean information, till something more to the point may be obtained, from authors on the pathological anatomy of man. Professor Paget says that the most frequent forms of polypi of mucous membranes are formed "chiefly of overgrowing fibro-cellular tissue." His remarks on them are as follows:

"Nearly all the softer kinds of polypi, growing from mucous membranes, consist of rudimental or more nearly perfect fibro-cellular tissue, made succulent by serous or synovia-like fluid infiltrated in its meshes: the firmer kinds of polypi are formed of a tougher, more compact, dryer, and more fibrous, or fascia-like tissue. Of the softer kind, the best examples are the common polypi of the nose: mucous, gelatinous, or vesicular polypi, as they have been called. These are pale, pellucid, or opaque-whitish, pendulous out-growths of the mucous membrane of the nose,—more frequently of that which covers the middle of its outer wall.* They are soft and easily crushed, and in their growth they adapt themselves to the shape of the nasal cavity, or, when of large size, project beyond it into the pharynx, or more rarely dilate it.† As they increase in size, so, in general, does the part by which they are continuous with the natural or slightly thickened membrane become comparatively thinner, or flatter; their surfaces may be simple and smooth, or lobed; they often hang in clusters, and thus make up a great mass, though none of them singly may be large. A clear ropy fluid is diffused through the substance of such polypi, and the quantity of this fluid, which is generally enough to make them soft and hyaline, appears to be increased when evaporation is hindered; for in damp weather, the polypi are always larger. Blood-vessels enter their bases, and ramify with wide-extending branches through their substance, accompanying usually the larger and more opaque bundles of fibro-cellular tissue. Cysts full of synovia-like fluid sometimes exist within them.

"To the microscopic examination these polypi present delicate fibro-cellular tissue, in fine undulating and interlacing bundles of filaments. In the interstitial liquid or half liquid substance, nucleated cells appear, imbedded in a clear or densely granular substance; and these cells may be spherical, or elongated, or stellate; imitating all the forms of such as occur in the natural embryonic fibro-cellular tissue, or, the mass may be more completely formed of fibro-cellular tissue, in which, on adding acetic acid, abundant nuclei appear. In general, the firmer the polypus is, the more perfect, as well as the more abundant, is the fibro-cellular tissue. The surface is covered with ciliary epithelium exactly similar to that which invests the healthy nasal mucous membrane, and supplies the most convenient specimens for the examination of active ciliary movement in human tissues.

"The soft polypi that grow, very rarely, in the antrum, and other cavities communicating with the nose, are, I believe, just like these."§

I have a strong impression that the words penned by the famed Lecturer of the Royal College of Surgeons on polypus in man, will ere long be found equally to apply to

* Fig. 1 illustrates this fact in a most satisfactory manner.—J. G.

† Youatt's case of the cow, and the history appended to fig. 1, prove that these assertions of Paget are as applicable to animals as to man.

§ Paget's 'Lectures on Surgical Pathology,' vol. ii, p. 102.

polypus in animals. Repeated observations on other subjects in pathological anatomy have forced on my conviction, that as the same laws govern the animal organization, from the highest vertebrata to the lowest radiata, so, seemingly, there are fixed laws obeyed in the origin and development of most morbid products, whether in the bimanous, quadrupedous, or other orders of the encephalated sub-kingdom.

I shall detain the reader a few minutes longer to make a few remarks on the symptoms of nasal polypus. They have been abundantly described in Mr. Dickinson's and other cases in my historical comment. Mr. Varnell has shown that our eyes should be used as well as our fingers and probes, to ascertain the existence of these out-growths. In man a speculum nasi is used, and though veterinary surgeons cannot so readily employ this useful instrument, nevertheless there is a very ingenious contrivance which I have seen adopted by Professor Hering, in Stuttgart, in all cases of disease of the nose, and especially in glanders. The Professor has the horse's head placed against the sun's rays, while he stands opposite with a reflecting lens in his hand. The light is thus reflected upon the turbinated bones, and a much better view is thereby obtained of the pituitary membrane in upper parts of the nasal cavity.

(*To be continued.*)

FRACTURE OF THE TRACHEA.

By T. Orme Dudfield, M.R.C.V.S., Cheltenham.

The subject of this accident was a seven years old mare in fine condition, a clever, well-bred Irish hunter, the property of Edward Griffiths, Esq., Marle Hill, near this town.

History.—Dec. 15, 1854. Returning after a severe day's work, when within twelve or fifteen miles of home, she came in collision with a cart, which was obscured by the darkness of the evening. Violent as was the shock, she did not fall, but, after a momentary pause, proceeded on at the same pace as before—about six miles per hour—"breathing like a rank roarer." The blow was sustained by the windpipe towards the lower part of the neck, inclining to the right side.

Upon her arrival at home, indications of nervous depression were observed, accompanied by an emphysematous swelling,

extending from the submaxillary space to behind the shoulders. There was a peculiar state of the injured part, to be referred to again hereafter, but no external wound.

Professional aid having been obtained, the case was regarded as of little importance, and treated accordingly; and on the following morning (Dec. 16), a dose of cathartic medicine having been administered, nothing further was thought necessary to be done. The medicine was given about 8 a.m. At 9 o'clock, the mare appeared to Mr. Griffiths as if dying, and my attendance was requested this afternoon. On an examination, I gave as my diagnosis —fracture of the trachea.

Symptoms.—Pulse weak, indistinct, and 50 per minute. Respiration 30, not painful or laboured, but any attempt being made to move induces extreme dyspnœa, which is attended with efforts, frequently ineffectual, however, to cough. The air is arrested in its passage upwards, giving rise to urgent symptoms bordering on suffocation. After shaking the head to and fro for a short time, relief is obtained by the escape of the air with, however, scarcely any audible sound. The mucous membranes are moist and red; a little coagulated blood adheres to the nostrils; the expired air is of the natural temperature; the action of the lungs is not much disturbed; the body, legs, &c. are comfortable. The most serious symptom is great depression. The patient fortunately possesses a good constitution and is in admirable condition; a circumstance, by the bye, which has materially limited the extension of the emphysema.

The skin of the neck is merely scratched, but there is a hemispherical enlargement, four or five inches in diameter, which is rendered tense in expiration, and when the animal coughs it is particularly so. In inspiration it is soft and much diminished in size. It consists of the skin separated from the adjacent tissues, and distended with air, derived directly from the trachea. By pressure, the swelling may be made totally to disappear, but not without creating much annoyance, and some difficulty of breathing. The pain of coughing seems to be due to an arrestation of air in this receptacle, and its alternate ingress and escape gives rise to a peculiar flapping sound. The right sterno-maxillaris muscle is dissevered, so to speak, in the natural direction of its fibres, forming an opening sufficiently large to admit the tips of the fingers.

The precise direction of the fracture is not discoverable. The absence of any sensible depression in the neighbourhood, and the amount of dyspnœa lead to the inference

that it consists in a simple separation, more or less extensive, of two of the rings. The large amount of air extravasated, associated, in all probability, with some bruise of the œsophagus, prevents deglutition. The direction of the blow, and the position of this organ, have, however, preserved it from more serious injury. Any attempt to swallow is attended with pain and cough.

The *treatment* was simple. The mare was clothed warmly; her legs bandaged; an enema administered, and fomentations assiduously applied by means of spongio-piline.

8 p. m.—Pulse a little fuller and more distinct, and the respiration easier. The fomentation has already given relief. It is ordered to be continued all night, and good gruel to be occasionally offered to the animal. The bowels have acted gently. I was earnestly pressed to bleed by an amateur; he being under an impression that internal hemorrhage existed, and by a professional gentleman also, from fear of bronchitis. This I declined to do, having no apprehension of either the one or the other being present, and I very much dreaded the result of so depressing a measure on a system already but too much enervated. Besides which, I conceived it was not likely that there would be any return of the appetite, or rather of the power to deglutate for a few days under the most favorable circumstances. In no case, I was of opinion, could bleeding be more decidedly contra-indicated.

17th. After a quiet night, the animal is better. The depression is considerably abated. Pulse soft, and 60 in the minute. Respiration easy, 16 in the minute, and no longer attended with the flapping noise alluded to in yesterday's report as the piline supports the loosened skin. The cough is louder, and not so troublesome, but the mouth emits a sickly odour. The other symptoms are as yesterday.

The fomentation to be persisted in day and night. Administer also gruel enemata and give

Spt. Nit. Æther., ʒiss;
Liq. Ammon. Acet., ʒiv. Ut haustus.

The mare has managed to swallow a little water, and a portion of finely cut Swede turnip. Scalded oats, gruel, &c., to be occasionally offered to her.

18th. My patient does not appear so well to-day. Pulse 60; respiration 24; legs and ears cold. She is also uneasy, shifts her legs about, champs her jaws about, &c. She is likewise purging, and suffering from abdominal pain. She had given to her, as has been stated, a small dose of aloes on the

morning of the 16th. Ordinarily, I am assured, her bowels do not respond to ʒix of aloes. Give thick gruel, and throw up astringent enemata.

Evening.—The breath is rather unpleasant to the smell. There is a scanty nasal discharge of healthy looking mucus and the cough is more frequent. To allay thoracic irritation, apply Acetum Cantharidis q. s. to the pectoral region.

The patient takes water, and, now and then, a mouthful of hay or a few oats, but is afraid to swallow, even after prolonged mastication.

19th. The animal is better. Pulse soft and distinct, 53 in the minute. Respiration tranquil, 17 in the minute; visible mucous membranes yellowish. Body comfortable. The fæcal matter still soft, but the mouth is not offensive, and the nasal discharge continues, although scanty and healthy. Food and water are sparingly partaken of. Administer gruel enemata.

20th.—Patient still improving. Discontinue the fomentations. Apply Acetum Cantharidis q. s., and a bandage lightly, so as to support the skin.

21st.—Pulse soft, and 60; respiration 16. The skin in front of the trachea is now pervious, and a little white matter escapes, similar in appearance to the nasal discharge.

22d.—The opening in the skin is greatly extended, and presents a singular character. It is circular, and nearly two inches in diameter. There is a profuse discharge from it, of a muco-purulent fluid mingled with air, which escapes abundantly in a forced expiration, and in coughing particularly, when the whole volume of air, the discharge, &c., pass through the orifice. Two of the cartilages of the trachea can now be ascertained to be severed from each other, and from half to three fourths of their circumference. The organ is here buried about an inch by muscular tissue, and the wound of this latter mainly consists in a separation of the fasciculi. It is a vertical slit, and does not exactly correspond with the opening into the windpipe.

The edges of the cartilage appear to be uninjured, and the divided rings, generally, are in apposition, but when in coughing, the head is depressed, they are apart, and the two openings accurately coincide. The muscle is covered with cherry-red granulations, and exercises a beneficial amount of pressure on the windpipe.

Remove the hair from around the wound; cleanse and dress it with compound tincture of myrrh, and protect it with a piece of gauze lightly fastened around the neck.

23d. The pulse is 56, respiration 18. Breath and mouth

sweet; the nasal discharge has ceased; the system, generally, is relieved, and appetite good, but the emphysema has increased, and the cough is frequent.

24th.—The mare lay down, for the first time since her accident, to-day, but only for a short time. The discharge from the wound is very profuse. The appetite being good, a generous dietary is enjoined, in preference to the employment of any medicinal agents, to sustain the system. Cough still very troublesome. Repeat the blister to the chest. The wound to be dressed as yesterday, and a pledget of lint placed upon it. The muscular tissue granulates very freely, and threatens to quickly close the opening. For the present, however, the cough and the discharge will prohibit this; a closure could be advantageous only as occurring firmly from the bottom of the wound. At too early a period there would be danger of a purulent collection between the trachea and the muscles, which would speedily undo all again.

27th.—The general system is now restored to health. Pulse and respiration natural; appetite good; cough infrequent. The discharge, which has diminished daily, escapes chiefly by the nostrils. There is now a simple slit extending to the trachea, through which a little air occasionally passes. The orifice in the windpipe is much circumscribed. The patient to be fed by hand to restrict the movement of the neck, &c.

Jan. 2, 1855.—The desideratum now is to limit the motion of the neck so as to keep the severed rings of the trachea in as true and constant apposition as possible. To effect this, two side-sticks are employed, the local irritation which has hitherto rendered such mechanical aids inadmissible having now subsided. What little discharge remains is chiefly nasal; cough sonorous.

4th.—The cartilages appear to have somewhat serrated edges, as if ulceration or absorption were in progress; but it is attended with no unfavorable symptom. To effect the adjustment of the neck, a martingale is to be worn.

6th.—The skin has nearly closed, and, by the obstruction thus offered to the air, &c., it creates uneasiness; I therefore enlarged the opening with a bistoury.

Feb. 2.—It is to day seven weeks since the accident occurred, and the mare is convalescent. In the interval since the last report, it again became necessary to enlarge the skin wound. Besides this, simple lint and tincture of myrrh dressings were daily applied to preserve the opening in a pervious condition. Latterly there was a tendency to a

collection of pus from its gravitation between the skin and the muscles, for the depth of several inches. After removing it by pressure, &c., a weak solution of Zinci Sulph. was injected, a mild stimulant applied externally, and the parts retained in apposition by a bandage, with the happiest results. The emphysema has passed away, and the general state of the skin is normal. As to the trachea itself, the opening gradually became more and more limited, and the escape of air and matter less in proportion. The muscles have now acquired their natural tone, and press firmly upon the windpipe. The side-sticks were recently removed, and the wound having become closed, a stimulant was used to disperse a slight and general swelling around the lower part of the neck, the only present indication of the original injury.

ON THE COAGULATION OF FIBRINE IN EFFUSED BLOOD.

By A. J. Owles, V.S., Carabiniers.

Having a somewhat singular case of sanguineous effusion under my care, I send you a short account of it, as I think it interesting, not so much, however, in itself as a case, as in showing the power of the fibrine to coagulate in the living body, free from the other components of blood, when the liquor sanguinis is extravasated. Although there is nothing new in this fact, still the changes which take place in inflammation are so important, as well as the great tendency to asthenic inflammation which exists among our patients, that I trust you will think the case of sufficient importance to be an excuse for my troubling you with the particulars

It is sometimes difficult to reconcile the morbid appearances after death with the symptoms during life, so great is the change from the healthy state of the part affected; or the symptoms, perhaps, are not calculated to lead one to suspect these great alterations till it is too late, and hence it is by studying the changes themselves, as also the way they are produced, that we can best form a correct opinion of the nature of a disease.

Effusion of the liquor sanguinis, and coagulation of its fibrine, appear to me also to be about the most fatal and insidious result that the kind of inflammation alluded to

can be accompanied with when the thoracic viscera are the organs affected.

The case is as follows: A bay mare, twelve years old, slipped and fell on her near side, bruising the haunch over the abductor muscles. She was not lamed by the accident, but a spot somewhat larger than a man's hand was observed to be wet from continuous perspiration for two days subsequently to the occurrence of the injury, after which the part became dry and commenced to swell. The animal being very vicious, fomentations could not be employed. The swelling gradually increased, and in four days was of great size, but quite soft to the feel. I made a small puncture, to ascertain the nature of the contents of the swelling, and afterwards dilated the opening, when about three pints of serum escaped, and with it a large clot of coagulated fibrin, which had been floating in the serous fluid. The coagulum was free from coloring matter, and weighed about four ounces. I ordered fomentations to be applied, and which was done as well as the vicious nature of the mare would allow of. Healthy suppuration has now commenced, and by keeping the parts clean a speedy and favorable termination may be early expected.

Hounslow Barracks; *March* 10, 1855.

OPERATION FOR STRANGULATED VENTRAL HERNIA IN A HORSE.

By John Storry, Pickering.

As a subscriber to the *Veterinarian* from its commencement, and an occasional contributor to its pages, I send you the following case of successful operation for ventral hernia, as I do not remember a similar one being published in your Journal.* The subject was a valuable horse, aged five years, the property of Mr. William Frank, of this place. About eighteen months before the time I was called to attend him, the animal, while at pasture, was gored by a cow, the result of which was a laceration of the abdominal muscles on the left side, near to the flank, through which the intestines protruded into a sac formed by the skin, constituting

* The pages of the '*Veterinarian*' are rich in cases of hernia of every variety. In the twelfth volume, in particular, Mr. Storry will find full details of successful operations for very formidable cases of ventral and other kinds of hernia.

ventral hernia. The horse soon recovered from the immediate effects of the injury, but the hernia remained; the opening in the abdominal muscles being nearly three inches in diameter, and the size of the tumour about equal to the double fist. No great inconvenience seemed to have marked the existence of the rupture till May, 1853, when he was attacked with symptoms analogous to those seen in colic. My attendance being requested, I at first thought that his illness was due to simple gastric irritation, and, as the bowels were constipated, I administered oleaginous aperients and other similar medicaments, but without any relief being obtained. The symptoms of the animal becoming more urgent, I carefully examined the hernial tumour, and satisfied myself that strangulation of the intestines had taken place; the increased size of the enlargement, the impossibility, by ordinary manipulations, of reducing the hernia, and the pain attending the application of the least pressure to the part, all showed the precise nature of the case. Under such circumstances no hope of the animal's recovery could be entertained unless recourse was at once had to a surgical operation. This being decided upon, I had the patient secured, and placed in a position favorable to my proceedings. I first made a small incision very carefully through the skin, to avoid any injury to the bowel: this was then dilated sufficient to allow the introduction of a bistoury, by side of the intestine, through the aperture of the muscles, into the abdomen. Directing the cutting edge of the instrument outwards, I now enlarged the opening in the muscles, and then withdrawing the knife and employing the taxis, I was enabled with but little trouble to return the intestine into its proper cavity. This done, the edges of the laceration were brought into apposition by sutures, which embraced the entire substance of the abdominal muscles. Although, from the length of time which had elapsed since the accident, the border of the opening in the muscles was somewhat thickened and indurated, I trusted to the restorative power of nature to close it after the ordinary manner, rather than prolong the operation by making a fresh surface for the granulations to spring from. Nor had I any reason to repent of this decision, as the wound readily healed. My next step was to bring together the edges of incision made in the skin, for which purpose sutures were likewise employed. The operation being thus far completed, the animal was disengaged from his fetters.

In the course of a short time it was evident that considerable relief was afforded. The severity of the symptoms being abated, a few hours sufficed for the removal of all those

which created any anxiety for the patient's safety. To give additional support to the part operated upon, I had a pad placed upon it, which was kept in its proper situation by means of a broad girth. On the succeeding day a good deal of swelling existed around the wound, when fomentations were had recourse to, and care taken to lessen the pressure of the band and pad. The general condition of the animal, as well as the state of the wound, required my daily attendance for about a week, after which time I only occasionally called to see how he was going on. The granulations sprouted freely from the part, so much so that I had to use nitrate of silver, and likewise diluted mineral acid to effect their reduction. After this cicatrization took place, completing the healing process. At the end of six weeks the cicatrix was scarcely discernible; but during the whole of this time I deemed it advisable that the compress should be worn. The animal was well enough to resume gentle work even before the bandage was removed, and in about three months from the date of the operation, he was sold by Mr. Frank, who informed me, within the last few days, that he had lately seen his present owner, who told him that the horse was in perfect health and good condition.

Facts and Observations.

It has frequently been the case that "facts" worthy of record and remembrance have come to our knowledge, the nature of which have precluded their being communicated to us in any other than a brief form. "Observations," too, from time to time have been made to us, full of interest, connected with the action of medicines on our domesticated animals, or of some peculiarities that have presented themselves in a disease, the details of which would occupy but a small space. Moreover, we doubt not but that the same things are constantly occurring to many, if not most, of our correspondents. We have, therefore, thought that if a division were made in our journal for their insertion much valuable information in the aggregate would be obtained: for although in themselves they might be "mere scraps," were they not thus recorded, it is more than probable they might be altogether lost. In a future number, if needs be, we may be induced more fully to explain our views, and to expatiate on the advantages we hope to derive from this section. For the

present it will suffice if we at once give place to what we have become acquainted with during the past month, adding a few comments thereunto, by way of elucidation or extension.

POISONING BY NITRATE OF POTASH.

Mr. J. C. Truckle has informed us of two cows out of three having died within three hours, and that, apparently, without a struggle, after taking a third part of a pound of nitrate of potash, and half a pound of sulphur, mixed together. The *post mortem* examination showed that the third and fourth stomachs were inflamed, more especially the latter.

The bovine tribe would appear to be easily poisoned by this salt. We were consulted some years since respecting the causes of the deaths of several cows, and on inquiry ascertained that the owner of the animals had been giving to each half a pound dose of American saltpetre (nitrate of soda) which he had bought as a cheap purgative! We also remember three cows and two heifers, belonging to a gentleman in Suffolk, being poisoned by taking three-quarters of a pound of nitre each. All the animals died within twelve hours. The agent had been sold by a *grocer* in mistake for sulphate of magnesia.

FRACTURE OF THE SUPERIOR MAXILLARY BONE OF A DOG.

Mr. Dods, of Kirkcaldy, writes us that he was lately consulted about a bull dog which had sustained a fracture of the superior maxilla, extending quite across the jaw, about an inch and half behind the incisor teeth. He had first a firm linen bandage applied around the jaw, in which holes were made to receive the tushes, and prevent the displacement of the compress. Over this, and embracing both jaws, another bandage was placed so as to keep the mouth closed. The animal took freely of meat broths, and in about six weeks not only had union taken place, but so perfect was it that he was again employed by his owner, a butcher, to assist in getting bullocks into his slaughter-house. Mr. Dods also says that he has met with analogous fractures in colts, which, by adopting a similar plan of bandaging, have gone on to his perfect satisfaction.

INOCULATION FOR PLEURO-PNEUMONIA.

This question has again been brought before the Belgian Chamber of Representatives* by M. De Renesse, who spoke in favour of the system, and complained of the apathy of the government and the conduct of the special commission, instituted to inquire into the merits of inoculation, towards Dr. Willems its inventor. M. De Renesse observed that, since the promise of the Minister of the Interior to inquire into the subject, when it was last brought before the chamber, nothing had been done; and he would, therefore, urge on the government the appointment of a new commission composed of men of experience and impartiality, and who had not been mixed up with the discussions upon this question.

M. Vander Donckt defended the government and the commission from the accusations of M. De Renesse. He remarked that M. Willems had shown himself very eager to reap the advantages of his invention, but that up to the present time nothing had transpired to prove that the system of inoculating cattle to prevent exudative pleuro-pneumonia possessed any value. The subject had just been again discussed in the Academy of Medicine, and the conclusion arrived at was that further experiments were needed to settle, if possible, the differences which existed among men of science, medical and veterinary, both in this and foreign countries, as to its utility and practicability.

The Minister of the Interior denied that the government or the commission were hostile to the system. The government had done all it could do in the matter. It had appointed a commission which had reported most fully its investigations into the subject. Further time was needed to settle many of the disputed points, and as less of the disease had of late existed, obstacles to the carrying out of fresh experiments had beset the labours of the commission. The government had, however, just received another report from the commission, and as this was not yet in print, he, the Minister of the Interior, would read to the chamber the conclusions which were arrived at; they were—

First. That if inoculation did appear in certain cases to have produced immunity, in others it had been altogether incapable of preventing the development of exudative pleuro-pneumonia. That these contrasts, and they were not a few, had been observed as much in foreign countries as in Belgium; and that there are not sufficient facts at present to convince

* For previous report, see p. 93, et seq.

the commission that inoculation gives security to cattle against the disease, either in an absolute, or even temporary manner.

Second. That the fluid extracted from the diseased lung when inoculated into an animal is not distinguished in its consecutive effects by any specific characters from those which are produced by other organic matters placed in the same condition.

The Minister of the Interior concluded by stating that the report would be immediately published, and that the government would, if it were necessary, do its best to stimulate the zeal of the commission in making further experiments upon bovine animals.

Extracts from British and Foreign Journals.

ON THE VACUITY OF THE ARTERIES AFTER DEATH.

A paper on the above subject was introduced by Dr. Thudichum at a meeting of the *Physiological Society*, London, the report of which we extract from "*The Lancet.*"

The reader submitted the part to analysis, and came to the result that the arteries contain air and vapour, sometimes blood, like the veins, and chords of blood. Air and vapour are found in the large majority of cases, and the vacuity of blood is the rule. This vacuity is said to be caused by the contraction of the arterial system. The different modes of contraction supposed to be necessary to effect that result, were then adverted to, and compared with the observations of the contractibility of the arteries made on the living, dying, and dead subject. No experiment showed those contractions supposed to be indispensable for the object of emptying the arteries. Besides this want of every direct proof, many anatomical and pathological facts are against that theory. The vertebral and carotid arteries were quoted as examples, which, by their fastening to bony canals, could not contract. Rigid, ossified, atheromatous arteries, and large aneurisms, none of which can ever contract, are found empty, and from this reason the author concluded that there must be some other cause which empties the arteries after the cessation of the heart's action. This cause is no doubt the sum of the diffused forces at the capillary system. Some facts derived from comparative and

human physiology and pathology were advanced in support of this view. The capillary circulation in plants, the circulation in holothuria and mollusca are mostly capillary. The growth of the uterus during pregnancy shows a vascular activity independent of the heart. It was shown that the circulation of blood through the liver could not possibly be effected by the heart's action alone, the blood in the portal vein having lost too much of its arterial pressure. The transmission of bullock's blood through the vessels of newly killed animals was declared to be effected by the aid of the capillary force. As a further proof of the existence of this force, the circulation in the acephalous or acardiac fœtus was put forth, and a short review of some of the theories of this remarkable phenomenon given. In asphyxia and suffocation, the heart is unable to drive the blood through the lungs; in other cases, as after death from yellow fever, the capillaries transmit blood to the veins without the heart. Cases of spontaneous gangrene, where the capillaries were found pervious, are recorded, yet the heart could not effect nutrition. All these facts tend to show that there *is* a force which is able to empty the arterial vessels, and that this force very likely is the second promoter of the course of the blood after the heart, and that the heart alone could not keep a circulation sufficient to effect nutrition, without these diffused forces of the capillary system.

Dr. Crisp would confine his remarks chiefly to the subject of the portal circulation, which alone would have occupied sufficient time for the paper of the evening. The author assumed that the blood in the portal system must be circulated by capillary contraction, because the *vis à tergo* of the heart and elasticity of the arteries could not materially influence the current of blood in these veins; but he, (Dr. Crisp) was surprised that Dr. Thudichum had altogether overlooked the suction power of the right auricle of the heart, which was supplied with blood at each diastole, and that the action of this auricle continued in some animals for some time after death. The author had asserted that the portal system of veins was not furnished with valves; and as he had appealed several times to Dr. Carpenter as an authority, he (Dr. Crisp) begged to direct the attention of Dr. Thudichum to a recent review in the *British and Foreign Journal*, (Jan. 1855,) which bore the signature of Dr. Carpenter, in which he built up a theory respecting the spleen on the assumption that its vein was not supplied with valves, although the very animal (the horse) upon the blood of which the experiments were made had often several pairs of

valves in the splenic vein. He (Dr. Crisp) said that this was not a matter of opinion, as he had shown valves in the splenic vein of many animals at that Society, and he had found, moreover, that other veins connected with the portal system, in several of the lower animals, were abundantly supplied with them. He had seen no evidence, under the microscope nor elsewhere, of the active local contraction of an artery, and the fact alluded to by Dr. Thudichum respecting the circulation of the blood in bony arteries went far to disprove, he thought, the assertion respecting their muscular power. He (Dr. Crisp) had exhibited at that Society the bony arteries of an old lady eighty-eight years of age; yet up to within a short period of her death all the functions of the body were well performed.

Dr. Richardson reasserted the correctness of Harvey's theory as to the emptiness of the arteries. He repeated many of the arguments used by him at the first meeting of this society in the present session, but added several more, tending to confirm more fully the views he supported. Thus the arteries were invariably as full as the veins in the still-born fœtus, and were, as a general rule, left full in cases of immediate death, as from lightning, concussion, and rapidly acting poisons. The question of the contractility of the arteries was only incidental to the general point which he urged, for the Harveian theory extended as much to the left side of the heart itself as to the arteries. He did not deny the capillary force, but gave several experiments which supported it.

Dr. Snow supported Dr. Thudichum in all his arguments. He did not believe that the right side of the heart exerted a suction power sufficient to attract the flow of blood towards it from the veins. In an experiment with chloroform, performed lately on a guinea-pig, he (Dr. Snow) had observed the heart beating for more than a minute after the breathing had ceased. On opening the body of this animal, he found a small quantity of blood in the aorta—a circumstance which was rather opposed to the Harveian deduction.

Dr. Chowne urged that the mere ocular observation of an animal would not, while the attention was also being directed to the beat of the heart, determine whether some slight respiratory movement was going on. Dr. Richardson's statement, also, that an empty state of the arteries of the newly-born child might be taken as one sign of the respiration having been established, must be received with consideration and due care. Dr. Chowne then attempted an explanation of his own as to the emptiness of the arteries. When the left side of

the heart had emptied itself of blood, it did not remain vacuous, but was filled with vapour, from the evaporation of the portion of blood with which the inner surface of the heart was left moistened. The vapour thus produced was sufficient by its expansion to act on the column of blood in the arteries, and to drive it on into the capillary and venous systems.

Dr. THUDICHUM having briefly replied,

The PRESIDENT expressed the great gratification he had felt in presiding at these physiological meetings. The subjects brought forward were always most interesting, and were ably discussed. The paper of Dr. Thudichum was peculiarly valuable, as showing not only original thought, but a vast amount of learned research.

ON THE PHYSIOLOGICAL ACTION OF VERATRINE ON ANIMALS.

By MM. E. FAIVRE and C. LEBLANC.

THE authors give the following conclusions as the deductions to be drawn from the experiments detailed in their Memoir.

According to the experiments which we have made, we are led to the opinion that veratrine exerts three distinct actions upon the animal economy. These actions depend upon the dose administered. The first is a very marked action upon the digestive tube; the second, on the organs of circulation and respiration; and the third, on the nervous system and the muscles of animal life.

First Period.—The first action of veratrine is upon the digestive tube, and causes an augmentation of sensibility, contractibility, and of the secretions. The increased sensibility is betrayed by colic, whose violence appears to vary according to the dose of veratrine used. When enduring the pain produced by this medicament, horses stamp violently and agitate themselves. Dogs become likewise very much excited. To the pain are united phenomena of muscular contraction; the intestines are contracted, the peristaltic motions perceptibly accelerated. M. Magendie has remarked these phenomena in the dog; we have ourselves frequently proved it in frogs.

The secretion of the intestinal follicles and salivary glands is augmented by the action of veratrine. In our experiments

on horses and dogs, we were always struck by the rapidity with which the saliva flowed after the administration of veratrine, and by the persistance of this flow. Sometimes the saliva is viscid and thready, but it more frequently forms a whitish foam, similar to that shown in animals when a prey to convulsions.

It might be supposed that the production of saliva is due to the irritation which veratrine produces directly in the cavity of the mouth on the excretory ducts of the glands. It would also be natural to suppose that the purgative effect is due to a local action on the intestine. Experiment shows that this is not the case. Indeed, whether the medicament be injected into the veins, or deposited in the subcutaneous cellular tissue, the excitement of the digestive tube, the hypersecretion of the intestinal follicles and salivary glands, is equally evident.

In the case of direct contact between the poisonous agent and intestinal mucous membrane, perceptible alterations are manifested. It then produces on the mucous membrane of the stomach and small intestine red patches several centimetres in diameter, distinct in their shape and quite separate one from another.

Second Period.—Sinking, prostration of strength, and slackening of the circulation, form the clearly-defined characters of the second period. This state, which was not mentioned in M. Magendie's first experiments, has been the one which has chiefly occupied practical men; many even attributing to veratrine only the power of slackening the circulation. Whenever we have had it in our power to ascertain the state of the pulse before and after the administration of veratrine, we have always observed the diminution of the pulse, and very often great irregularity. During this period, dogs become weak; they find great difficulty in supporting themselves upon their feet, and most frequently lie down. Horses are weakened, and their whole appearance exhibits great depression. In this state sensibility appears to be diminished.

Third Period.—When the dose of veratrine has been more considerable, tetanus soon manifests itself. The anterior and posterior members are extended and stiff, the muscles of the thorax and abdomen contract, and respiration becomes laboured and painful, and asphyxia becomes gradually perceptible.

At first, the attacks of tetanus are short and separated by considerable intervals; but the action of the veratrine becoming more and more manifest, causes longer and more

frequent attacks; the animal frequently sinks in half an hour or an hour; but, if life is strongest, the attacks progressively diminish. An augmentation of the sensibility always accompanies the tetanic phenomena. If the animal is touched, however slightly, new muscular contractions are produced. In the autopsy of the animals which have sunk from tetanus manifest traces of asphyxia have always been seen.

Veratrine does not always act in the order which we have described. The periods do not always succeed each other exactly as our description indicates. Thus the action upon the digestive tube may be more or less marked, and may continue either throughout the period of depression or of excitation, in the same way the slackening of the circulation and the tetanic phenomena may have variable duration and intensity. If the doses of the medicament are poisonous, tetanus will be at once produced without any manifestation of the action on the intestinal tube and the circulation. In this case death is rapid, and the asphyxia which causes it appears immediately.

The action of veratrine being known, the next question will be—What place is to be assigned to this agent in therapeutic classification?

We think that it should be included among the excitants of the muscular system, nux vomica, strychnine, &c., although it clearly differs from them in many points. Like these medicaments, it produces tetanus; like them, it augments the sensibility; like them, finally, it produces asphyxia and death. But the exciting agents seldom have an action on the nervous system of animal life; they do not slacken the circulation nor irritate the intestine. Veratrine, on the contrary, which makes it very valuable in therapeutics, acts at once on the circulation, which it slackens, and on the intestinal tube, which it causes to contract.

The knowledge of the physiological action of veratrine leads us to the indication of the diseases in which this medicament may rationally be used. It is indicated as a powerful purgative in the case of obstruction of the large intestine by fecal matters; its powerful action on the nasal mucous membrane makes it an excitant and a sternutatory. Its mode of action on the nervous system of animal life justifies its employment in neuralgia, in some kinds of paralysis, and in chorea, hysteria, and tetanus. Doubtless its specific action on acute articular rheumatism is explained both by its revulsive action on the intestine, and by the excitation which it produces.

Veratrine might likewise be very usefully included in

veterinary medicine for horses in abdominal vertigo, and various neuroses. For dogs it would be useful in acute articular rheumatism, chorea, tetanus, neuralgia; the obstinate constipation, and nasal catarrh of young dogs. Veratrine might be used as a sternutatory in the vinegar administered to cattle suffering from pneumonia and pleuro-pneumonia.

So energetic and dangerous an agent as veratrine should never be used without precaution. It is highly requisite that the exact medical and poisonous dose should be ascertained and described both for men and animals. In this respect our investigations have led us to the following results.

For dogs the poisonous dose is from 15 to 20 centigrammes, according to size, and the medicinal dose is from 5 to 8 centigrammes; for horses the poisonous dose is about 3 grammes, and the medicinal dose from 50 centigrammes to 1 gramme. According to ordinary proportions, the poisonous dose for man would be from 75 to 80 centigrammes, and the medicinal dose might be from 20 to 25 centigrammes.

We suppose in all these cases that veratrine has been administered by the mouth. By causing this agent to penetrate by the rectum, injecting it into the veins, and depositing it under the skin, we have obtained the following results:

A. Injection into the Intestine through the Rectum.—In dogs, in the dose of 15 centigrammes, very violent purging; in horses, 1 gramme produces an effect of the same nature, but less rapid and not so violent.

B. Injection into the Veins.—In dogs, 6 centigrammes produce colic and slight purging. In horses, 50 centigrammes only produced slight colic. A trifling diminution of the pulse in both cases.

C. Veratrine deposited under the skin.—In dogs, 25 centigrammes produced tetanus and death. In horses, a marked action on the intestine, and sensible diminution of the pulse. The quantity introduced was 1 gramme.

For animals the medicament is preferable dissolved in ether, or in the form of an electuary.—*Comptes rendus*, No. 52, Dec., 1854.—*The Chemist.*

THE VETERINARIAN, APRIL 1, 1855.

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

We cannot allow the appended proposition of Mr. Warne Raddall to pass without a word or two of comment and commendation. Firstly, we give to it our hearty approval, and secondly, state that, if in any way we can become instrumental in helping him to carry it out we shall only be too happy.

Those will be halcyon days, indeed, for the profession, when its members are thus found cordially co-operating to bring about its advancement. Then will they be able to present such a phalanx that all the efforts of their enemies will prove futile. They will have become strong by union, and thus realize their common motto, "Vis unita fortior."

Nor do we see anything that is insurmountable in the proposition. A determination to act is all that is requisite. Our mind's eye glancing over localities with which we are acquainted, can readily conceive how many members of the profession may be congregated together in a place previously fixed upon, all actuated by one motive, and that among the best by which they can be influenced. For a time, at least, —would it were for ever—"bygones" would be "bygones," and meeting together in the country town, or some other town of note; and perhaps, by the invitation of some experienced and respected member of the profession (for who would not feel proud to bring about such a union under his own roof?): one member brings with him a morbid specimen possessing more than ordinary interest; another, the history of a case that has occurred in his practice; and a third, some invention or discovery which he has made connected with Veterinary Science; and thus subject-matter, more than enough, would be furnished. A free discussion following—subject, of course, to those rules which exist

in all well ordered associations—and notes of the same being taken for publication, to what an amount of highly useful matter may not be thus obtained; by the dissemination of which the whole body of the profession would become immensely benefited.

What, too, at the present day materially favours the accomplishing of this desirable object more than in days gone by, is the facility by which different and distant places may be reached. A few hours, at most, of pleasant travelling by railroad, would enable those who are desirous to arrive at their country town, to pass two or three hours in the above useful occupation, and then return home. Nor is it needful that these unions should take place very frequently. Perhaps, indeed, it is rather desirable that they should not. We are ignorant as to the views Mr. Raddall may entertain on this head, but we venture to say that once in three months would be often enough, since by their too frequent repetition, the interest connected with them would be lost. Moreover, as all in the country may not be able to attend at one time, it would give those necessarily absent at one meeting an opportunity of being present at another, and thus would all be, in the end, advantaged.

Having thus expressed our opinions on this subject, and by so doing, perhaps, extended those of Mr. Raddall, it only remains for us to insert his communication, as we have received it, sincerely hoping that his expectation will be more than realized; and as he resides both in a delightful county and as important a town, we urge on him to take the initiative in this his own suggestion; and right glad shall we be to record the result of the first meeting of the first Provincial Association of Veterinary Surgeons.

Dear Sirs,—As we are now entering on a new year, and the management of the only periodical our profession can boast of, changing hands, I will send you a sketch of an idea which has long suggested itself to my mind as involving a most important matter; but one hitherto, I believe, entirely neglected by every member of the College of Veterinary

Surgeons, at least in the provinces, namely, that of the formation of local Veterinary Medical Associations. These might be established in every county in the United Kingdom, or even in still more circumscribed localities; for instance, in the more densely populated districts, or in some of the larger country towns. The especial object should be, to discuss any new form of enzootic, epizootic, or other disease which may anywhere present itself; and any new system of medical or surgical treatment, which may be deemed most advisable to adopt, as a means of subduing, checking, or preventing the appearance of such innovators on the health of the horse, ox, sheep, dog, &c., as well as to comment on the means likely to improve the breed, size, form, or any other useful property of the whole of our domesticated animals: for now, in almost every place of note in the United Kingdom, we see agricultural meetings held, their promulgating among members generally useful information; also local Medical Societies are formed, and held in almost every county and borough town throughout the country, together with Law Societies, and a variety of others too numerous for me to mention. Then, I would venture to ask, are not these facts alone sufficient to convince the members of our profession, that in this respect we are behindhand? and shall we not in this, the nineteenth century, by its still further neglect, be looked on by the Public as apathetic to our own interests as well as to the advancement of the common weal? What I would further suggest, Messrs. Editors, is, that in the provinces, for I wish to be understood that my remarks are altogether applied to the country districts, as in London every member of the R. C. V. S. has the privilege of attending the lectures, meetings, &c., at the fountain head; every such society shall be composed of a President, a Vice-President, and a Secretary, the oldest members of the profession being entitled to these distinctive honours, provided all other circumstances accord, such as health, &c. And at the commencement these senior Veterinary Surgeons do take upon themselves the trouble of writing to every member of the profession in his own locality to convene a

meeting of such members, at which all preliminary measures would of course be decided. And who among us, I would ask, is there, but has something yet to learn, and which may be learned even of one who might be much his junior in years and experience, not to say his senior? And having said thus much, I will now conclude by pledging myself, not to be found slack in endeavouring to bring about this desirable measure, and by assuring you that if my imperfect suggestions should anywhere be put into practice, and produce the benefits I have ventured to predict, that I shall feel myself more than amply rewarded for my labour. If you think the above worthy of notice, pray give it a place in the next number.

I am, gentlemen, yours very obliged,

W. Raddall, M.R.C.V.S.

Plymouth; *Jan.* 12, 1855.

IMPROVED FITTINGS FOR STABLES.

Our readers, we feel assured, will not be displeased with us for directing their attention to "fittings for stables;" which, although not strictly medical, has, nevertheless, much to do with the health of the horse, and equine economy. Perhaps to the principles of Hygiene has not by us, as a profession, been given that consideration which their importance merits. It is, nevertheless, always a difficult, and often an invidious task, to pronounce an opinion upon a new invention, although it may have for its object the promotion of these principles. The very fact of its being new will generally make that opinion hazardous, as well as that by it our readers will naturally be more or less guided. Indeed articles on the subject of mechanical inventions can scarcely be considered within the bounds of our legitimate sphere. But we feel that we should fail in our duty to our readers, especially to such of them as may wish to remodel their old, or to build new stables, if in a journal which professes to put forth in various forms the treatment of animals, we did not draw their attention to an entirely new and most ingenious plan of

stable fittings, invented by Mr. Bruce, and brought out by Messrs Ransome and Sims, of Ipswich, consisting of a self-acting hay-rack, and self-supplying manger, a head-collar and tying apparatus, and an improved feeding sieve.

In the hay-rack there are several advantages, not the least of which is, that the mere act of putting the hay in loosely and in small quantities, will in a great measure insure the separation of the dust from it, which in the over-head racks has so often proved injurious to the horse.

Again, by a very simple contrivance, which keeps the hay always pressed to one point, and that the most natural and convenient for the horse to reach, the very great waste which results from the use of the level or the ground racks, is entirely prevented. By it also the amount of hay given to a horse can be regulated to a pound, an index being placed in the front for that purpose. When we say that this form of rack will obviate all or most of the deficiencies of those now used, we do not think we say too much in its favour.

A single glance at the head collar as attached to the tying pillar, will suffice to show how well adapted it is for the intended purpose; namely, that of preventing a horse being cast in his stall. On this point we need say no more.

There are at present three modes of giving a horse his oats, the first of which is whole, or in their natural state; the second, by mixing them with chaff; and the third by bruising them, or passing them through a mill till they are completely crushed. Now of these three modes, the first, from its being the natural one, is considered by many persons the best; the others being thought to be merely artificial means of aiding nature, and which they say must, as a general rule, be deprecated, unless some functional derangement exists. The great object to be gained from feeding with whole oats, is to make the horse masticate the grain and insalivate it, which leads to easy and quick digestion, as the act of mastication necessarily prevents the horse "bolting" the corn. The principal, perhaps, if not the sole cause of this "bolting," is to be referred to the horse having too easy an access to a large quantity of oats at one time, by which means a greedy feeder will so

fill his mouth as to make it impossible for him to masticate properly. The animal will, therefore, either drop some of the corn from his mouth, or he will bolt it. In many instances cut hay will prevent this by obliging a horse to chew his food; but even this we have known to fail with some horses, who acquire a habit of selecting the oats and leaving the chaff at the bottom of the manger.

Unquestionably it is indispensable with the horse, as with other animals, that his food should have a sufficient quantity of saliva mixed with it during the process of mastication to enable perfect digestion to take place. If this can be promoted by mechanical contrivances, and which, we think, by the operation of this manger, which only allows of a very small quantity of oats to be before the horse at a time, it can, a desideratum is obtained. Cut hay is often insufficient, as we have said, for this purpose, and so also are bruised oats.

We confess that this subject of feeding has always been a difficult one to manage practically, but we do think that the so-called "self-supplying manger" at least prevents, by a simple contrivance, many of the evils attendant on the ordinary plan. It restrains a ravenous, while it provokes the appetite of a delicate feeder, and is at the same time a certain preventive of waste. In fact, it is surprising that nothing of the kind has ever been introduced to public notice before, but "better late than never;" and now that the proprietors of horses have the opportunity presented to them, we hope they will not fail to make use of it.

The feeding sieve, we presume, is more intended to serve the manger, than to present any great novelty of design, which, however, it is not altogether deficient in.

Space fails us to describe more minutely, even the leading features of this invention. We, therefore, in conclusion, beg to direct our readers' attention to our advertising columns, where they will find a sketch of these fittings, with an explanation attached, and we doubt not that any further description they may require will be cheerfully given by Messrs. Ransome and Sims.

PRESENTATION OF A TESTIMONIAL TO ASSISTANT-PROFESSOR VARNELL.

The students of the Royal Veterinary College having resolved to present to Mr. Varnell a testimonial expressive of their appreciation of his labours in their behalf, selected from among themselves the following gentlemen to act as a committee of management:

Mr. Christopher Sanderson, *Chairman.*

William Ryall.	Henry Dawson.
Thomas Allen Clarke.	George Longman.
Thomas Smith.	William Furnivall.
Barnes Wimbush, *Treasurer.*	John Tatam, *Secretary.*

All preliminary matters being arranged, the presentation took place on the evening of the 28th of February, in the Lecture Theatre of the College, before the whole class, the Professors being also present by invitation. The testimonial consisted of an elegant silver tea and coffee service. Upon the teapot was engraved the following: "This service of plate is presented to G. W. Varnell, Esq., Assistant-Professor and Demonstrator of Anatomy, by the Students of the Royal Veterinary College, as a mark of respect and esteem. London, Session 1854-5."

Mr. Sanderson occupied the chair, and on rising to present the testimonial, spoke as follows:

"Gentlemen, I have to perform this evening one of the most pleasing duties that has fallen to my lot during the whole course of my life. Before, however, I proceed further, allow me to return you my sincere thanks for having done me the honour of electing me as your exponent upon this, to me, and I doubt not to you, very interesting occasion. The task I have undertaken is in itself very simple, yet I can but regret my inability to do that full justice to the subject which it merits. I could have wished that the honour of presenting this testimonial had fallen into more able hands than my own, and yet I am much pleased that you have chosen me to perform this duty, for it affords me the opportunity of publicly thanking Mr. Varnell for his repeated acts of kindness to me, even before he was personally known to many of you. During the summer of 1853, Mr. Varnell took every opportunity of pointing out to me, as a "freshman," many things that were novel and important. New ideas were thus created in my mind, and beautiful did they appear

to my imagination: I felt, I had a noble object in view! Not, however, to relieve the sufferings of my follow men, all important as it ever will be, but to relieve the sufferings of that valuable, and indispensable, yet illused animal, the horse. Mr. Varnell did, as I have said, everything in his power to explain to me the nature and rationale of the symptoms of the several cases that came under his notice in the college infirmary. How I have profited by his instructions, time alone will tell! I cannot leave this part of my subject, however, without again thanking Mr. Varnell, and which I do most sincerely. Ever shall I feel a lively interest in his future welfare, and which I doubt not will be a very prosperous one. Indeed, I am sure it would be if the good wishes of all of us could effect it, for I know that every student of the college entertains for him the best wishes, and the highest esteem.

Gentlemen, had I the flow of language, or the eloquence of our professors; I should bring it all to bear on the subject of our assembling here this evening, but even then I should fall far short of conveying to the gentleman we meet to honour, one half the pleasure it gives us in presenting him with this testimonial. Alas! I have not that which I desire, and therefore I hope you will grant me your indulgence in this my feeble attempt to convey to Mr. Varnell the high estimation we have for his talents as a teacher, and for his untiring efforts in imparting to us that knowledge, which will, I trust, enable us to become hereafter useful as well as scientific members of the profession we have embraced.

I regret that this testimonial, costly as it may be, is not of a more substantial nature, but given as it is with the good wishes of so many of the pupils, it will I am sure have a value in his eyes beyond all price. As small as the present is, it will be treasured by Mr. Varnell as long as he lives. It will be a pleasure, I doubt not, for that gentleman to look upon our gift in after years, when we are all scattered, perhaps, to every quarter of the globe. It will be a pleasure, I say, because it will recall to his memory many of our names, and our forms one after another will rise before his mind's eye, and light up a smile upon his countenance, as many of our little follies are brought back to his remembrance.

Gentlemen, as an anatomist, I need scarcely tell you that our demonstrator stands prominently forward among professors of that science. It is, as you well know, by knowledge of this branch of our profession that we are enabled to go forth into the world, and take our position as veterinary surgeons with confidence and credit to ourselves. It is, I again repeat, by a knowledge of anatomy that we can arrive at a

correct diagnosis of many of our cases, and with that accuracy and correctness which astonish the common farrier. This knowledge places us upon a pinnacle, the height of which he can never hope to attain. It is also by an intimate acquaintance with anatomy, that we are enabled to perform those surgical operations belonging to the practice of our profession, with such neatness and precision, that even the educated man looks upon us with respect. If all this be true, and no one I think can doubt it, then, because anatomy is the foundation of our science, he who neglects its requirements, neglects the possession of a good foundation to build his reputation upon. Let his other qualities be what they may, he will surely fail. If such, I again repeat, is the case, ought we not to be thankful that we have a gentleman like our assistant-professor and demonstrator, who is in every way so eminently qualified to instruct us, and point out the way in which we should proceed in order to become well acquainted with this most essential, and, perhaps, difficult branch of our art. I am sure you will agree with me when I say we ought, and I am equally sure you will agree with me when I say we are.

It is always a pleasure to see a subject come upon the table after it as been under the scientific touch, if I may so express it, of Mr. Varnell, and the simple and easy manner with which that gentleman endeavours to instil into our minds the different construction and relations of parts is equally admirable. But, gentlemen, these observations will equally apply to our other talented teachers, and respected professors, who are endeavouring, by their unceasing exertion, to impregnate our minds with those scientific principles which will I trust make us ornaments of our profession. I am sure it will give them pleasure to hear of our future welfare, and I therefore take this oportunity of thanking them in all our names for their united efforts in our behalf. To return, Mr. Varnell is, as you are well aware, ever ready to assist us in the search of information, and he takes a delight in explaining to us, in his clear and straightforward manner, the several questions which we are in the daily habit of submitting to him. I can conceive of nothing more laborious than to be a teacher to a large number of pupils, and to be day after day consulted by first one and then another about the same thing. If it is at all irksome for us to learn that which is for our future good, what must it be to one who is so well acquainted with anatomy as Mr. Varnell is, to be continually explaining and demonstrating the same thing, day after day, and year after year.

Gentlemen, I might go on at much greater length enumerating the several good qualities of Mr. Varnell, but they are

so well known to you, that I feel it would be as superfluous as it is uncalled for, and therefore, in your names I will present that gentleman with this testimonial, trusting that he will do us the honour to accept it, and wishing he may live many years, in health, to enable him to confer those benefits on others which he has conferred on us.

The presentation being made, Mr. Varnell, in accepting the testimonial, said

Mr. Chairman and Gentlemen,—Your unbounded kindness has placed me in anything but an enviable position. I believe it has often been said that kindness paralyses the organs of speech, and I certainly feel as though such was the case with me on the present occasion. One might naturally expect that the opposite effect would be produced, and with many persons, I dare to say, it is, as many doubtless become more eloquent under the same circumstances which seem to arrest the very power of speech in others. There may be those in whose constitution gratitude is so latent a principle that it requires an unusual circumstance indeed to produce those emotional effects which in the slightest degree would hinder their usual mode of utterance. There are also many whose feelings are always expressed with the greatest difficulty, especially under circumstances similar to those in which I am now placed. To this class of speakers, I am sorry to say, I belong. This failing, however, you are all familiar with; still I have to crave your indulgence; but fortunately it requires but little eloquence to convince you how grateful I am for the very handsome testimonial you have done me the honour to present me with. The eulogiums which have been bestowed upon me by the gentleman you have deputed to act as your Chairman on this occasion, in his kind address, are indeed highly gratifying to my feelings, for he assures me that the sentiments he has expressed are those possessed by you all, and therefore allow me, before I proceed any further, to tender to you, Mr. Chairman, to the Secretary, and to the Committee in general, my sincere thanks for your united kindness, and for the great trouble all have been put to on my account. Many a time have I asked myself the question, "Have I done that which is expected from me?" An inward monitor answers "No!" I feel I might, nay, that I ought, to have done more; still, through your kindness, my omissions as well as errors have been tolerated. And now, to receive from your hands this handsome present in testimony of my having laboured for your benefit, and to your satisfaction, is the greatest honour that could possibly be bestowed upon me. Such acts as

these can but tend very much to sweeten labour, and to lighten the load which in times past I have felt to press rather heavily upon me.

Gentlemen, when I first entered on the duties of Demonstrator of Anatomy in this Institution, under Professor Spooner, and which appointment, I am proud to say, I continue to hold, in addition to that of Assistant-Professor, I little thought of being rewarded as I have been by the pupils of the College. It was intended at that time that I should assist the students in their dissections, and this in the dissecting-room only. At the commencement, however, of the second Session, Professor Spooner thought it would be ofgreater advantage to the class if special demonstrations on anatomy were given at an appointed hour in the Lecture Theatre, than to continue, as my predecessor in office had, these explanations in the dissecting-room. The change was agreeable to me, because I saw that it would prove more convenient to us all. At the latter part of my second Session as Demonstrator, the pupils presented me with a gold watch as a testimonial of their regard and esteem for the exertions I had used in their behalf. This present has been my daily companion ever since, and I trust it always will be. When it was presented, I promised to be as punctual to my duties as the watch was true to time. The watch has done its duty, but how far I have kept my promise it is not for me, but for others, to say. I have at least always endeavoured to be as punctual as possible, believing "that time is the stuff that life is made of." Your chairman has alluded to my labours on several occasions in his speech, and I can but know that he has very much overrated my merits, if, indeed, I really possess any. Should I, however, have been instrumental in affording to you even half the benefits he speaks of, then I can but feel that I am the more over-rewarded by the honour you have this day conferred upon me. I certainly do claim the credit of being as punctual as most people to the appointed time of duty; but if, in the course of life, you meet with others not so punctual, do not hastily blame them. All are not blessed with the same uniform good state of health that I have had, and, without health, man is unfitted for mental labour, nor can he always be at his post although most anxious to fulfil to the letter all which he has engaged to do.

In the Session 1850-1, further honours awaited me, for I was then presented with a second testimonial. On that occasion a first-rate microscope was selected as the present. I was pleased with the choice of the class, because it harmonised with my wishes and tastes, and afforded me an opportunity

of investigating many of the hidden mysteries of nature. A microscope is an instrument which ought to be in the hands of every man who has any pretensions to science. Let me persuade you, when you become settled in practice, to possess one yourselves; possess, also, besides this, instruments for chemical manipulations, and then, independent of the pleasure you will derive, and the benefits you will receive from your investigations, you will soon discover that an impression in your favour is made upon those with whom you associate, and through them, upon the public at large. These things cannot but tend to establish you as men of science; then, indeed, will the mere *pretender* or *charlatan* shrink from your presence, and men of worth seek your acquaintance.

About the time of the presentation of this second testimonial, I was engaged by the late Professor Sewell to assist Professor Spooner in the other duties of the college, besides performing those of demonstrator. In this capacity I continued to act until the death of Mr. Sewell; after which, I was appointed by the governors of the institution assistant-professor, still retaining the demonstratorship.

The monotony of my occupation, and which sometimes is rather trying, has often been broken in upon, and relieved by the receiving of letters from some one or other of my late pupils. Each letter, I assure you, is read with a feeling of gratification, and especially so, for I am thus reminded that I have friends in all parts of the kingdom, nay, I might say, in all parts of the world, with whom I can hold friendly correspondence; and, sincerely do I trust that this day will add many more to the list.

And now, gentlemen, the Session of 1854-5 has arrived, and it has added another proof that my exertions for the behalf of veterinary pupils have been appreciated. Gentlemen, if I had the eloquence of some I see around me, who have kindly honoured us with their presence, I should be able in appropriate language to thank you for your valuable gift. This splendid service of plate I promise to keep so long as my life shall last, for great must be the want which would cause either me or mine to part with it. Depend upon it that, in other days, while I and those with whom I am blessed, are partaking of the social beverage which is associated with the use of this tea and coffee service, many of you, now here, will be remembered with a feeling of pride; I say me and mine, because, gentlemen, I assure you that Mrs. Varnell greatly appreciates the honour you have conferred upon us, and she desires me to express to you her

gratitude and thanks. No one, I assure you, feels more delighted than Mrs. Varnell does, when she hears of the success of the veterinary pupils, or regrets it more when fortune's favours do not smile upon them.

Ere long many I see around will have to appear before the board of examiners, need I say that it is my earnest hope that each among you will pass through that ordeal with credit to yourselves and also to your teachers. Let me persuade you to count the days, and let nothing prevent you from making the best use of the short time which is yet left you: short as it is, much may be done, if it be well spent and all of us put our shoulders well to wheel. To those who have yet a longer period to study, I trust you will allow me to advise you not to put off "the evil day" as it is termed, to the last, but take time by the forelock, and by perseverance and application, prepare yourselves for the final struggle, and then success will crown your efforts.

Gentlemen, I beg again to thank you for the honour you have done me, and also to assure you that, if I can forward your wishes at any time and in any way—if I can by advice assist you in any doubtful or difficult case, or promote your interest, I shall be most happy to do so. You will pardon me, however, if before I sit down, I again allude to the occupation of your time when you finally leave this institution. Consider yourselves even then as students; go on with your studies; record your cases faithfully, for they will prove useful references; recollect that two of your teachers are now the proprietors and editors of the only journal of veterinary literature in Great Britain. This journal, I trust, will be found on the table of your study, and in each of your homes. And not only do I expect that you will read it, but I anticipate that you will also be contributors to it. The valuable cases you will meet with in practice, the knowledge which each of you must necessarily accumulate from experience, would be useless to all but yourselves, if it be not given to the profession through the medium of the press. Your most valuable cases, —cases of novelty and interest,—you will send for publication, for the benefit of your professional brethren, now that you have a journal conducted by those I have alluded to, whom you know, and whom you appreciate. What, I may ask, would have been the use of the immense accumulation of knowledge possessed by that extraordinary man, Baron Humboldt, who now numbers his eighty years of age, had he not given us his 'Cosmos?' The same may said of hosts of other great and good men. Gentlemen, again accept my thanks and best wishes for your welfare.

PRESENTATION OF A TESTIMONIAL TO FINLAY DUN, Esq.

The students of the Edinburgh Veterinary College met in the Lecture Theatre, on Friday evening, March 16th, in order to testify their grateful acknowledgments to Finlay Dunn, Esq., Lecturer on Materia Medica, by the presentation of an elegant Escritoire and fittings.

The presentation was made, in the name of the students, by Mr. Paton.

The gift was acknowledged by Mr. Dun in an eloquent and feeling manner.

Veterinary Jurisprudence.

BALFOUR *v.* WORDSWORTH.

(*Continued from p.* 122.)

"EVIDENCE FOR DEFENDER.

"*Professor William Dick*, veterinary surgeon, Edinburgh: Called on 21st December to examine gelding at defender's. Defender, and pursuer, and some of defender's men present, had been told that horse was returned as unsound. It was going a little lame on near fore foot. Witness got shoes removed, and found that feet had been very much cut away, and second nail on the inside front part of hoof had pressed so much on the quick as almost to produce suppuration; and other nails all too near the quick. Though nail does not touch the quick, its nearness will cause such pressure as to lead to inflammation of foot, according to length of time there. The shoes also rested too hard on sole—not sufficiently removed from it. The outside rim of shoe was not properly applied to the crust or outside part of the hoof, and from this the quick was affected, and there was a degree of tenderness on pressure. There had been too much paring of the hoof and rasping, so that there was not sufficient crust left to support weight, and this led to pressure on sole. Did not observe any indications of founder. Had it been foundered four months before, witness must have been able to detect it from his examination of hoof. Nothing but natural rings round the hoof. Holds it strange to say that rings are unnatural on horse's foot. External rings may be caused on hoof from natural causes, as change from grass to stable

feeding. No corns. Pressure had to some extent caused bruises. Bruises will cause corns, by secretion of horn in the quick; but simple bruise will grow off, and leave no bad effect. A temporary injury, causing appearance of corn, wears off. Only nails that caused the lameness in this animal, as above mentioned. There was no appearance of any unusual condition of the quick where the seat of corn is, and no trace of the existence of a bruise at that part of hoof. No indication of pumiced soles. Quite plain when it exists, from state of hoof. There was no appearance of convexity of hoof, but animal was rather flat soled, and quite healthy, and sole in its natural form and position. There is every possible variety of soles, from a high degree of concavity to flat sole. High bred horses more concave hoofs. Nothing in animal to lead to conclusion that flatness of sole caused by disease. Examined horse next day; Mr. Barlow with him—continued of same opinion. Directed an alteration in mode of shoeing—seated shoes—and considered that in a short time he would be well. Bought by a Mr. Harper, a farmer. It would be from three to four weeks after his examination that horse brought back to witness's forge, and it was again there three or four weeks afterwards. Horse then quite well. Looked at horse when shoes off. No appearance of corns, or of convexity of hoof, or of disease of any kind. On 21st, and also on 22d December, witness examined horse's hind legs. It had no thorough pin—had no description of spavin—quite sound. No enlargement of hock but what is natural. No abnormal condition at all. Had this horse been unsound from any one of the causes mentioned by Horsburgh, witness must have seen this on his examination.

The witness was cross-examined as to the time it would take to produce corns, and also ridges, upon the crust in cases of founder; whether the horse was not lame on the off foot as well as the near; and how long the diseased condition of the feet from bad shoeing had existed. The Professor was of opinion that the injury "could not have commenced and been going on for a period of four or five weeks." The cross-examination did not elicit any proofs of the horse being affected with chronic founder.

John Barlow, veterinary surgeon, Edinburgh. (Quaker—affirmation): Has had experience in Edinburgh since 1842. Lectures for Veterinary College—with Dick's establishment, which is equal to any in Scotland or England. Had charge of a Manchester establishment. On 22d December, examined gelding at defender's with Dick. Gelding had no shoes on

fore feet; brought out to yard, horse was then lame on near fore foot. Witness formed an opinion as to cause; there was inclination to flat formation of sole, which is a natural formation, with a weak crust; also observed that general substance of crust was a good deal split up, as if in consequence of frequent removal of shoes and nails. One nail in particular had been bent inwards, so as to press on sensitive part of hoof—this had occasioned inflammation. Does not recollect which nail it was. Certain shoes were coarsely made, which were exhibited to him by a person whom he does not recollect. Did not examine the shoes on hind feet. Compared the shoes with hoof, and they appeared to him as might have been on animal. Appeared to witness, horse had suffered from shoeing—toe part of crust improperly shortened—and sides of crust improperly removed, and had the appearance as if splintered in shoeing; marks of rasping and paring to unusual extent; sole had been pared to great degree. Judging from those, satisfied they were causes of the lameness. No corns in horse; soles not pumiced. Pumiced sole has particles of sole broken up and porous; whole sole generally convex—without this, no disease. It consists in a diseased state of structure, and gets its name from this. Flat sole often mistaken for it. No structural change in the sole which inclined to flatness, but not unusually so. It is permanent change in the sole when it takes place. As to thorough-pin, none—no spavin—and founder, none. Had the gelding been foundered within four or six months of any severity, witness must have seen consequences of it. Founder produces change of structure, and no appearance of that in this gelding. Rings often remain after founder disappears. In young, healthy hoofs there are rings, but this kind of rings may be distinguished from those caused by disease. A skilled practitioner must be able to distinguish them, if his examination complete. Except so far as he has stated, the hoof in its structure was sound. Lameness then existing amply accounted for as above, but of such a nature as to permit of tolerably speedy removal. Shoeing, &c., alone caused the lameness. Six weeks before his examination, gelding could not possibly have been unsound from any of the assigned causes. Injury is frequently caused by process of frosting, and lameness thereby induced. Saw horse again on 4th February, 1853, when it was shod in Dick's forge—date in D.'s books—quite free of lameness after being shod. Witness had horse trotted along, to see state of animal. Had done this on purpose, to test his former opinion. Saw animal before shoes on—examined

hoof, to all appearance healthy. Some horses flatter soles than others. Bog-spavin different from thorough-pin. Not a judicious mode of leading a horse to have him taken home, as this was after sale.

Mr. Barlow underwent a long cross-examination, chiefly with a view to show that his opinion had been influenced by Professor Dick, but this was not substantiated in the least degree. He stated that the horse went tender upon the off foot when he saw him first, but this he considered to depend upon the sole being thin, and the animal being without a shoe when he examined him.

Thomas Watson: Is a smith in Nottingham-place. Has shoed horses for 22 years. Three men under him for shoeing. Has occasion to see unsound horses, and feet of horses, and lameness. Shod gelding which belonged to defender. Knew it from first time it came to defender, regularly. Had been there nearly five months, and then went to pursuer after sale. Saw no indication of unsoundness in feet, and must have seen this if there had. Was not afflicted with founder, and never saw any symptoms of that disease. Must have known this. No corns whatever. On 21st December witness called to take off shoes. Last time he had shod horse was in the beginning of November, and horse then perfectly sound. Different shoes on horse from his upon 21st December. Very rough shoes, and pressing on soles —plain flat shoes—nails. There were two nails too close to the sensible part of the hoof, and another one that was bent in the shoe of fore foot, near. The whole of the nails in both fore-feet shoes too close to sensible part of foot. Horse going very lame, and witness considered that hoof had been too much cut away, and that crust was too much cut up to the toe, and shoes being too small, and thus too much pressure on sole. Shoes had been frosted. This shortened shoe, and thought shoes had been too often off. Shoes should have been off, irrespective of frosting, twice during above period—once removed, and once for new shoes. Thought shoes off more frequently. There had been a very material cutting away of crust, and effect of this is to put nails too near hoof. Witness had seen the animal often at work, and appearance of shoes showed it had been wrought. As to pumiced soles, no marks of this on the horse's hoof at any time. On 21st December, acted by Dick's directions—pursuer in yard at time, but at a distance. On that occasion witness said to pursuer that he had got his horse hurt in shoeing, and might be easily cured; and pursuer said, did he think Allison, in Dalkeith, could not shoe horses? This horse shod four or five days after with seated shoes, which is now always done.

This evidence was not affected in any main point by the cross-examination of the witness.

James Cooper.—Head ostler at defender's, at Drumbank; eighteen or twenty horses there. Has been twenty or thirty years among horses—great experience—twelve years postmaster, and twelve years elsewhere. Buys horses for defender. Recollects of gelding—purchased at Northallerton, in May, 1852. Witness there, and saw him purchased—four years old—not very high bred—had been little worked—brought to Edinburgh by rail—was warranted sound. From May till November with defender. Witness saw horse almost daily. Defender drove gelding out and in to Drumbank, which is place of defender's residence. Witness has both ridden and driven the horse. Never had corns, nor laid up with founder—always ready for work—never ill. No veterinary surgeon called in. Recollects of sale. Witness paid £29 for horse—dearer in May than November. Has looked at horse's feet and washed them out—no founder—no pumiced feet. Mostly used for defender's use. Saw horse after being sold at defender's—sold to Harper, who took him away.

The evidence of this witness was likewise not affected by the cross-examination.

Francis Gerrard.—Hostler of defender, Edinburgh. Upwards of twenty years an ostler—has been eighteen months with defender. Recollects of gelding coming from Northallerton some time in May. Horse then sound. Witness examined him at time—all right. Feet had no appearance of corns nor of founder. With defender till sold to pursuer. Had no disease. Saw his feet often. Watson shod him; and quite sound when sold. No thorough-pin or bog-spavin. In December, horse brought back very lame. Witness examined fore feet then. Held bad shoeing cause of lameness. Shoes too flat and pressed on sensible part of hoof. Watson took shoes off by Dick's orders. Showed them next day to Dick and Barlow. Horse was shod with leather, and hoof too much taken away. Horse better in January when sold, but not thoroughly sound. Horse kept generally at Drumbank, and driven in to Edinburgh and out by defender.

Robert Harper, Edmonston Mains.—Bought gelding from defender. Had seen defender driving horse in and out to Edinburgh, and witness had in view to purchase it then. Witness offered defender £30 for horse in July or August, and horse quite sound then, as witness thought. Defender had driven witness with horse. Bought horse for £17 10*s.* with no warrandice as unsound horse. Witness kept horse about a week in stable. After that, animal appeared to be quite sound. Witness rode him and drove him regularly.

Drove his children to Dalkeith every day, nearly three miles, and on market-days, witness drove horse into Edinburgh. Thought hoofs much pared away and in bad order—kept him for nine or ten weeks. Got horse shod at Dick's twice. Witness held horse always sound after this. Showed horse to Aitken, at Joppa, occasionally when at witness's farm about other horses. Witness sold horse to Edgely, as animal too good for children—sold him for £25 10*s*. Edgely a dealer in horses. This was nine weeks or so after witness got him. Witness never saw any indication of founder or of corns, or of unsoundness. Never saw shoes off.

The witness said, in his cross-examination, that when he first bought the horse, it was not entirely free from lameness, but became so in eight or ten days.

Thomas Edgely, farmer at Gilmerton.—Knows Harper, his brother-in-law. Purchased from him about March last the gelding as in exchange. Valued gelding at £25. Had it in his possession three weeks. Animal sound all that time—can say animal was quite sound. No traces of founder or of corns, or of lameness or tenderness. Horse worked by witness occasionally. Drove him to Gifford fair, seventeen miles, and sold him before going into market there. £27 was price, and witness warranted him sound. Archibald Patullo was purchaser, and no claim on warranty ever made by Patullo.

Examined by Macfarlane.—Patullo is a horse-dealer. No written warranty given. Bought horse as a dealer. Witness occasionally drove the horse; half of each of the three weeks horse might work. No veterinary surgeon or smith saw horse when in witness's possession.

Patton stated they cited Patullo, and execution put in.

John Aitken, veterinary surgeon, Joppa.—Saw horse in Harper's three or four times latter end of July, and afterwards witness examined horse and considered him perfectly sound. No appearance of founder or of corns, but shoes not off—nor of thorough-pin; no pumiced sole.

Cross-examination.—No lameness on either of the occasions when witness saw the horse.

Patton puts in record and correspondence.

Case for defender closed.

The Finding.

Edinburgh, 20th July, 1853.—The Lord Ordinary having, on the 15th and 16th days of July, 1853, tried the issue in this cause, as appointed by interlocutor of 5th July, and thereafter heard the counsel for the parties, finds upon the evidence, (1.) that at the time of the sale of the gelding, the

defender specially warranted the animal to be sound; (2.) that at the time of the said sale, the gelding was not sound; (3.) that the pursuer, within reasonable time, gave notice to the defender of the unsoundness; and, (4.) that the defender is indebted and resting-owing to the pursuer in the sum of £25, with interest, and under deduction as set forth in the schedule annexed to the issue; and also in the sum of £5, as the modified amount of the expenses of keep, loss, and damages, mentioned in the said schedule.

(Signed) JOHN COWAN.

APPEAL.

The defender, the said *Samuel Wordsworth*, feeling himself aggrieved by the findings in the said interlocutor of date 20th July, 1853, and being advised that the same are incorrect or erroneous, begs leave humbly to bring the same under review of your Lordship.

"May it therefore please your lordship to review, upon your lordship's notes taken at the trial, the foresaid findings in the interlocutor of date 20th July, 1853, and to reverse, vary, alter, or correct the same; to find that at the time of the said sale the gelding was sound, at least that it is not proved that it was unsound; that the pursuer did not, within a reasonable time, give notice to the defender of the alleged unsoundness; and that the defender is not liable to the pursuer for the sums concluded for in the summons, and referred to in the said issues, or any part thereof; and find the pursuer liable in expenses to the defender; or to order a new trial of the questions of fact stated in the said issues, for the reasons to be afterwards proponed; or to do otherwise as to your lordship shall seem proper.

"According to Justice, &c.

(Signed) "G. H. PATTISON."

REPLY.

Edinburgh, December 3d, 1853.—The Lord Ordinary having heard parties' procurators upon the note for the defender, No. 32 of process, and having resumed consideration of the cause, and of the evidence adduced at the trial, refuses the prayer of the said note, and adheres to the findings contained in the interlocutor of 20th July, 1853. One word delete.

(Signed) JOHN COWAN.

Note.—The views entertained by the Lord Ordinary upon the import and effect of the evidence remain unchanged, not-

withstanding the very able pleadings submitted to him at the rehearing of the cause by the defender's counsel.

As regards that branch of the issue which relates to notice of the unsoundness to the defender, the recognised principle is, that the time within which notice should be given to the seller depends mainly upon the period when the unsoundness is discovered. In this case, although tenderness in the fore feet was shewn early after the sale, the pursuer has reasonably accounted for his continued belief that no cause of permanent lameness existed in the gelding until it became so much worse as to lead him to require the services of a veterinary surgeon; and immediately thereafter he intimated the unsoundness to the defender. In the proved circumstances, the Lord Ordinary considers that no case of undue delay exists, and that notice was given within a reasonable period after discovery of symptoms of the unsoundness which has been proved. (Initialed) J. C.

Second appeal.

Unto the Right Honourable the Lords of Council and Session, the Reclaiming Note for *Samuel Wordsworth*, proprietor of Her Majesty's repository, Nottingham-place, Edinburgh; in the action at the instance of *John Balfour*, Tacksman of Gilston, in the county of Edinburgh, against the said *Samuel Wordsworth*.

That in the said action, Lord Cowan, Ordinary, was, of these dates, July 20, and December 3, 1853, pleased to pronounce the prefixed interlocutors, which are humbly submitted to the review of your lordships.

"May it therefore please your lordships to recall and alter the interlocutors submitted to review; to sustain the defences; to find that on the questions of law arising upon the evidence as appearing in the notes of the Lord Ordinary, the defender is entitled to a judgment in his favour; to assoilzie the defender from the whole conclusions of the action, with expenses; or to do otherwise in the premises as to your lordships shall seem proper.

"According to Justice, &c.

"G. H. Pattison."

"This second Appeal, on the ground that the horse was not returned *immediately* Mr. Balfour found him lame, was heard in the 'Inner House' about the beginning of last autumn, and the original finding of the Lord Ordinary confirmed, with all the additional costs. The Court expenses alone amounting to £332." "J. Horsburgh."

TAXING RIDING HORSES USED BY VETERINARY SURGEONS.

To the Editors of 'The Veterinarian.'

Gentlemen,—In the Act of Parliament passed last year for levying taxes upon horses, the amount to be paid for a riding horse is one guinea; but there is an exemption clause, which says that any person duly qualified to act as a physician, surgeon, or apothecary, shall be charged only ten shillings and sixpence; and, as I wished to ascertain whether veterinary surgeons were included in this exemption clause, I appealed against the greater charge. Her Majesty's Commissioner held that veterinary surgeons were not included in the exemption; the judges, however, overruled his statement, and gave it as their opinion that, as it was not stated in the clause what description of surgeon was to be exempted, and as veterinary surgeons held diplomas entitling them to practice, they had as great a right to the exemption as others. Her Majesty's Commissioner stated that, under these circumstances, he would only charge ten and sixpence in my case, but he would not lay it down as a rule to be acted upon in other cases until he had obtained the opinion of the judges at Edinburgh. How they may decide remains to be seen, but I think that, as professional men, we have an undoubted right to be included in the exemption. Your opinion regarding this will much oblige,

Yours, &c. CHARLES MOIR, V.S.

PAISLEY; *March* 12, 1855.

[We may congratulate Mr. Moir on having been successful in his appeal against the charge of one guinea as a tax upon a riding horse, but we are of opinion that, taking the strictly legal view of the question, veterinary surgeons are *not* exempt from this payment. Their claim to the exemption is, we consider, equally as just as that of surgeons and apothecaries, and we should be glad to see the question taken up by the Council of the Royal College of Veterinary Surgeons, with a view to the removal of the impost, by representing the matter in its true light to the proper authorities. A precedent is of the utmost importance in things of this kind, and we have it in the case before us.]

OFFICE OF ORDNANCE.

ROYAL REGIMENT OF ARTILLERY.

John Mason, gent., to be veterinary surgeon.

Thomas John Williamson, gent., to be veterinary surgeon.

London Gazette, March 12th, 1855.

OBITUARY.

Died, on Wednesday, the 17th ult., at Fakenham, Norfolk, of disease of the heart, Mr. George Baldwin, M.R.C.V.S., aged 77 years.

Mr. Baldwin had been for many years subject to severe attacks of the gout, which at last gave rise to an affection of the heart. He was early initiated into the profession, having been brought up with his father, who had long practised it; and soon after the opening of the Royal Veterinary College he became one of the resident pupils of the late Professor Coleman, with whom he remained for two years, and obtained his diploma 27th October, 1795. Mr. Baldwin then went to Fakenham, where he continued, and conducted an active and profitable country practice for the long period of sixty years, becoming much respected by a large circle of friends. His diploma has the signatures of Henry Cline, John Abernethy, and Astley Paston Cooper, with Robert Morley, Secretary; thus carrying the mind back to the earlier years of the College, when the system of instruction was very different to what it now is; and yet there went forth from the Institution those well acquainted with the principles of their profession, a few, and only a few, of whom now survive to tell the eventful tale of years gone by. There are not many men who have won for themselves greater respect than our deceased friend, or who were in reality more deserving of it.

> "Then what is life? A smile,
> And then a tear: a breath
> Just drawn, and lost in death."

We have likewise to record the death of Mr. Edward Yates, of Leeds, who died on the 25th inst., after a few days' illness, in the forty-third year of his age.

To this also we have to add the death of Mr. Richard Smith, of Acton, who had but recently entered on the practice his profession.

ERRATA IN NO. 327.

Page 138, line 9 from the bottom, *for* congestion if universal, *read* congestion *unless* universal.
,, 165, lines 2 and 5, *for* millimetre, *read* metre.
,, 175, line 6, *add* and, *after* our views.

THE

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Communications and Cases.

ON ARSENIOUS ACID.

By H. Lepper, M.R.C.V.S., Aylesbury.

Gentlemen,—Probably no one who takes up the *Veterinarian* for perusal, has read with greater interest than myself the cases reported by Mr. Truckle, of Salisbury, in the March number, of poisoning by arsenious acid. As the account now stands, it appears rather a singular and mysterious affair.

I beg, through the medium of your journal, to ask Mr. Truckle if, in his investigation of the subject, he has discovered how and where the poison was procured? how it was administered? in what quantity? by whom, and for what purpose it was given? Also, if one dose only had been administered, or if the mischief arose from numerous doses?

In doing this, I have to apologise to Mr. Truckle; believing, however, I shall be pardoned, if I may judge of him from the accurate and able manner in which he has favoured the profession with the report.

I am in the habit of almost daily giving arsenious acid, in what would be considered rather large doses by those who are not so well acquainted with its effects as myself; often, too, repeated at intervals of twelve hours, and continued over a long period, particularly in aggravated cases of nasal gleet, or chronic glanders, so that the quantity taken has sometimes amounted to several ounces.

I have frequently known its administration to be followed with the most favorable results, and I am satisfied that when it is given with the food, it does not accumulate in the stomach or system, and thus exert its baneful influence

violently or suddenly; nor did I ever witness any unfavorable symptom arise from its exhibition.

My general course of procedure is as follows: I usually commence with ten-grain doses, in the form of powder, and combined thus—

℞ Acid. Arsenios., gr. x;
Pulv. Glycyrrhiz., ʒj;
Pulv. Capsici, gr. v. M. ft. pulv.

This I direct to be given, at first, every day, mixed with the animal's food; and if, in the course of a few days, I perceive no alteration to have taken place in my patient, I order the dose to be repeated every twelve hours. On the paper containing the powders are printed the directions, and in large letters the word POISON, so that no accident may arise.

It may be asked, why combine cayenne pepper with the arsenic? My reply is, that by so doing I more effectually prevent an accident arising. Grooms and horse-keepers will often, with a view to discover its nature, taste a powder; and doing so with this, the pungency of the pepper induces them to spit it out again, and thus the arsenic is not swallowed by them.

I will now give an illustrative case. On referring to my diary, I find that ten grains of arsenious acid were given to a four-years-old entire horse, affected with glanders, night and morning, for sixteen weeks; so that the large quantity of more than four ounces and a half of this mineral substance was administered with the most satisfactory result, for soon after the termination of this period, he was sold as "sound," and used for the procreation of his species.

In several other cases I perceive, when it has not had its desired effect as soon as anticipated, its use has been continued in for nearly as long a time without its producing the least indication of poisoning.

I have seen a great number of cases of accidental poisoning by this agent in most of our domesticated animals, viz., the horse, cow, sheep, pig, and dog. Also, under different forms of administration, both when it has been taken into the stomach slightly diluted and also largely diluted. Likewise, when it has been applied to the surface of the body in various degrees of strength, and particularly when it has been brought freely in contact with a recent wound.

I have alluded to these instances for the purpose of observing that, in Mr. Truckle's cases, there was something peculiar and unusual as it respects the *paralysis* observed by him. This is an effect I have never yet seen. The pendent

position of the head, a weak and frequent pulse, accompanied with profuse diarrhœa (particularly in the cow), a disinclination to move, or want of power, consequent on the *great prostration* which is always present, are the ordinary symptoms.

When the acid has been much diluted, and taken in a very considerable quantity, I have seldom witnessed any marked indications of abdominal pain.

Any further information I may possess on this subject, I shall be most happy to communicate to the profession if required.

I am, Gentlemen, yours obediently, &c.

MEMOIRS OF A VETERINARY SURGEON.

THOUGHTS ON LAMINITIS.

By Thos. Greaves, M.R.C.V.S., Manchester.

Relentless persecutor! What art thou? Whence comest thou? With what precious talisman shall I bribe thee to relax thy cruel and torturing grasp? Will neither gentle nor desperate means induce thee to relent and change thy direful and weird determination of tearing down thy miserable and suffering victim?

These thoughts, or some like them, have, I doubt not, often occurred to the minds of other practitioners besides my self, when standing by the side of their suffering patient, an eyewitness to the unsuccessful result of the best efforts made to afford relief. For my own part, when my patient's countenance seems to implore my aid, I always feel overpowered with a sense of deep humiliation on finding, to my unavailing regret, the inefficiency of our acknowledged remedies in many cases of this most distressing disease.

Of all the anxieties and perplexities of life, there are, I presume, none to a sensitive mind more insupportable than the full sense of his own abject impotence and helplessness. The young practitioner, armed for every emergency with a mind well stored with rules, facts, and principles, and backed with an abundance of theoretical knowledge, may not at first comprehend these sentiments, but let him be in close, constant, wearing contact with the realities of life for twenty years, and he will find, if he takes any interest at all in his

profession, that his is a chequered scene indeed,—that his path through this life is not all smiles and happy sunshine, but is often beset with cares and deep anxieties, which are inseparably interwoven with his every-day duties. He will find, too, times and seasons when he will have to use his utmost tact and talent to pilot himself through some unforeseen difficulty; in having to appease the ire of some unsatisfied client, and to convince him that the loss he has sustained was unavoidable; but more especially so if he has unhappily neglected that great and grand desideratum in practice of forewarning, and thus preparing his client for such a result. But even worse still is his difficulty, if he has in its early stages unguardedly represented the case as one of light importance. A few of these *admonishers* will rouse him to intellectual effort, and an endeavour to discover some improvement in the treatment of diseases which, whilst it proves valuable to himself, may also be found beneficial to others.

After these prefatory remarks, I will now more particularly apply myself to the consideration of that most formidable disease, with which this paper is headed, as it shows itself in cart-horses. I consider this disease as one peculiar in itself, and distinct from all others of the plantar organ, since it is more acutely painful than the rest, and its duration more protracted. Sometimes the true cause is buried too deep in mystery to be clearly defined; at other times we quiet all qualms of conscience by a complacent assurance within ourselves that we have discovered the delinquent, and that the assignable cause is self-evident. But I opine that in the majority of even such cases as these, were we to investigate the history of them physiologically only a little deeper, we should find much to excite our interest, and open up points of singularity, some of which seem enwrapped in a veil which it is our duty if possible to withdraw.

Presuming that I am addressing practical men, I deem it altogether unnecessary to go into the ordinary details of this disease. I will therefore simply adduce the fact that, during my professional career, I have encountered a goodly number of these intractable cases, and that my treatment has been attended with varied success. Some have been cases of what is usually described as acute, others subacute, and again others chronic. But it appears to me that these forms do not differ in kind, only in degree; that they are one and the same disease, and emanating originally from one cause, and not, as is usually described, to one of three causes, namely,—1st, to violence done to the feet by too long-continued

exertion; 2d, to being kept too long in a state of inaction; and 3d, to metastasis.

It is my intention, in the present instance, to make a few remarks on these hypotheses *generally*, and on metastasis in *particular;* for it is one of those complex and ill-defined occurrences or freaks of nature extremely difficult to understand; for when we witness a patient labouring under what appears to be a severe attack of pneumonia, or enteritis, and just in the midst of his sufferings we perceive a sudden cessation of those symptoms, and he all at once becomes as it were transfixed to the ground and unable to move, we may very naturally ask ourselves, where is the original disease gone to? The animal is now, alas, lame enough; but where is the original disease? It has disappeared as if by sleight of hand. But the word metastasis is to my mind a most unsatisfactory way of meeting the difficulty. It is a vague and unmeaning term; it explains nothing. Would it not be a better definition to say, that the system being surcharged with a superabundance of a vitiated, pernicious principle, which appears to be floating about in the vital fluids, and which becomes attracted to the feet, probably by a preponderance of electric influence; there must exist a strong susceptibility, or affinity, in the laminal tissues to attract this pernicious principle to them?—a sort of appetency, which overrules and concentrates itself. The partial or temporary settling upon the lungs or intestines was unnatural—was artificial, they being at the time in a state unsuitable to the location of this vacillation of inflammatory diathesis. This uncongenial state of the system is, as yet, an undefined enigma. Few persons think at all about an agency which, though fatal in its ultimate results, is followed by no immediate effect; the predisposition, however, once established, any circumstance may become an exciting cause; but because this latter is nearer to the effect, it at once attracts the attention and fixes the observation, and thus often the true delinquent remains undiscovered. Yet there is at work, unobserved, an internal mystical agency that gives a preponderance, and conduces to this selection; and this partiality is, I am persuaded, governed by certain laws, the investigation of which would amply repay the diligent physiologist.

It is essentially an idiopathic disease; for if that peculiar and favorable condition of the system does not exist, the horse with good feet, properly attended to, may be rattled along the hard road at a terrific pace, as long as you like in reason; or he may stand inactive as long as you please; or

you may excite in him any internal disease you can; or you may irritate and annoy the mucous membrane of the bowels to whatever extent you like, without any fear whatever of laminitis or metastasis occurring. But, on the other hand, if that state or condition of the system does exist, depend upon it it requires only a very little help, and a fractional part of any of the above excitants would become amply sufficient to develop it. Moreover, I believe this state of the system is dependent upon many causes, and may exist to a greater or less extent unobserved for weeks or months, lurking, as it were, in a latent form, waiting only for some fostering or exciting circumstance to rouse it into activity. This state may be temporary, or, for aught I know, it is hereditary. I am not in a position to prove it, nor do I think veterinary science is as yet sufficiently advanced to pronounce definitely upon it; but if such is a fact, does it not behove us, as practical men, to inquire into it, and to ask ourselves what is the precise nature of this state? what are the causes of it? what are its premonitory indications? and what means, if any, can be employed to correct it in time, and by so doing circumvent such baneful consequences?

These inquiries shall form the subject of consideration for my next paper.

ON URINARY DEPOSITS.

By George T. Brown, Professor of Veterinary Medicine, Royal Agricultural College, Cirencester.

It is a somewhat remarkable fact, that the above subject, which has awakened so much attention in human medicine, should have remained almost altogether unnoticed by the veterinary practitioner. Without staying to inquire into the causes of this, we may take the liberty of assuming the matter to be equally worthy of the investigation of both; and, with the view of clearing away some preliminary difficulties, we propose to consider the general character of the healthy secretion designated urine, premising that for the practitioner who desires to avail himself of the hints we presume to offer, a few tests and some apparatus are necessary; to wit:—watch-glasses, test-tubes, spirit-lamp, test-papers, namely, litmus and turmeric; nitric, hydrochloric, acetic, and sulphuric acids; chloride of barium, oxalate of ammonia, acetate of potash, liquor potassæ, sesquichloride of iron; an

urinometer for taking specific gravities; and a small thermometer, obtained with the urinometer, and in the same case. Thus equipped, the veterinarian may conduct an examination of the urine at a moment's notice; sufficiently at least to judge of the necessity of a more extended one afterwards. For a minute investigation, however, the microscope is indispensable.

The urine of the horse in health varies in aspect, from a clear, sherry-coloured fluid, to a turbid, white mixture, depending on the amount of carbonate of lime present. The specific gravity at the temperature 60° Fahr., may be stated at 1040. The reaction is uniformly alkaline. Under the microscope, the appearance depends on the amount of deposit. A specimen of the perfectly clear fluid developes nothing beyond an occasional small piece of epithelium; while a turbid specimen shows the characteristic carbonate of lime crystals, and these sometimes in considerable abundance.

The urine of the ox and sheep is for the most part clear and pale in colour, rarely presenting any deposit, even after standing for some time. The specific gravity of the fluid from the ox may be placed at 1032; from the sheep at 1041.

A difference of a few degrees in taking the specific gravity will constantly be noticed; but this is unimportant; only serious deviations from the standard being worthy of remark. The numbers I have selected are those that have occurred most constantly. As might fairly be expected, temperature materially influences the sp. gr. of the fluid, and the following table may perchance be useful in cases where there are no means at hand of obtaining the requisite degree of heat. The specimen experimented on was lowered to 36° Fahr., and then gradually raised to 131°; the specific gravity being frequently taken during the process. The results are shown as under:

Temperature.	*Spec. Grav.*
36°	1044·7
42	1043·0
53	1042·0
56	1041·5
59	1041·0
63	1040·5
72	1040·0
91	1036·5
98	1036·0
118	1032·0
131	1029·0

We will now consider the practitioner about to examine a

specimen of urine obtained from one of his patients. His first care will be to ascertain the reaction by his test-papers, then to nearly fill the graduated glass belonging to his urinometer, and insert the small thermometer. If the fluid has been recently collected, it may require the glass to be allowed to stand for a few moments in cold water, so as to reduce it to the required 60°; or if it has fallen below that temperature, a few passings of the spirit-lamp outside the glass, or the immersion of it in hot water will effect the desired elevation. The specific gravity being taken, the operator next places a small quantity in a test-tube, and causes it to boil by the aid of the spirit-lamp. A greater or less amount of precipitate takes place, which may be merely a lime salt, or possibly albumen. To decide this a few drops of nitric acid are added. Should the precipitate increase, the evidence of albumen is pretty clear. On the other hand, if it becomes dissolved, it is merely a salt of lime thrown down, as salts of lime always are from the heated fluid. Another portion of the urine is to be acidulated by dilute nitric acid, adding afterwards an excess of the acetate of potash, and allowing a single drop of the sesquichloride of iron to run down the side of the tube into the fluid: no precipitate shows the absence of phosphoric acid, and the phosphates generally. Another portion is to be acidulated by acetic acid, and tested by a solution of lime: no precipitate indicates the absence of oxalic acid and the oxalates.

This examination is sufficiently extended for all cases where the urine presents no prominent modification of colour, or of specific gravity. Besides the constantly occurring carbonate of lime deposit, we occasionally meet with the oxalate of lime, phosphate of lime, and the ammonio-magnesian or triple phosphate. That these are seen so seldom, is possibly due to the very few careful examinations of the secretion in our patients rather than to the rarity of their occurrence.

Of the carbonate of lime deposit it is unnecessary to treat, excepting where it occurs in immense quantities, as it does not rank as a condition of disease, but on the contrary as a normal constituent of the urine. The oxalates and phosphates, occurring in sufficient quantities to form an appreciable precipitate, are always to be considered as products of diseased action; the former indicating mal-assimilation, and the latter derangement of the nervous system. In examining the urine suspected to contain either or both of these salts, the chemical tests before suggested may be of some assistance; but to diagnose with certainty, the urine must be examined by

the microscope. For this purpose the fluid, being slightly warmed, is placed under the quarter-inch power, and the oxalates will be discerned by the octohedral or dumb-bell form of crystals; and the phosphates by the prismatic or stellated ones.

The inorganic deposits are by no means the only ones occurring in the urine; indeed it seems that matters derived from the animal tissue are even more frequent, such as albumen, blood, pus, and bile. Of the first named, I have not met with an instance where it has not been mixed with some of the other constituents of the blood. Its presence is easily ascertained by the employment of nitric acid as a test, furnishing a white precipitate. The application of heat having the same effect, the double test is necessary: neither by itself being considered satisfactory. In the event of blood being present, the tests for albumen will develope the characteristic reaction, while the colour of the urine leads us to conclude the nature of the deposit. To make the matter certain, Pariret's test is a simple and effective one. The suspected urine is to be boiled and filtered, to the brown precipitate on the filter add liquor potassæ; a greenish fluid passes through, to which add a few drops of hydrochloric acid, when a white precipitate immediately falls. If blood be present, all the reactions will be quite defined: neither one is sufficient by itself. The urine in a case of red water would frequently, by its colour, lead us to infer the presence of blood, but the above test does not develope *all* the requisite reactions. The fluid deposits a brown sediment by boiling, and also by the addition of nitric acid, indicating the presence of albumen and some colouring matter; but as no green solution follows from the use of the liquor potassæ, and no precipitate from the hydrochloric acid, it cannot therefore be considered that blood is present.

The microscope furnishes a means of distinguishing between the urine in a case of red-water, and some from a case of hæmaturia; and at once proves the value of Pariret's test. The blood-discs do not at all times appear as we see them when examining a specimen of blood, namely, with the external ring, and an inner darker portion, but simply as a series of rings. Apparently some of the water of the urine has, by absorption, distended the investing membrane. This idea is strengthened by observing, that after the specimen has become nearly dry on the object-glass, the central portion is quite apparent.

In the specimens of red-water I have examined, nothing resembling a blood-disc could be discerned. Numerous

minute molecular bodies were present in rows; of what nature I could not determine. The tests for blood and bile gave no reaction beyond the indication of albumen.

The presence of pus in the urine is detected only by the microscope, under the field of which instrument the peculiar granular corpuscles are at once seen with their distinctive characters. Their existence would of course indicate suppuration in some part of the urinary passages; but other symptoms are necessary to lead us to the precise seat of the disease. As it respects bile, or any of its elements; I have not yet met with a case. Its presence would seem to be easily discovered by simple tests, and we should be justified in suspecting it in any long-continued case of liver disease.

Dr. Golding Bird suggests two easy methods of ascertaining the admixture of this fluid, or its colouring matter.

1. "Pour on a white plate a small quantity of the suspected fluid, so as to form a thin layer; a drop or two of nitric acid added will produce a play of colours in which pink and green predominate, if bile is present."

2. "Add to a little of the suspected fluid on a plate a small quantity of strong sulphuric acid, when the mixture becomes hot, a drop of a saturated solution of sugar will cause a fine purple colour in the event of bile existing."

AN ATTACK OF LAMINITIS FOLLOWING THE EXHIBITION OF ACTIVE PURGATIVE AGENTS.

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

On the morning of the first of the present month, my attendance was requested on a small pony, six years old, some distance from this town, but owing to other engagements, I was unable to attend until late in the afternoon, and to save me some trouble in carrying a parcel of medicines, my assistant packed up what he thought I might require, and, giving it to the messenger, desired him to keep it untouched until my arrival.

To my inquiries, answers to this effect were obtained: The day previous the pony had been ridden by his owner about twenty miles, the latter part of the journey being performed with much difficulty, the rider having to dismount and lead the pony. Arriving at home, food was rejected, and otherwise the animal appeared very unwell. A farrier in a neighbouring village was sent for, and who was present on

my arrival. With all the *sang froid* of a man conscious of his superior knowledge, he at once informed me that, at two o'clock in the morning, he had taken five quarts of blood from the pony, had given seven drachms of aloes, and, since my parcel of medicine had reached them, had administered one of my "staling balls."

This information, before seeking to ascertain the present condition of the patient, caused me to look somewhat gloomily on the matter, for my "staling ball," besides other ingredients, contained ten grains of croton seed! "What," thought I, "will be the result of seven drachms of aloes given to a thirteen-hand pony at two o'clock in the morning, succeeded by ten grains of croton seed at five, p.m.?" I had not long to "pause for a reply;" for I soon ascertained that the pulse numbered 110 in the minute; the membranes were much heightened in colour, and the respirations were both hurried and laborious; the fæces were being passed as usual; the pony had been several times up and down, and had manifested some urgent abdominal pain during the morning. My first object was, if possible, to prevent the action of the overdoses of medicine, which I felt assured would produce fatal results if I failed to do so. Consequently Opium, the Extract of Catechu, and Prepared Chalk, with flour-gruel, were given to a considerable extent, and the pony was purposely kept in an almost dormant condition. On the morning following, I saw my patient early, and was rejoiced to know that no purging had as yet taken place. The pony was apparently easier, the pulse had lowered ten beats in the minute, numbering now 100.

The case was one of interest to me, and I regretted that my patient was so far from Sheffield, each journey entailing upon me a ten miles' ride. I paid, however, a second visit that night, and endeavoured to make myself believe that my case was progressing favorably, although the bowels were more relaxed than they were in the morning, but there was now an absence of all pain. He had drank rather freely of the flour-gruel, but had evinced no desire for food, which, in the form of hay, had been offered; and otherwise the symptoms were not discouraging.

The next day I found that the purgatives had got into full action, and that the pony was much debilitated. Frequent pain had been exhibited, and the countenance was anxious. There was also increased heat in the walls of the fore feet, which excited my suspicion, and I directed that the shoes should be removed, the soles pared until quite thin, and

poultices applied. The opium was perseveringly administered, and to the stable comforts of the animal were devoted our best attentions.

On the 4th, the fæces were more consolidated, although, during the night, there had been very much purging, and an occasional suffering from abdominal pain. The pulse was reduced to 75, and the membranes were of a more natural colour. My fears as to metastasis were not without cause. The inflammation of the laminæ of both fore feet is excessive; the animal is unable to stand for more than a few minutes at a time, and the difficulty is increased when the poultices are removed for the purpose of being changed. Blisters were applied to the coronets, and the feet kept constantly enveloped in poultices. A few days brought about great improvement both in the health and lameness of my patient; and although, while I write, he is far from recovered, he walks only with some degree of caution, and is rapidly regaining his lost condition.

CASE OF FRACTURE OF THE OS SUFFRAGINIS.

By F. Blakeway, M.R.C.V.S., Stourbridge.

Dear Sirs,—Seeing some remarks upon fracture of the os suffraginis in your April number, I have sent you a short note of a case that occurred in my practice some two years ago, which, if of any worth, is at your service.

I am, &c.

A bay mare, aged, the property of Mr. Ford of Kidderminster, was being "broke to harness," during which operation she was very restive, and fell down several times upon her haunches. Becoming suddenly lame in the *off* hind leg, it was with the greatest difficulty that she was got to the stable. The owner gave her a dose of physic and rested her; when, thinking all was right, she was again placed in harness, but had scarcely proceeded a mile, when her hind quarters seemed to lose all power, and now her *near* hind leg was the worst. Nevertheless, after some trouble, they got her home, and I was requested to attend. I could not detect the least indication of fracture, and thought it a severe strain. My treatment, therefore, was strictly antiphlogistic, with perfect rest. After some time, the owner would have her turned into the meadow, and she walked the distance of a quarter of a

mile pretty well, but next morning she was down, and unable to rise, and a fracture of the off hind leg was plainly perceptible. She was at once destroyed, when I found the os suffraginis of *both* hind legs fractured, but the divided portions of the *near* one were not in the least displaced, nor could the fracture be detected until all the surrounding parts were removed from the bone. The fracture in that of the off leg was both transverse and longitudinal; the latter commencing in the centre of the articulations, both superior and inferior; and extending outwards, superiorly, and inwards, inferiorly, so that at the transverse fracture, which was at the lower third of the bone, they did not meet by a quarter of an inch. In the near leg the fracture was also transverse and longitudinal, the latter commencing superiorly, but extending to only two thirds of the bone where the transverse fracture existed.

The opinion I formed was, that fracture without displacement had taken place at the time the lameness first showed itself.

HISTORICAL AND CRITICAL REMARKS ON NASAL POLYPUS.

By J. Gamgee, M.R.C.V.S., London.

(*Continued from p.* 200.)

SYMPTOMS OF POLYPUS IN NASO.

These may be more or less severe, as in all other diseases. The size and situation of the tumour may be such as to endanger the animal's life, the alarm being given by threatening suffocation. This is an important fact, so important that it may lead into error, and, as such, I wish to show that asphyxia may really depend on nasal obstruction, brought about very differently than by a fleshy mass growing within its cavity. As in man, there may be congestion of the mucous membrane, or deformity of either the bone or the septum nasi, hypertrophy of bone, or even *osteoporosis* and abscess in the sub-mucous areolar tissue, all of which will cause more or less difficulty in respiration. D'Arboval says, that in glandered horses epistaxis may occur, and blood-clots form and lead to an obstruction of the nasal cavities. I think there is not much fear that such an accident will happen, but as we are now discussing the chapter of acci-

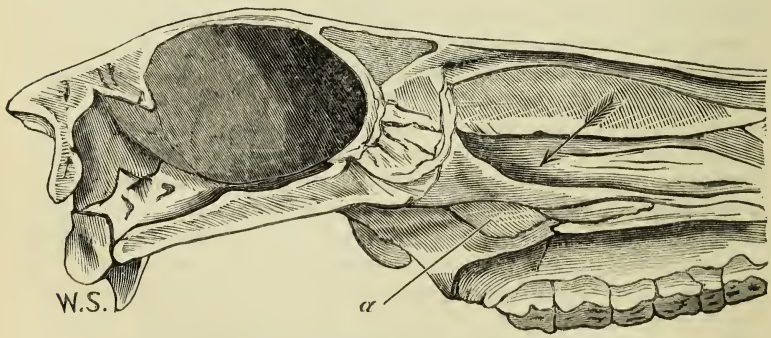
dents, we feel assured our readers will experience much interest and a little surprise perhaps at the following case, which is graphically related by the discoverer of the rapidity of the blood's circulation in his 'Repertorium' for 1843, at page 13, and entitled, "Hard Breathing in a Foal."

It occurred in the Veterinary School of Stuttgart.

"In September, 1842, a countryman brought a two-and-a-half-year-old colt to be examined for difficulty of breathing. It was since the preceding summer that the symptoms had presented themselves; the owner knew nothing about it antecedent to this time, as he had not bred the foal, but bought it the preceding year. The breathing was difficult, audible, and stertorous; when quiet, it was slightly affected, but very apparent on exertion; at the same time there was a thick mucous secretion from both nostrils, but principally from the left. There was no swelling of the throat, nor of the submaxillary space; the Schneiderian membrane also appeared healthy, and the nasal sinuses sounded hollow on percussion. After repeated examinations to ascertain, whether a collection of pus existed in the guttural pouches, or if there existed any other disease of throat, &c., I observed that upon expiration no current of air could be felt from the right nostril, and on introducing a flexible catheter it only reached as far as the posterior naris, whilst on the left side it readily entered the throat and œsophagus.* On stopping up the left nostril with tow, the animal became very oppressed, and tried to breath through his mouth. It was thus discovered, that far back in the nose, on the right side, there was an obstruction to the current of air, and as it had long continued, we decided, that it was rather a polypus, than an inflamed swelling, or an abscess. The proprietor gave the colt to the college, and it was destroyed.

"On a cadaveric inspection, the mesenteric and other groups of lymphatic glands were found swollen, but besides this nothing else abnormal existed in either the abdominal or thoracic cavities. The throat was also found to be free from disease, the obstruction to the breathing consisting in a closure of the left posterior nasal opening (Choanna) by a normal (though anomalous, J. G.) outgrowing continuation of the pituitary membrane, which was spread across it from side to side. (See Fig. 2, *a*.)

Fig. 2.



* A reference to woodcut will show that the artist, as in the preceding case, has unfortunately reversed the figure, thus showing the obstruction in the *left* instead of the right nostril.

"This was evidently a congenital anomaly inducing abnormal respiration, though it had not been observed, or had been hidden by the vendor at the time of sale. Had this membrane been cut across, or pierced by a trocar, the impediment to breathing would have been removed. At the commencement, however, it appeared that the evil existed on the left side, the discharge here being greater, a fact explained by the mucous secretion from the throat and trachea, issuing through the one, whereas usually it comes through both nasal cavities."

Polypus of the nose can, therefore, be confounded with other nasal obstructions. We have already noticed that it may give rise to symptoms similating glanders or chronic ozœna, and many other diseases, as has been shown, may be mistaken for it. Lastly, we may mention that obstructions in other parts of the aerial passages are likely to be confounded with nasal polypus.

A correct diagnosis is then sometimes difficult, but always important. The prognosis is generally favorable, as may be inferred from the cases cited, and the methods of treatment, which we shall now enumerate.

Treatment.—We can establish as an axiom that an operation is always indispensable. Two operations may on some occasions be expedient, namely, tracheotomy and the extirpation of the polypus. Tracheotomy is to be performed as usual. There are three different plans, however, resorted to to eradicate the tumour, they are: evulsion and twisting, ligature, and excision, with or without cauterization.

Rychner and D'Arboval, among others, recommend evulsion. It will be seen above that M. Tears, surgeon to a regiment in France, had recourse to it as a last resource; he first grasped the tumour with a bandage, and much damaged the pituitary membrane and turbinated bones; the horse eventually did well—be it remembered, excision had been tried in this instance without effect. In human surgery the extraction of polypi by means of forceps is the usual mode. Miller, like others, says: "Care is taken to apply the forceps accurately to the neck of the tumour, so as to ensure removal of the entire mass; and gentleness is used, so as not to endanger evulsion of bone. The forceps are well toothed, firmly jointed, and secured by a pin between the blades, so as to prevent them passing each other during the twisting movement. . . . . Sometimes forceps considerably curved are useful in reaching small, soft polypi, which not unfrequently grow from the upper and front part of the nares, and which the ordinary instrument passes by."

Elsewhere Miller recommends what might be useful in animals as well as man. "After the nostril has been finally

cleared, the use of an astringent is advisable, such as a solution of zinc, nitrate of silver, alum, or matico, with a view to prevent reproduction, and restore the mucous membrane to a sound state."

Ligature has, so far as we know, never been tried with much success in animals. D'Arboval very justly says, that it is extremely difficult to perform such an operation. Some persons recommend trephining the bones at the root of the pedicle, but how can one exactly ascertain where this is. If it can be reached from the nostril, why not prefer the next mode of operating, which is, perhaps, the best, and, we may say, the one in common use? we mean—

Excision.—Mr. Varnell very effectually operated on his case in America, and Messrs. Bowman and Dickinson furnish us with further proof of the efficacy of this plan. The question of slitting up the nostril, or performing tracheotomy, is to be only considered in individual cases. There are two modes of cutting the polypus out; the one by slicing it away, the other by cutting at once through the pedicle. The latter is preferable, where it can be practised, but should the surface of attachment be large, or adhesions exist, as in the case recorded in the 'Instructions Vétérinaires,' perseverance will be needed to get it away by piecemeal. M. Tears succeeded in bandaging and using evulsion; I doubt if a second attempt would prove so successful. The hæmorrhage consequent on these operations will sometimes excite the fears of the surgeon. There is generally no danger to be apprehended, but if a great loss of blood should occur, then plugging the nose with tow or cotton wool, and cold ablutions to the parts will be all that is needed. Persons might sometimes be inclined to try—

Cauterization.—Astringent injections may be used with any of the former operations, but caustics on the whole are objectionable. Whereas Celsus recommends excision with a sharp instrument of iron, and the application afterwards to the part of a tent smeared with some styptic. Galen, in his 'Isagoge,' in place of the latter recommends scraping of the roots. Cauterization, as an independent operative procedure, has often been recommended. It is of very ancient date, for Vegetius, in his 'Mulomedicinæ,' speaks as if veterinary surgeons principally depended upon the actual cautery for the extraction of polypus. The potential cautery has also been recommended for deep-seated polypi, such as touching them with a stick of nitrate of silver, or with sulphuric acid, the chloride or butter of antimony, or the nitrico-oxide of mercury. Such practice, however, on the whole, is not commendable.

We have now accomplished our task, leaving many things yet to be desired to be said in further explanation. Our object, however, has not been to write a monograph on nasal polypus, but simply to review the leading features of the disease, and to do this we have consulted both the ancient and modern history of our science. We have done so because there appears to be an increasing tendency to disregard the works of others. Nothing can be more blameable, as nothing so forcibly illustrates the productions of narrow minds. It has ever been our belief that no discovery in medicine at the present day originates spontaneously. Novelties now are but the development and growth of germs incubated centuries ago. They are germs, like the seeds of plants, possessed of a dormant life, a vitality which slumbers till some one possessed of more than ordinary genius, or if not, spurred on by deep-rooted curiosity, unfolds the mystery imbedded for years between the folds of old parchment, or in perhaps the more secure hiding place—the bosom of tradition.

Upper Woburn Place, *March* 16, 1855.

DOCKING, OR AMPUTATION OF THE TAIL OF THE HORSE.

By the Same.

Mayor, the simplifier of human surgery, a title as grand as it is expressive, says in his preface: "We must deplore the patients of those practitioners who are satisfied with what exists, and who make it their duty to remain faithful to eruditely exposed traditions, to learnedly introduced usages, and to habits scientifically erected into doctrines, for the exercise of our beautiful profession, and for the greater good of suffering humanity."

"Simplex sigillum veri,"

words as indelibly engraven on our minds, as they are on the stone under which lie buried the ashes of their immortal author, Boerhaave, are those which sum up the doctrines to guide us in the practice of surgery. We have been born to venerate such an adage, and if it may seem that the subject chosen to promulgate our views be not a happy one, we trust to convince our readers, that, enemies to barbarity, and lovers

of progress, we are Mayor's disciples and pilgrims to Boerhaave's shrine.

The consultation of most veterinary works, English or Continental, and the practice we have seen adopted, *here and abroad*, to cut horses' tails off, have afforded us abundant and undeniable proof that "it never consisted of more than the cutting off a portion of the stump with brute force, and the cruel application afterwards of a hot iron to the small artery of the tail."*

My father, Mr. Joseph Gamgee, who for the last thirty years has been in the habit of docking horses, here or in Italy, has learned by his long experience that the best mode of performing the operation is as follows:

A groom walks up to the horse's head, standing in his stall, —for it is best not to disturb the animal,—whilst the tail is prepared. This preparation is merely the separation with the tooth of a comb, or a probe, or simply with the fingers, of the hairs at the part where the tail is to be docked. The line of demarcation, by the separation of the hairs, is then made perfectly distinct by the latter being properly tied upwards and backwards. The groom then holds up the near fore leg, and an assistant holds the tail straight out behind, and with a *methodical* closure of a *sharp* docking-iron, the horse loses the end of his tail without perceiving it; the only movement generally effected is that of bending his back, and momentarily shrinking. Never will a horse attempt to kick. His foot being now let down to the ground *he has to suffer no more pain*, the ligature which has fixed the hairs is undone, they are allowed to fall in their natural position and then tied together *below* the stump, rather closely up to it, but not over it, and drawn as tightly as will admit of its not slipping off unless pulled away. The morning after the operation, the tail is loosened, the clot, or eschar on its cut surface, is not looked at or interfered with, the outer hairs are carefully combed out, and the drops of blood which have dried on them cleared away, and the horse is ready to go to his ordinary work.

We have a splendid lithograph in our portfolio, which strikingly depicts the barbarity and danger attending the use of the actual cautery in this operation. With blinds over the horse's eyes, a side line on his leg, a stout farrier's twitch on his nose, and a halter on his head, the sensible and frightened animal is pulling back, excited and furious, nearly sitting on his haunches, whilst the *red hot ring of iron* is being applied to the raw stump, previously powdered over

* Mayhew's edition of 'Blaine's Veterinary Art,' p. 587.

with resin. The smoke, and odorous fumes, are blinding the operator, who is in as awkward a fix as the poor horse himself. The print we allude to, although a masterpiece, but faintly represents the reality; and, as I one day was mentioning my father's practice to a veterinary surgeon, he exclaimed, "Ours is certainly dangerous work, and with the best care, assistants or operator stand a chance to have their brains knocked out." I must mention that this was pre-eminently a practical man, and all practical men, here or abroad, have until now seared in docking: at least so far as we have learned, with one exception. And it is also a practical, as well as scientific man, for whom we have the greatest reverence, that said he had been in the habit of tying *over* the stump, and securing some tow between the hairs, but the practice was not found to answer in all cases. My father has often told me that he has heard of persons tying *over* the stump, and thus inducing gangrene of one or more joints of the tail, for the pressure requisite to stop the coccygeal arteries in this way is considerable; whereas, when the hairs are tied *below*, it is the *natural hæmostatic*, consisting firstly in retraction of the and formation of a *temporary clot*, and secondly of a *temporary plug*, that comes into operation.

We have seen tetanus resulting from docking by the usual method, and have heard of several cases of sloughing away of several of the coccygeal bones. We are well aware that a simple prick may cause tetanus, but it is rather strange that to my father such accidents are unknown, because the healing by granulation under a natural eschar must be more in order than the *separation* of what has suffered by the hot iron, and *reparation* by exuded plastic lymph.

If simplicity is the undeniable seal of truth and humanity to be held in view by all operating surgeons, then there is no doubt that a clean cut is no severe operation, and tying of hair unassociated with difficulty or sensation. Some persons may say it is most humane to leave tails as they are; so it is, but men will have their horses docked, because in the sight of the world a horse with three inches taken off the end of his tail carries it better, and it looks lighter. We have heard horsemen of all kinds repeatedly say, "that horse will be all the better for havinga little of his tail off," and we could not but agree with them.

But, lastly, some diseases may necessitate amputation of the tail. We admit this is extremely rare, but we have had to do it ourselves, and not only in the horse, but have seen it resorted to for a peculiar disease of the coccygeal bones in cattle. In the ox, we are aware that nothing can

answer better than the actual cautery, and as the operation is as rare as amputation of one of his extremities, we think it of little importance; but in the horse, had it to be performed only once in a practitioner's lifetime, the simplest and best mode should be adopted; just as if a veterinary surgeon were called upon to tie the carotid or the femoral artery, or to perform the Cæsarian operation, he would be expected to do it as a man of science, as a surgeon, and not empirically, as in the days of yore.

RUPTURE OF THE HEART OF A PONY.

By J. M. Parker, M.R.C.V.S., Birmingham.

Gentlemen,—Should you think the following case sufficiently interesting for insertion in your valuable journal, it is entirely at your service.

On Feb. 23d, of this year, at 4.30 p.m., my attendance was requested to a pony which had run away with a gig, and, while going very fast down hill, had come into violent contact with a cart coming in the opposite direction. When he struck the wheel of the cart, with his off shoulder, he was observed to rear up from the force of the shock, and then to fall down. The harness being removed, it was found that he could not get up, and when lifted on to his legs, he could not stand. Upon my arrival, he was quietly lying on his near side in the street, and, on further examination, I found the symptoms present to be as follow:

Respiration very quick, but not laborious; pulse 55, and weak; visible mucous membranes pallid, especially the buccal. Thinking that his inability to rise might proceed from fracture of the neck of the scapula, or of the humerus, I manipulated both fore extremities, but could not discover anything uncommon. The animal remained lying down, quite passive, and there was apparently no acute pain.

While meditating what was the best plan to adopt, I observed that his breathing became rather laborious, and the expression of his eye haggard. On feeling his pulse, it had increased in rapidity, and was decidedly more feeble. My diagnosis now was, internal hemorrhage, the result of the rupture of a large vessel in the vicinity of the heart, and I gave the owner no hopes whatever of his recovery. He proposed to have him destroyed, but I did not anticipate that he would live long, and, moreover, I wished to see how soon

he would die. However, the officer of the Animal's Friend Society came up, and begged that his life might be ended, in spite of my conviction that his end was easily and rapidly approaching. He was then killed, about one hour after I first saw him. During this time he had never moved, and his pulse at last was almost imperceptible at the jaw, but very quick.

I made a *post-mortem* examination at 9.30 the next morning.

He was rising five years old, and rather fat. The abdominal viscera were perfectly healthy. Upon excising the diaphragm, to get a view of the chest, a quantity of coagulated blood was seen, and upon a careful examination of the heart *in situ*, I saw that the pericardium was ruptured on the right side, and that a clot of blood was affixed to the base of the right auricle. The trachea was then divided about nine inches from its entrance into the thorax, and the heart and lungs carefully removed. On farther investigation, I found that the right auricle was separated from the ventricle horizontally along its base, and the process which rather overhangs the ventricle was lifted up, as it were, completely. It was evidently a case of rupture of the muscular structure, and must have been the immediate result of the violent shock he sustained just as the auricle was full. The lesion was confined to the outer wall, and the length was about an inch. I presume that the blood which escaped ruptured the pericardium.

This is the only instance of "broken heart" in the horse that ever I saw, or heard of, and the novelty of the occurrence has induced me to send this rough sketch of it, hoping that it will prove acceptable to the profession.

I remain, &c.

STRAY LEAVES FROM MY CASE-BOOK.

By M.R.C.V.S.

3. PUNCTURED WOUND. — FRACTURED RIBS. — PROTRUSION AND AMPUTATION OF OMENTUM.

April 3d.—The injury has arisen from the animal becoming restive, and plunging against the shaft of a cart that was passing. A laceration of the common integument covering the 14th to the 18th rib exists, and from the wound a portion of omentum about the size of the palm of the hand protrudes,

proving that the diaphragm is perforated. On examining the wound with a probe, it is found to extend backwards and downwards, and the probe can be readily passed into the abdominal cavity. Still further examination shows that a simple fracture of two of the ribs has taken place. The loss of blood has not been great.

Amputate the protruding omentum; bring the edges of the wound in apposition by means of sutures; and keep the surrounding parts constantly fomented by means of rugs dipped in hot water. Diet to consist of mashes, and patient quiet.

4th.—Some little constitutional excitement being present, but not more than might have been anticipated, take blood 8lb. from the jugular, and give a dose of laxative medicine.

5th.—Bowels responding. Continue the use of the fomentations, and let the diet be still restricted to mashes.

6th.—The wound has assumed a somewhat unhealthy aspect, and the discharge from it is offensive to the smell. Dress with a saturated solution of the nitrate of potash, and continue the use of the hot rugs. Insert a rowel in front of the chest, there being a tendency to effusion.

8th.—The appearance of the wound has become more favorable, and the discharge from it is not so offensive. Dress with a mixture of equal parts Ol. Tereb. et Ol. Olivæ, and continue to employ the warm and moist rugs. Give Aloes, ʒij, in ball. Diet as before.

10th.—The suppurative action has been set up, and all constitutional disturbance has been allayed. Treatment as before ordered.

12th.—Pus of a laudable character is now discharged from the wound, and a little appears to have gravitated underneath the skin. Let exit be given to it by the introduction of a seton below the lesion. During the night the animal has lain down for the first time since the accident, and his general health appears to be good. Allowed a little corn with the mashes. Keep the wound clean by means of affusions of tepid water, and dress as before.

18th.—The animal has continued to progress favorably since the last report. The wound is contracting, the pus emitted laudable in character, and no unfavorable symptom is present. General treatment as before ordered, and the diet may now be plain.

25th.—Remove the seton, and dress the orifices with a solution of the sulphate of zinc. The wound continues to heal, and otherwise the animal is doing well.

After this date little was required in the way of treatment:

nature had already effected a partial union of the broken ribs, and which needed only a further length of time to perfect.

This case is remarkable for the little constitutional disturbance which took place, considering the nature of the lesion, and more especially the rent made in the diaphragm. It is probable that the omentum plugged up this opening and became adherent to the edges of the laceration, thus effectually preventing the passing out of intestine, for had such not been the case, it is more than probable that the animal would have been sacrificed to strangulated hernia. We have also evidence that the omentum itself can be excised with but little danger to the animal.

4. PNEUMONIA.—HEMORRHAGE FROM NOSTRILS.—DEATH.

The animal, a six years old bay gelding, was admitted into our infirmary labouring under the ordinary symptoms of inflammation of the lungs; namely, laborious respiration, accelerated pulse, injected state of the visible mucous membranes, languor, and chilliness of the extremities. Bloodletting having been resorted to somewhat freely, and a gentle laxative administered, the diet also restricted to mashes, and the extremities hand-rubbed and bandaged, much relief was afforded, and it was anticipated that he would quickly become convalescent. An irritable cough, however, remained present after the acuteness of the attack had been removed, for which a seton was passed over the larynx, and occasionally a ball containing

Aloës Extract, ʒij;
P. fol. Digitalis, ʒij;

was given. The animal's appetite never returned completely, and at times much languor was expressed. On removing the litter from under him one morning much blood was observed on the ground, and on carefully watching the animal during the day a recurrence of the hemorrhage was seen to take place from the nostrils, the horse losing nearly two gallons of blood. By the constant application of cold water the bleeding was stopped. After this much debility was evinced, the appetite became more capricious, the cough irritable, and the pulse continued above the healthy standard; occasionally he would lie down, but only for a short time. These unfavorable symptoms were followed by fetor of the breath, and a copious discharge of frothy discoloured mucus from the nostrils mingled with pus; and at length he died, about a month after the attack.

On a *post-mortem* examination being made, the membrane lining the pharynx and larynx was found intensely inflamed; that of the Eustachian cavities was ulcerated, and the right side was full of pus mixed with blood. The lungs were hepatized, and an effusion of serum had taken place into the chest.

STRICTURE OF THE OS UTERI IN A COW.

By Charles Hall, V.S., Yoxall, Burton-on-Trent.

On Feb. 25th, I was requested to see a cow, the property of R. Loverock, Esq., Linthurst, which had been in labour *twenty-six hours*. Upon my arrival, I found she was much exhausted, and that the labour pains had nearly left her. I directly made an examination, and found the os uteri impermeable; at the same time, the rumen was much distended with flatus. On account of the exhaustion present, I resolved at once to administer stimulants, and also to give the Ergot of Rye a trial, which I exhibited in ʒij doses every hour, in ale, combined with carminatives: but it had not apparently the least effect. At nine o'clock, a.m., I saw not the least chance of her getting over the act without help. I then determined to cut through the ligaments or bands which encircle the inner margin of the os uteri; and having done this with great difficulty, it afforded only slight relief, for it was more like cutting bone than elastic tissue. I could even now only get three fingers in; but this giving me more room to work, with a curved knife, fitted to my finger, I made four incisions, one above, one below, and one on each side. With great caution I had to proceed, for the cow was now making violent throes, but I had more room, and, with the assistance of five men, I brought the calf into the world alive.

The cow becoming very feverish, and being in high condition, I gave her

℞ Magnes. Sulph., ℔iss;
Sulphur, ℔ss;
Zinzib. Pulv., ʒij;
Ol. Croton., gtt. xij. M.

There being yet much distension of the rumen present, with violent straining, and pulse 85, I administered Spt. Ether. Nit., ʒij, et Tinct. Opii, ʒj, every three hours.

Feb. 27th.—Pulse 80. Physic has operated well. Very little distension of the stomach, and no straining, except when voiding the urine. I ordered Tartar Emetic, ʒij, Potass. Nit., ℥ss, Digitalis, ʒij, Camphor, ʒij, to be given in gruel twice a day.

Feb. 28th.—Pulse 75. Continue in use of the fever medicine. She "cleansed" to-day.

March 1st.—Pulse 65. Bowels still relaxed; appetite tolerably good; and she drinks gruel freely.

March 2d.—Pulse natural, and appetite returned, and otherwise she continues to do well. I consider her to be convalescent.

P.S.—While I have been writing this, I have heard of the death of a cow from the same cause. No assistance was afforded her. It is the general opinion of the agricultural community in this county that veterinary surgeons know very little about cattle, believing that, at a college, they confine themselves to the study of the horse only. I hope that such ideas will be eradicated from their minds before long.

SEVERAL CASES OF FRACTURE.

By R. P. Foster, Spalding.

Having seen in some of the past numbers of *The Veterinarian* several cases of fracture, I am induced to send you a case or two that have occurred in my practice.

On the 13th of April, 1853, I was requested to see a three years old mare that had, two days before, fractured her shoulder. The accident happened in the stable, but no account of it could be given by the groom, unless that it was done by the animal getting across a bar which parted the stalls. She was visited the morning after the accident had occurred by a member of the profession, who considered the case a hopeless one. The owner not feeling satisfied with this opinion was the cause of my visit. On my arrival, I found the humerus to be fractured, and the shoulder enormously swollen. I could therefore give the owner but little hope of cure, and told him further, that it would be attended with a great expense. He said he did not mind that, if I would undertake the case. I therefore did so, and had the animal at once slung in the stall by means of a pair of waggon shafts, which I have often found to be a very convenient

plan of slinging horses; subdued the inflammation as quickly as possible by the frequent application of cooling lotions, and, as nothing could be done with splints or bandages, I supported the leg as well as I was able, and left nature to do the remainder. At the end of five weeks my patient became tired of her situation, and one day got her head at liberty, and extricated herself from the slings a little before I intended she should. The parts being of course very weak, by her favouring the limb, the sinews became contracted, so much so that she could scarcely get along her leg, which was much bent. Then came teniotomy to our aid. After having had the mare cast, I divided the flexor tendons, and placed the leg straight. The ends of the tendons, by this act, were three or four inches apart. I then had an iron attached to the shoe by means of a staple, which I could remove at pleasure, and had her again placed in her stall, but not in the slings, although afterwards I thought it would have been better, as she got to lie down with her iron on during the latter part of the time. I saw the mare the other day, and no one could tell that anything had been the matter with her except that a little thickening remained where the tendons were divided. She is in foal, and her owner says she works as well as any horse he has got. This is the second case of fractured shoulder I have at work, but the first being fractured in a different place, caused the mare to step short for about six months after resuming her work.

Another case which I might mention was a mare that ran away on taking fright at a donkey, and, not being able to turn a corner, went across a grip where there was an old thorn hedge on the other side, and trying to stop herself, her fore feet went with such force against the stumps of the hedge that one of the bones of the knee was fractured. I was attending another horse at the time upon the farm, saw it done, and was quickly on the spot. With some difficulty I got her to the stable, put her in slings at once, splintered and bandaged the part, and applied a lotion. When she recovered the knee was larger than the other, but she worked well for several years after, and then died very suddenly; I should think from some affection of the heart, although I had no chance of seeing her, as she was well at night, and dead in the morning.

The fourth and last case I shall allude to was a bullock, who, when the owner was applying a dressing for lice, jumped at the gate, and got his hind leg fast between the bars, and fractured the metatarsus just above the fetlock. I

was immediately sent for. When I arrived, I at once saw what had taken place, but the animal being very wild, I could not come near him. Every time he stirred the ends of the bones could be heard grating against each other. Indeed, I was afraid the bones would come through the skin before I could get a boot made, which I lost no time in doing. I had it made of very stout leather, ten inches deep, and wide enough to admit of tow and a bandage, and to lace on the outer side of the leg. I then had two iron bands, three-quarters of an inch wide, and a quarter of an inch thick, rivetted to the boot, about an inch and a half from each other, and reaching two inches below the leather, with holes for a strap. After lacing the boot, I placed a bandage round it, and then the strap, which brought the foot more into the right position, where it remained until well, which was in a very few weeks, and with little trouble, as the animal was left almost to take his chance.

Remarks.—I am quite aware that many cases of fracture would not repay the owner for the trouble and expense incurred; but, if the animal be young and valuable, it would be always worth a trial. We had an entire horse that travelled with us for several years, that was known by the name of "the broken-thighed horse." The accident happened when he was young. It generally happens, however, that before we are called in it is too late; at least such has been the common case with me. I have been in practice fifteen years, and have had as many cases of broken bones, but am sorry to say that I was not always so fortunate as to arrive just before the bones became separated; and frequently I have found the ends thereof through the skin, and the surrounding parts so lacerated that the animal has been destroyed at once by my advice.

Since the foregoing division of the journal was sent to press, we have received a communication from Mr. Blakeway, informing us that he was sent for on the 18th ult. to see a horse belonging to J. B. Tierney, Esq., of Stourbridge, which fell suddenly very lame whilst being driven in his gig, and the owner thought he had sprained his fetlock while going over a slight grip, but on examination he found the os suffraginis fractured, and inspection after death showed the bone to be broken transversely and longitudinally in nine separate pieces.

Facts and Observations.

ON CHIRETTA.

It will be remembered that not long since Mr. T. Hurford, V. S. 15th Light Dragoons, directed the attention of the members of the veterinary profession to the combination of gentian with aloes as a purgative for the horse.

Although there is nothing new in the union of the vegetable bitters with this extract, yet we feel convinced that full justice has not been done to Mr. Hurford, inasmuch as, in this country at least, we have conjoined the pulverised root of the European gentian, and not the powder of the *chiretta* or *chireata* plant, which is as generally employed in India as a bitter, as gentian is in Europe. This has arisen from the fact that at one time the chiretta was called *gentiana chirayta* and classed among the gentians, from which it has been lately removed by Mr. Don.

It is met with in a dried state, tied up in bundles. The plant being taken up while in flower; the flowers and roots are attached to the stems, which are two or three feet long, slender, and of a brownish colour. Every part of the plant abounds in a bitter principle, but more especially the root, which is readily abstracted both by water and spirit. By evaporation, an extract may be obtained from the watery infusion.

It is a tonic and stomachic, and has been thought to promote the secretion of bile; the fæcal matter becoming more yellow under its use. In India it is very commonly used by the practitioner of human medicine, who attributes to it the effect of overcoming costiveness, and considers it of great value in dyspepsia, from its possessing laxative properties.

The stems of this plant were analysed by M. M. Lassaigne and Boissel, and found to contain: resin, yellow, bitter matter, brown colouring matter, gum, malic acid, malate of potash, chloride potassium, sulphate of potash, phosphate of potash, phosphate of lime, silica, and traces of oxide of iron. Of these, the available principle is the bitter extractive.

ON MATICO.

We are obliged to Mr. F. de F. Elkes for his specimen of matico leaves.

In South America and Mexico this name, it appears, is applied to the leaves of several different plants. Those which are before us very closely resemble dried sage leaves. The true matico or matica, so highly esteemed in Peru, Dr. Martius believes to be a species of phlomis. The tree grows in the interior of Peru, also on the other side of the Andes. Its leaves are said to possess marvellous medicinal properties. The preparation for use among the Indians is very simple; the leaf is dried and finely powdered, and the dust when sprinkled on wounds is said to effect cicatrization very speedily. The Indians use an infusion of the fresh leaves as an aphrodisaic, and also attribute to them the power of arresting arterial hæmorrhage, even if a large vessel be wounded.

"The matico was first brought into notice by Dr. Jeffreys as a styptic in leech-bites and wounds of arteries, and has been found efficacious in many obstinate cases of bleeding, as from the nostrils. Its *under* surface, which is reticulated with veins, and covered with hairs, should be applied, as it is probably on this structure that its utility chiefly depends. Its infusion and tincture have also been recommended internally in affections of the urinary organs, on which, by its stimulating action, combined with a little astringency, it would appear to produce a salutary effect.

"Its properties, by the analysis of Mr. Morson, appear to depend chiefly on its resin and volatile oil, its aqueous extract having only a slightly bitter and astringent taste.

"It has also been prescribed in discharges of blood from the urethra and rectum, as well as in uterine hæmorrhage, and has been used as an injection in leucorrhœa, and as an external application to hæmorrhoidal affections, both as an ointment and as a lotion."—*Dr. Royle.*

THE ACTION OF HYDROCYANIC ACID ON DIFFERENT ANIMALS.

The following has been communicated to us by Mr. W. J. Hinge, M.R.C.V.S., Hounslow.

On Friday the 15th of April, 1855, he gave to a dog fifteen drops of hydrocyanic acid, which caused death in a few minutes. The acid was taken from a stoppered bottle, but which had been some time before opened.

On the following day, he was requested by Col. Edmonds, at Hounslow Barracks, to destroy a young goat which had received an injury, and became paralised. He administered about two drachms of the acid, the remainder of the contents of the bottle used for the dog the day before, but it had not the least effect. The animal was then left by him for the purpose of obtaining more acid, and on his return in about twenty minutes, he found him quite composed, and eating the grass around where he was lying. He then gave him a full ounce, the bottle not having been opened before. The animal laid quiet for about a minute, when, on his moving him, he got at some fresh grass, which he began eating as before. Mr. Hinge remained with him some time to see if the acid would take any effect, but finding it had none, he opened the carotid artery.

The strength of the acid used for the dog, and the goat in the first instance, was 2 per cent. *real* acid; that of the second acid was 4 per cent., or Scheele's strength.

POISONING OF TWO COWS BY BLACK HELLEBORE.

The cows were the property of Mr. Westwood, of Stow, near Downham Market, Norfolk. They had for some time been shut up in the yard, living upon dry food, having nothing but hay, with half a peck of sliced carrots *per diem* each. The plant was thrown by Mr. Westwood from the garden into the yard, he not thinking at the time that the cows would eat it; but on looking at them a few minutes afterwards, he saw they were eating it very ravenously; and having heard of its poisonous properties, he removed what remained from them, or they would no doubt have eaten it all. This was in the afternoon; and early next morning our immediate attendance was requested, the messenger stating that one cow was dead, and the other very ill. On arriving, we perceived, from the symptons presented by the living cow, that some poisonous agent was in full operation; and on stating this to the owner, he remembered having given to the cows the before-named plant on the previous afternoon.

The *symptoms* were purging, rumen distended with gas, saliva dribbling from the mouth, animal constantly lying down and getting up, and when made to move uttering a low groan. This cow also died in a very short time, being about twenty-four hours after she had partaken of the hellebore plant.—*Communicated by Mr. Hammond.*

Extracts from British and Foreign Journals.

ON THE HEREDITARY DISEASES OF HORSES AND CATTLE.

By W. F. Karkeek, M.R.C.V.S., Truro.

(*Continued from* p. 162.)

The foregoing examples are mostly diseases of structure; we will now consider others where the blood may be considered as taking a part in hereditary transmission.

II. (*a.*) *Tubercular Phthisis*, or consumption in cattle, will afford an interesting case of this sort; and although presumably a structural disease, yet it is one that is evidently produced from a vitiated state of the blood, arising either from defective food, or from living in a contaminated atmosphere. From either of these causes, the blood is rendered unfit for adequate nutrition, and the lungs become diseased from the deposition of tubercles on its surface in consequence. These deposits are much more commonly produced in cattle than is generally imagined. During the early periods of life the vital principle of stock of this description is but too frequently taxed by resistance required to be made against cold, wet, and insufficient food, causing mal-nutrition. The organic materials of the body are not persistent, but are more or less prone to decay, becoming effete or worn out in a limited period of time. But, in the healthy body, there is a reparatory process continually countervailing this decay, by the deposition of new materials whose vital affinities are energetic, and able to maintain the integrity of the textures. This renewal depends on the supply of healthy chyle to the living structures, and, if it be defective in quantity or quality, mal-nutrition takes place, and the fibrin of the blood, instead of acting as a plastic material for renewing the worn-out parts, becomes a source of tubercles, and the lungs speedily suffer, and that oftentimes to a considerable extent.

Breeders of cattle may rest assured that the offspring of a consumptive cow is almost certain to inherit a disposition to the disease, and, when this is the case, it is quickly induced by any cause that may reduce the healthy vigour of the system, such as exposure to cold and wet, causing congestions and chronic inflammations—or, as previously stated, from being insufficiently fed.

It is a question, too, well worth considering, whether this

tuberculous predisposition may not be frequently induced *in embryo*, from the neglect of the necessary conditions required for the healthy support of the cow. Sir James Clark has directed the attention of the public to this circumstance. He says, "that a state of impaired health of the mother, whether constitutional or acquired, and particularly if caused by imperfect digestion and assimilation, is as productive of a tendency to scrofula and consumption in the children as if it had descended by hereditary transmission."

(*b.*) The tubercular disease in horses is not near so common as in cattle. In young horses it is sometimes induced by imperfect and insufficient food, rapid growth, and exposure to the vicissitudes of the weather. The mesenteric glands and mucous follicles of the small intestines are most generally affected in these cases—becoming enlarged and filled with purulent and tubercular matters,—but in old horses the lungs are the parts chiefly attacked, the symptoms assuming a glanderous character, such as nasal discharge, short cough, defective appetite, and general loss of condition.

The next example is a disease of a scrofulous character, and, like unto the previous one, is evidently produced from a vitiated state of the blood.

(*c.*) *Scirrhous Tumours in Cattle.*—These tumours are generally seen in working oxen and bulls, old or full grown. They make their appearance without any apparent pain or constitutional disturbance; at first confined to the thyroid glands, and finally attack the submaxillary and parotid. The disease is known to the farmers in the west of England under the name of *choke-ill*, as, in the latter stages of the complaint, there is great difficulty of swallowing experienced, arising from the roots of the tongue and the throat becoming affected. When these symptoms appear, the animal quickly dies.

A section of one of these tumours displays several abscesses, containing purulent and sometimes fetid matter, enclosed in fibro-cartilaginous cysts, and which never discharge themselves like unto healthy phlegmonous abscesses. Our case-book furnishes us with the history of many instances of the disease, proving unquestionably its hereditary character.

The last two examples of hereditary disease are of a scrofulous character, and are recognized as constitutional disorders, continued from one generation to another, through the medium of the blood. However difficult it may be to imagine or conceive a fluid like the blood, ever in motion and change, being capable of hereditary taint, yet is it not really

more difficult to understand than a character or peculiarity conveyed by descent to any part of the solids of the body?* Such is Dr. Holland's opinion: "The blood," he says, "has vitality in every sense in which we can assign it to the solids,

* Of the instances given of the blood concerned in transmitting hereditary taint, it will be remarked that they are perfectly in accordance with the transmission of hereditary likeness, occasionally observed in breeding, and which is also even more difficult to conceive or imagine. We allude to the curious statement lately brought forward by Mr. James M'Gillavry, of Huntly, V.S.—*that when a pure animal of any breed has been pregnant to an animal of a different breed, such pregnant animal is a cross ever after, the purity of her blood being contaminated in consequence of her connection with the foreign animal.* The two following cases may serve as examples:[1]

"A pure Aberdeenshire heifer was served with a pure Teeswater bull, by which she had a *first cross calf*. The following season the same cow was served with a pure Aberdeenshire bull; the produce was a *crossed calf*, which, when two years old, had short horns, the parents being both *polled*."

Again, "a pure Aberdeenshire cow was served, in 1845, with a cross bull,—that is to say, an animal produced between a first-cross cow and a pure Teeswater bull. To this bull she had a cross calf. Next season she was served with a pure Aberdeenshire bull: the produce was quite a cross in shape and colour."

The following striking example occurred in Cornwall:—A half-bred mare, the property of Mr. Blamey, Caragloose, in the parish of Veryan, strayed from the field, and was served by a donkey: the produce was a mule. The following year the mare was taken more care of, and was served by a half-bred horse, yet the progeny bore a strong likeness to the previous mule, in the reproduction of the upright mane, marks, and even colour and form.

Is this not a striking lesson to breeders who are in the habit of putting their heifers the first time to any mongrel bull, not being aware that the purity of her second stock would be contaminated by the first connection?

The explanation offered by Mr. M'Gillavry, of the phenomenon, is ingenious, and consistent with acknowledged facts in physiology.

"By the formation of the after-birth (*placenta*) a connection is established between the mother and the living creature (*fœtus*) in her womb, through which the latter is continually drawing supplies from the mother's blood, for its growth and maintenance. But there are good grounds for believing that, through the same channel, the mother is as constantly (though, doubtless, in much less quantity) abstracting materials from the blood of the fœtus. Now, is it at all unreasonable to suppose that the materials in question may be charged with (or have inherent in them) the constitutional qualities of the fœtus, and that, passing into the body of the mother, and mixing there with the general mass of her blood, they may *impart* those qualities to her system."

"The qualities referred to must *in part* be derived by the fœtus from its male parent, and be to that extent identical with his. The *distinctive peculiarities*, therefore, of that parent may thus come to be engrafted on the mother, or to attach in some way to her system; and if so, what more likely than that they should be *communicated* by her to any offspring she may afterwards have by other males?

[1] For further example read Dr. Harvey's pamphlet on "Cross Breeding." (Blackwood and Sons, Edinburgh and London.)

and, under some views, it is the portion of the animal frame which is especially so endowed. Its first appearance in the *area vasculosa* of the germinal membrane of the embryo is prior to the existence of those very organs which, after birth, chiefly minister fresh materials to it; and though undergoing constant change, *it has this in common with the animal solids, and with those equally which are most frequently the subjects of hereditary affection.*"

Our next example involves a similar question, and is an instance of a disease that can scarcely be conceived in any other manner than as circulating in the blood, and conveyed to different parts or organs of the body.

(*d.*) *Rheumatism in Cattle.*—There is much that is curious in the tendency to rheumatic affections so frequently observed in the ligaments and synovial membranes of the joints of cattle, and likewise in the fascia or cellular coat of the muscles. This disease is attended by stiffness and inability to move, pain on pressure, and more or less febrile symptoms. Sometimes it attacks one or two joints, and occasionally shifts its action to the others. This tendency of the disease to shift from one part to another is evidence of constitutional affection, and dependent on temperament and state of the circulating fluids.

Among the causes which predispose to rheumatism must be placed an hereditary tendency and temperament of the animal, for, although we find it prevalent in cold, marshy districts, in exposed places, and during the spring and autumn months, when there is the greatest vicissitude of heat and cold, yet why the same agents* should produce rheumatism in one case, bronchitis in another, pleurisy in a third, and dysentery in a fourth, and so on, can only be explained by supposing that each individual has some particular organ or organs which are more prone to disease than other parts of its organization.

(*e.*) *Chronic Dysentery.*—There appears a strong tendency

* M. Dupuy relates some cases in proof of glanders being hereditary. "A mare," he says, "on dissection, exhibited every appearance of glanders: her filly, who resembled her in form as well as her vicious propensities, died glandered at six years old. A second and a third mare and their foals presented the same fatal proof that glanders is hereditary."

It must be obvious that all *causes*, as well as the *effects* they produce, must have an intimate relation to the condition of the living frame, and that those which might be quite inefficient on one animal will be more powerfully active on another, owing to the state of vital energy at the time. The effects produced by various animal and vegetable exhalations on different horses fully illustrate this position,—producing glanders in some, farcy in others, and grease and ophthalmia in very many.

in cattle to take on this disease. A scanty allowance, with exposure to cold or wet, or anything else that may disturb the balance of the circulation, will induce it when the hereditary predisposition exists. Mr. Youatt was of opinion that the practice of breeding from the nearest affinities induced this disease, and cites as an example that of the *Dishley long-horned breed* of cattle, which were notoriously bred in this manner, not only by Bakewell, the originator of the breed, but also by his successors,—and they were so highly disposed to dysentery that it proved the element of their destruction. That the breeding too far, and too incautiously, "in and in," will produce a weakness of constitution that predisposes to dysentery, is very probable. A delicacy of temperament and form, with a tendency to arrive quickly to maturity of bone and muscle, is attained by breeding in this manner; but with these valuable properties a weakness of constitution is engendered that renders the cattle less hardy, and less capable of withstanding irregularities of living, and exposure to vicissitudes of weather.

A question presents itself here with reference to "in and in" breeding, that, in such instances, whatever hereditary tendency to disease might exist, is certain to be developed in the progeny in its most marked and aggravated forms; and on the same principle will cross-breeding tend to reduce, or, may be, remove the disposition altogether.

The next examples of hereditary tendency to disease, and the last we shall adduce, are those connected with the eyes of horses and cattle. They also, very probably, depend on some peculiar state of the blood, involving the same question as gout in the human subject, though perhaps more dependent on occasional exciting causes from without.

(*f.*) *Constitutional Ophthalmia in Horses*, a disease of a peculiar inflammatory character, showing itself at intervals, and especially at a certain period of life—generally from three to five years old. When the hereditary proclivity exists, it is easily excited by miasms arising from crowded, dirty, and imperfectly ventilated stables. Our case-book and memory furnish us with some scores of cases in proof of this. One of these is connected with a horse called "Katerfelto," that served mares in this district some thirty years since. He was a favorite stallion with the farmers, and got a very extensive and, with the exception of the strong constitutional tendency to specific ophthalmia, an excellent stock. Notwithstanding so many years have elapsed, yet the disease could be accurately traced from him to his descendants, handed down through the female line, some ten years since.

(*g.*) *Specific Ophthalmia in Cattle* is not so common a disease as with the horse, but it has the same periodical character, and will disappear and return until it reaches its natural termination—blindness. The constitutional nature of the disease being once correctly ascertained, the farmers usually fatten the animal for the butcher, or at least they should do so, as its hereditary character is as certain as it is in the horse.

(*h.*) *Gutta Serena*, commonly known as the "glass eye," is a disease characterised by a preternaturally dilated and motionless pupil, the consequence of palsy of the optic nerve, or of the *retina*. It is fortunately a disease of rare occurrence, and is supposed to be produced by determination of blood to the head. But cases sometimes occur in which there is no discernible cerebral affection. A case of this kind happened to a horse of our own, and on making inquiries some time after of the breeder, the dam was acknowledged to be similarly affected. Mr. Baker, V.S., of Reigate, alludes to a case in *The Veterinarian* of a foal which was born with gutta serena; and on making the necessary inquiries, the mare's eyes were found perfect, but the sire was proved to be thus diseased; and, what was still more worthy of remark, not one of his colts escaped imperfect vision.

Connected with the subject of constitutional ophthalmia, instances sometimes occur where the disease has been lost in one generation and makes its appearance in another. This was remarkably so in the case just recorded of the "Katerfelto" stock. The gout in the human subject will at once occur as a familiar example of this singular variety in the general law of the perpetuation of the species. The breeder sometimes meets with analogous cases in the striking and strongly-marked features of an animal being lost in one generation, and re-appearing in the second or third.

Connected with this singular anomaly in another variety observed in the transmission of disease—that of a number of the offspring being affected in common with some particular disease, of which there has been no certain instance on the side of either parent.

Instances of this kind can be adduced with respect to *curbs* and *spavins*. A thorough-bred horse, "Royal William," served mares in Cornwall for some five or six years. He was a large, powerful horse for a thorough-bred, and was perfectly free from curbs. We have examined more than a hundred of his stock, and believe that seventy-five per cent. had curbs, varying from three years old and upwards. This horse, getting out of repute in consequence, was sent to

Australia, and we understand that there, as in England, he got a curby race.

Mr. Cartledge, V.S., stated, at a meeting of the Veterinary Medical Association a short time since, that a thorough-bred stallion, called "Fifty-three," begot foals in his locality, and of these no less than twenty-six became afflicted with curbs before they were twelve months old, and yet this horse had no symptom of the disease. At the same meeting, Mr. Varnell, V.S., stated, that an entire horse, called "Monarch," had served mares in the county of Norfolk for some years, and on his colts being broken—some at three, and others at four years old—the majority were affected with spavins, splints, and ring-bones, yet he himself was entirely free from any of these diseases.

These curious exceptions to the law by which hereditary diseases are supposed to be governed, may be referred to the condition last mentioned, of the revival of a hereditary likeness absent in one or more generations, and familiarly known to breeders under the term "breeding back." The explanation may not be considered a satisfactory one, for it must be confessed that we have but very obscure notions of some of the laws which regulate variation in animals. That such laws do exist appears highly probable from the numerous instances of the constant recurrence of similar phenomena under given circumstances, which seem to preclude their dependence upon mere accident, and the most striking one is the law which governs the extent to which variation is allowed in the animal economy. There appears to be a limit beyond which change or variety cannot be induced, the original type of the species being ever present, and in constant opposition to their continued progress. This is particularly observed in instances where great refinement in breeding is practised. When the stock has been got up to what is commonly considered the highest perfection, a tendency to degenerate, or return to the original standard, is sometimes observed, and the greatest difficulty is experienced in combating against this inherent property. Many a breeder can certify to this, that the nearer he approaches perfection in breeding, the greater is the danger of retrograding. But that which is considered perfection with reference to man, such as early ripeness of bone and muscle, with disposition to acquire fat—qualities which eminently characterise our high-bred flocks and herds—are, after all, but a state of degradation with reference to nature, since these extraordinary characteristics could never arise or be perpetuated in a wild state under any imaginable combination of accidents.

It will be unnecessary to point out to the agriculturist the important practical relations which the subject of hereditary disease bears to his pursuits, it being one that cannot fail to enter as an element in his estimate of the purity and value of an animal's breed, and to form an object of special regard in the breeding of stock. It will prove to him, also, that breeding is not so dependent entirely on chance as many persons believe. Events may, and doubtless will, arise to baffle human foresight; but even these will serve as beacons for future guidance, if but fairly considered and understood. Discrepancies of this character are but too commonly set down as the caprice of nature, which may oftentimes be easily accounted for if such persons will take the trouble to search and examine for themselves. As a golden rule in breeding, the old Yorkshire adage, "that like produces like," may be safely acted on at all times, and should never be lost sight of by the breeder.

ON THE STRUCTURE OF THE MUCOUS MEMBRANE OF THE ALIMENTARY CANAL.

By Erasmus Wilson, Esq., F.R.S.

(*From the 'Medical Times and Gazette.'*)

Having recently had occasion, in the preparation of a new edition (6th) of the 'Anatomist's Vade-mecum,' to re-examine the mucous membrane of the alimentary canal, and make some drawings to illustrate its structure, I beg to lay the results of my survey, with the accompanying drawings, before the Profession. The importance of the mucous membrane of the alimentary canal, in its physiological and pathological relations, might alone warrant the publication of any researches made into its structure; but, as I have been led to conclusions differing from those generally entertained, their publication becomes a duty which I owe to the profession, and the more so as I have merely broken ground in a field of investigation which I hope will be explored by others younger than myself, and having at their disposal more leisure for such pursuits. The latter circumstance, deficient leisure, I must plead as an excuse for the imperfection and limited extent of my present observations.

The mucous membrane of the alimentary canal presents, on its surface, two apparent differences of structure which have caused its distinction into alveolar (figs. 1, 2); and

villous (fig. 3); the former being found in the stomach and large intestine, the latter in the small intestine.

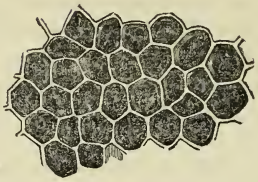
The alveolar mucous membrane is so named from presenting a surface made up of minute depressions in the form of pens or cells, separated by septa: these depressions being the alveoli. The villous mucous membrane, on the other hand, is characterised by projections of its surface, the projections being termed villi.

These terms are simply expressions for the idea which is given by a coarse observation of the surface, and have little reference to the structure which gives rise to such appearances; for if we adopt the idea of distinguishing the mucous membrane by the projections developed on its surface, as in the case of the villi, we ought, correctly, to term the alveolar membrane reticulated, distinguishing the prominences on its surface and not its depressions; for the prominences or septa are elevations of the membrane analogous to the villi, the alveoli being merely the spaces between the septa and the floor of the alveoli, the ground surface of the membrane. The term "reticular," therefore, seems to me preferable to "alveolar," for several reasons, namely, in the first place, as conveying the idea of prominence or development from the surface, and therefore corresponding with the term "villous," applied to another part of the same membrane; secondly, as truly representing the structure, for the septa do, in reality, form one continuous network over the whole surface, the areolæ of this network being the alveoli; thirdly, as supporting the analogy between the alimentary and other mucous membranes ordinarily described as "reticulated," for example, that of the gall-bladder and vesiculæ seminales; and, lastly, as extending the analogy of structure to inferior animals, as the ruminant, wherein one division of the stomach is termed, from the presence of a magnified representation of the same structure, "reticulum;" and to the camel, where the deep spaces or alveoli between the septa are so remarkable, and perform so important an office in relation to the habits of the animal.

RETICULAR MUCOUS MEMBRANE.

Stomach.—In the stomach, as already said, the mucous membrane is reticular; the raised portion of the membrane forming a fine net-work (reticulum) over its whole surface, and constituting the septa, the areolæ of the net-work being the alveoli. The amount of projection of the reticular frame,

Fig. 1.



A portion of the mucous membrane of the stomach magnified seventy-five times. The alveoli measured $\frac{1}{200}$ of an inch in length, by $\frac{1}{250}$ in breath; the width of the septa being $\frac{1}{1000}$ of an inch. The smaller alveoli measured $\frac{1}{250}$ of an inch in length, and $\frac{1}{300}$ in breadth. The trifid or quadrifid division of a small artery is seen at the bottom of each alveolus, and in the depressions between the divisions of the artery, the apertures of the gastric follicles; two, three, or four in each depression.

in other words, the depth of the septa, is about $\frac{1}{600}$ of an inch; and their breadth, that is the thickness of the septa, divested of epithelium, about $\frac{1}{1000}$ of an inch. In structure the reticulum is composed of a fold of the limitary membrane, containing the transparent granular substance of the surface of the corium and a plexus of capillary vessels. The capillary plexus of the reticulum is single, a disposition which probably determines the thickness of the septa; its meshes are large and open, and the vessels flexuous and serpentine in course. The border of the septum is formed by a capillary vessel, which sometimes runs in a straight direction, and forms an even rim to the mouths of the alveoli, like that of a honey-comb; but more frequently makes abrupt curves and loops, which project before them the limitary membrane, and give rise to flat papillæ. These flat papillæ are chiefly found at the angles of the reticulum, and their existence in numbers gives a fringed appearance to the rims of the alveoli.

The areolæ of the reticulum or alveoli are polyhedral in figure, for the most part hexagonal, and slightly oblong; about $\frac{1}{600}$ of an inch in depth at the sides, and somewhat deeper in the middle, and larger at the brim than at the fundus. Divested of epithelium, they measure in diameter at the brim between $\frac{1}{200}$ and $\frac{1}{250}$ of an inch in length, by $\frac{1}{250}$ and $\frac{1}{800}$ in breadth, and at the fundus something less. The floor is uneven, and presents in the centre the axis of a minute artery, from which two, three, or four, commonly three, capillary vessels pass off to make their way to the base of the reticulum, and constitute its plexus. This little capillary axis naturally forms as many ridges in the floor of the alveolus,

leaving shallow depressions or foveolæ between them; and at the bottom of these foveolæ, generally three in number, are seen the openings of the gastric follicles. The openings of the gastric follicles are oval in shape, about $\frac{1}{2\,1\,0\,0}$ of an inch in long diameter, and disposed irregularly in the foveolæ, two or three in each; so that the entire number of gastric follicles opening into each alveolus would amount to from six to ten or twelve.

Large Intestine.—The surface of the mucous membrane of the large intestine presents this most obvious difference from that of the stomach, namely, smoothness,—a difference which is as apparent to the naked eye as to the eye armed with the microscope. With the microscope, moreover, we are struck with the symmetry of the reticulum and alveoli, by the greater breadth, lesser degree of prominence, by the flatness and evenness of the septa, and by the elliptical form and shallowness of the alveolar spaces.

Fig. 2.

A portion of the mucous membrane of the large intestine, magnified 75 times. The alveoli measured $\frac{1}{2\,5\,0}$ of an inch in length, by $\frac{1}{4\,5\,0}$ in breadth; the septa between the alveoli measuring $\frac{1}{6\,0\,0}$ of an inch in width. The alveoli are less regular in form and shallower than those of the stomach; and in the bottom of each is a gland with a central excretory aperture. In some of the larger alveoli there are two glands.

The septa measure about $\frac{1}{6\,0\,0}$ of an inch in breadth; and the alveoli $\frac{1}{2\,5\,0}$ of an inch in length, by $\frac{1}{4\,5\,0}$ in greatest breadth. The septa contain a plexus of capillaries, smaller in size than those of the septa of the stomach, and having minute areolar spaces. The brim of the septum exhibits a small, chain-like plexus, composed of two or three of these capillaries lying parallel with each other; the meshes of the plexus are oblong, and about equal in breadth to that of the capillaries. The alveoli are shallow, the floor being slightly convex, and occupied by a mucous gland having a central excretory aperture; in some of the longer alveoli there are two glands and two excretory openings.

Immediately around the solitary glands, the alveoli and reticulum undergo some modification; the former are larger, measuring $\frac{1}{175}$ of an inch in length, by $\frac{1}{250}$ in breadth; and deeper,—so deep, in fact, that their floor is no longer visible. The septa are thinner, measuring $\frac{1}{900}$ of an inch in breadth, and furnished with a single capillary, instead of the triple chain of the rest of the membrane (fig. 7).

(*To be continued.*)

ON THE PANCREATIC JUICE.

By M. Kroeger.

(*Abridged from an article in the 'British and Foreign Med.-Chir. Review.*)

The ingestion of food exercises great influence over the secretion of the pancreas, it becoming much increased in quantity almost immediately after meals, and reaching its maximum within about half to three quarters of an hour after the meal, when it is about six or ten times greater than it had been before the ingestion of food. Water has not the same effect: on the contrary, when this is taken simultaneously with solid food, it prevents the latter from causing so evident an increase. The concentration of the pancreatic juice appears frequently diminished in the same degree as the quantity is increased; but this phenomenon is not a constant one, and at all events the absolute quantity of solid substances is greater after meals than before.

Concerning the *physiological action* of the juice, its power of transforming starch into sugar is not doubted. According to the author's experiments, 1 gramme of the fresh juice transforms within half an hour, under the influence of a temperature of 35° C. 4·672 grammes of dry starch into sugar; and as 1 gramme of fresh juice contains 0·014 grammes of pancreatic ferment, 1 gramme of this ferment would transform 333·7 grammes of dry starch. If we assume, with Frerichs, that an adult man requires daily about 490 grammes (= 15 ounces nearly) of starch to compensate the daily loss of carbon, the quantity of pancreatic juice necessary for the transformation of this starch into sugar would be less than 105 grammes, while the quantity actually secreted amounts to more than 5000 grammes. Kroeger is, therefore, of the same opinion with Bidder and Schmidt, viz., that the pan-

creatic juice cannot have as its *principal* function the transformation of starch into sugar. One of the functions, he considers to be the promotion of the constant interchange of fluids within the body, in the same manner as Bidder and Schmidt have thought it probable concerning the saliva, and also Grunewald and Shroeder respecting the gastric juice. It further appears to him that an intimate connection exists between the secretion of the stomach and that of the pancreas—namely, that the hydrochloric acid secreted by the former is, after having performed its part, neutralized by the soda of the latter, thus again forming the chloride of sodium previously disunited by the process of secretion. In favour of this theory Kroeger observes that the hydrochloric acid contained in 1 kilogramme of the gastric juice, secreted by the dog in twenty-four hours, amounts to 0·305 grammes, while the soda contained in the pancreatic juice secreted in twenty-four hours is calculated at 0·237 grammes, *i. e.*, very nearly the equivalent (0·259), corresponding to 0·305 grammes of hydrochloric acid.

ON THE ORIGIN OF SUGAR IN THE LIVER, AND ON THE NORMAL EXISTENCE OF SUGAR IN THE BLOOD.

By M. L. Figuier.

(*Abridged from an article in the 'Chemist.'*)

M. Claude Bernard demonstrated, for the first time, in 1848, that the liver of man and animals contains a certain quantity of glucose. Pursuing the study of this fact, unknown until our time, this physiologist was led to consider the liver as the organ producing sugar in animals. According to him, the liver would possess not only the function of secreting the bile, but also that of producing sugar, a substance destined afterwards to contribute to the maintenance of the respiration. The same experimentalist applied himself to demonstrating that the sugar which exists in the liver does not necessarily arise from the saccharine or feculent aliments introduced into the stomach, but that it is formed in the animal organism itself, independently of all vegetable alimentation. Finally, having attentively studied the characters of the new function which he attributes to the liver, and which he designates under the name of glucogenia, M. Bernard has ascertained that the secretion of sugar in the liver coincides with the digestive period. It is what the

author calls "*the functional oscillations of the secretion of the liver.*" As a consequence of the foregoing, I have proved that the same secretion diminishes with abstinence or fasting and finally disappears entirely by inanition.

The experiments of which I give a summary in this note, have not confirmed this physiological theory.

I commenced by submitting to chemical examination the soluble matters contained in the liver.

The soluble products contained in the liver of the ox, which formed the special subject of my researches, are, independently of the blood—

1. An albuminoïd matter which greatly resembles the compound studied and described by M. Mialhe, under the name of *Albuminose*.

2. Glucose.

3. A small number of mineral salts, among which chloride of sodium predominates.

Our author then proceeds to give a description of the manner in which those principles were demonstrated by him to exist; after which he says—

Having satisfied ourselves, in this manner, of the positive presence of glucose in the tissue of the liver, but persisting always in the idea that the sugar could not arise from a secretion proper to that organ, but that it had its sole source in the alimentation, it remained for us to investigate whether the sugar which is found mixed with the blood in the liver would not also be met with in the blood taken from other parts of the body, and, in this case, to compare the quantities found in the general mass of the blood with that which the hepatic tissue contains.

Although almost all authors, and almost all chemical and physiological authorities, were opposed to the idea of the presence of glucose in normal blood, we thought that we might succeed better in this research if we observed the two following precautions: 1. Not to wait for the spontaneous coagulation of the blood, as had previously been done, thinking to simplify the operations of chemical analysis. 2. To operate on liquors rendered slightly acid, in order to be secure from the action which might be exerted by the carbonate of soda, existing in the serum of the blood, on the small quantity of serum which it may contain.

It is, doubtless, owing to the observance of these two precautions that we succeeded in rendering evident the existence of a certain quantity of glucose in normal blood, not simply as several physiologists had done, in consequence of the administration of feculents and during the digestive

period, but in ordinary conditions,—that is to say, at a long time after the last meal, and without attending to the alimentation of the animal. Our experiments were made on the blood of man, the ox, the sheep, and the rabbit.

The following is one of the processes which enabled us to prove very easily the presence of glucose in normal blood.

At the moment it is drawn from the vein, the blood is beaten up, in order to defibrinise it. The quantity to be operated on is then weighed, and three times its weight of alcohol at 36° is added to it. After a few minutes, the blood is completely coagulated into a clot of a beautiful red, by the simultaneous precipitation of the globules and of the albumen of the serum. It is then strained through a piece of cambric muslin and pressed, and the residue is washed with a little alcohol. The liquid when filtered passes through almost colourless, and manifesting an alkaline reaction. A few drops of acetic acid are added to the liquid, so as to communicate to it a slight acid reaction, and it is evaporated to dryness on a sand-bath. Towards the end of this operation we observe the separation of a greenish matter, which is no other than the last remains of coagulated albumen. The residue of this evaporation, redissolved in distilled water, contains the glucose, united with some mineral salts, among which chloride of sodium predominates. This liquid powerfully reduces Barreswil's liquor, and furnishes, by boiling, an abundant yellow or brick-red precipitate of hydrated suboxide of copper. In order accurately to determine the quantity of glucose contained in the blood operated on, it is sufficient to proceed, with Barreswil's liquor properly filtered, to the determination of the exact quantity of sugar which this residue, weighed and redissolved in water, contains.

We succeeded, by means of beer yeast, in extracting carbonic acid and alcohol from 2½ litres of ox blood collected in the slaughter-house.

As regards the proportion of glucose thus normally contained in the blood, we found in the blood of a rabbit 0·57 per cent. of glucose; the liver of the same animal contained 1 per cent. of the same product. In ox-blood, 0·48 gr. per cent.; in that of man, 0·58 gr. According to our analyses, in equal weight the liver would contain scarcely twice as much sugar as the blood contained in other parts of the body.

It results from the experiments, of which a summary has just been given, that we can no longer admit the localization of the secretion of sugar in the liver. That which had especially contributed to the acceptance of this opinion was the fact regarded as indisputable, of the non-existence of

glucose in the mass of the blood during normal conditions. It was in consequence of experiments justly well remarked, in which we had seen animals submitted for entire months to an alimentation exclusively composed of meat, preserve in the liver appreciable quantities of sugar. We see at once that the results which we have just given deprive these experiments of a great portion of their signification; but a few words will be necessary to show this truth in its full light.

We have shown that the blood of man, and that of domestic animals, contain sugar, and that the liver, comparatively, contains scarcely two or three times as much sugar as the blood itself. In this difference, however, there is nothing astonishing. The hepatic organ is essentially an organ of depuration of the blood. The various products of digestion, brought by the vena porta from the whole surface of the intestinal tube, undergo, in this voluminous gland, a true depuration, which has the effect of rejecting the materials useless to nutrition, and of retaining the essential products of digestion. It is not, therefore, surprising that sugar figures in the liver in larger quantity than in the blood. All the glucose arising from digestion is concentrated in it, to be afterwards distributed by the super-hepatic veins into the general circulation. When it has arrived in the mass of the blood, it is gradually destroyed by the continued effect of the respiration, and, consequently, it diminishes in quantity every moment.

From the facts which we have observed, it follows that M. Bernard's experiments, who has found sugar remain in the liver of dogs subjected to an exclusively animal diet, can no longer be adduced in support of the glucogenic function of the liver. I have shown that there exists nearly a half per cent. of glucose in the blood of the ox and the sheep collected at the time these animals are killed for public consumption. Now, the meat of these animals contains vessels, these vessels contain blood; thus the flesh of beef and mutton, which had served for nourishing the dogs in M. Bernard's experiments, contained sugar, and there was administered, without knowing it, the very compound which had afterwards to be sought for. The quantity of glucose introduced by this way was, doubtless, small, but it was constant; and the liver being an organ of condensation and accumulation as regards glucose, it is not surprising that the proof of its existence in this organ was found after death.

Our experiments enable us to explain very simply the peculiarities on which the study of what was called the glu-

cogenic function had thrown some light. M. Bernard had been led to acknowledge that the appearance of sugar in the liver coincides with the digestion, and he has insisted much on this point. If it be admitted, with us, that the sugar is introduced into the liver only by the products of alimentation,—that is to say, by feculent or saccharine elements, this coincidence of the appearance of sugar with the digestive period will no longer be surprising.

We conclude, to sum up, that the liver in man and in animals has not received the function of forming sugar, and that all the glucose which it contains in its tissues comes from without,—that is to say, from the nourishment.

THE SHIPMENT OF HORSES TO THE CRIMEA.

Mr. Editor,—Although the subject is becoming "stale," and certainly not "profitable," as I hope to show by the sequel, yet it is, nevertheless, no less important now than it ever was. The Earl of Albemarle took the trouble, in the House of Lords, last week, to call the attention of the government to the Hull plan of shipping horses, and although the superiority of it is so well known, and acknowledged by those who really understand in what it consists, yet it was deprecated by those high military officers, who, at the same time that they stated that it was not applicable for cavalry purposes, admitted that they had only heard of it, and had had no experience to guide them for such an opinion. In the discussion which ensued, upon the motion of Lord Albemarle, Lord Lucan inveighed against the future employment of sailing transports instead of steam-vessels, and hoped that the government did not intend to adhere to the former conveyance. His lordship stated that the experience of the last campaign showed that three weeks on board a transport unfitted horses for work for a considerable time after their landing, and that many of the horses of the 8th Hussars and 17th Lancers, on disembarcation, were found to be affected with fever in the feet. The Duke of Cambridge agreed with the noble lord in condemning the conveyance of cavalry by sailing transports, when steamers can be obtained, both for the superior facilities and efficiency the latter afforded as compared to sailing transports. His Royal Highness adverted to the 'Himalaya' having been only a fortnight on her passage with horses from this country to Varna, whereas, the average passage of sailing vessels was 39 days. Lord Panmure, in reply to Lord Lucan, observed that steam-vessels were, no doubt, superior in their conve-

nience and fittings to sailing vessels, and, from the short duration of the voyages, caused much less suffering to the animals conveyed by them, but remarked, "if the noble earl imagined that the government could command the services of as many steam transports as they chose for sending out the animals required for the army, he was labouring under a serious delusion, from which his mind must be disabused."

It is asserted by all military authorities that the horses and men, with accoutrements, &c., *must* be shipped in the same vessel. I have no knowledge of military matters; but I have not heard any argument adduced that is so conclusive as to make it imperative that it *must* be so. In a letter which I received from an officer of the 17th Lancers, on board the 'Pride of the Ocean,' when going to the East, last year, he says, "When it began to blow, the confusion and destruction were awful, the horses struggling and plunging, many of them down; the soldiers all sick, and not one of them well enough to assist them in their forlorn condition; six of the horses were killed, and consigned to the deep next morning." Now, had these horses belonged to me, I should have thought it far more profitable to have had one Hull groom on such an occasion than all the sick soldiers of the 17th Lancers. Although it is evident that a great amount of mischief might be avoided by sending horses to the Land's End per rail, instead of shipping them at Woolwich, and which consists in no less than the saving of a month more or less at sea to horses that have to get to the Crimea, yet we find in *The Times* of Tuesday, the 20th of March, "That 110 non-commissioned officers and gunners of the Royal Artillery embarked, yesterday, with 100 horses, at Woolwich, for a passage in the London and Hackbut transports for the Crimea, and that the total number of transports taken up by government for the conveyance of cavalry to the Crimea is 21, with a measurement of 14,700 tons, which are all to be ready to embark in 21 days from this date." I am old enough to recollect that in the last Peninsular war a considerable number of horses were rendered useless from their having fever in the feet when landed, and Professor Coleman, the principal veterinary surgeon to the army, in a report he was called upon to make as to the cause of this serious disorder, stated that it arose from the horses being kept so long a time on their legs on board our ships, and he recommended that the horses should, in future, be shipped upon ballast instead of boards, and that their shoes should be taken off, so as to allow their soles to receive support from the sand or

substance upon which they stood. Now, if such a precaution were necessary in a voyage to Spain, how much more must it be required in a voyage to Constantinople, although it has been entirely overlooked or disregarded? With the sad experience of last year before us—and I am inclined, from what I have heard, to believe that the mischief was far greater than has come to light—and with all the endeavours of disinterested individuals, many of them possessing practical experience, the government is about to consign 7,500 cavalry horses to the same risks and treatment of a system which, because it was the one adopted for sending horses to Spain more than 40 years ago, *must* be the one to be employed for sending horses to Constantinople now! At this season of the year, when gales of wind are prevalent, these poor horses are to be six weeks on their legs, if they are fortunate enough to have even a fair average passage, and, about the end of June, the survivors of them may be sufficiently recovered—if not attacked with some incurable disorder, like fever in the feet—to commence a preparation of exercise and drill to fit them to carry a dragoon, who, when accoutred, is some 20 stone in the saddle, to the field of battle. Let us hope, rather, that the war may long be over before our brave soldiers' lives are endangered by trusting them to steeds whose physical powers must be unequal to their duties from sheer want of condition. I have no doubt that if this subject, so fraught with important results, had been fairly considered by practical men, and who would have investigated the capabilities of steam-vessels, and the appliances that might be brought into requisition—such, for instance, as making an arrangement for a portion of the horses to lie down, say every third or fourth night—that with very little extra room the horses might have been conveyed to the Crimea, not only in safety, but in a condition for immediate use. In the year 1836, the late Lord George Bentinck taught us the use of vans for carrying race horses with facility from place to place, and now it seldom happens that a race horse travels in any other way. Necessity induced his lordship to try the experiment, by taking Elis from Goodwood to Doncaster in that year, and by which means only he succeeded in carrying off the St. Leger. However, if such a horse had been in the hands of the government, reasoning from their *modus operandi*, he would never have reached his destination till after the race.

Yours, &c. W. J. Goodwin.

Hampton Court.

[With these facts before us, we may reasonably ask—of what use is Mr. Roebuck's Committee?—Ed. *Bell's Life.*]

THE VETERINARIAN, MAY 1, 1855.

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

THE ANNIVERSARY MEETING OF THE PROFESSION, AND ELECTION OF VETERINARY EXAMINERS.

IT will not be denied that the representative system, as existing in the institutions of our country, incurs an increase of responsibility in proportion as it is based upon an extended suffrage, and that it reaches its climax of accountability when the suffrage is universal. Probably, of all the varied trusts that are confided to the keeping of a representative council, none surpass in importance the selection of proper persons for the carrying out of the enactments upon which depend "the weal or the woe" of the electors themselves. Were it possible for the importance of this duty to be increased, it would be so when the interests of the community at large are made to suffer by the inefficiency of an executive, supposing such to belong exclusively to a professional body. In the charter by which the practice of veterinary medicine is raised to the dignity of a profession, the principle of universal suffrage is not merely recognized, but brought into full operation; and as such, the council is, or, at the least, ought to be, the true exponent of the incorporated members. Whether it really does embody the sentiments of the profession as one compact whole may be questioned, because as yet the number of practitioners who have assembled, year by year, to record their votes in the elections, has been too few to warrant the belief that, were more present, the same result would be produced. In this, however, it is apparent that the governing power is free from blame, and that the fault, be it great or little, rests with the electors themselves. It is not our intention on this occasion to discuss this part, in particular, of the subject, yet we have thought right to refer to it, seeing that within a few days of this number

of our journal being in the possession of our readers, the time will have arrived for the members of the profession again to exercise the important privilege which the law has placed in their hands. May we hope to see a larger assemblage than heretofore? And may we still further hope that our friends "North of the Tweed" will give proof, by their presence, that the interests of the body, politic and corporate, are especially cared for by them? Be this as it may, we call upon the country members of England to be at their post, and to exercise their rights; even if such should lead to the introduction of some new blood into the representative body. If they think it needeth it not, then good testimony will be given that the Council is the *true* exponent of the profession, and as such, its proceedings will carry with them the greater weight.

We have already alluded to the importance of appointing an effectual executive, and to this we now return. Our readers are well aware that our respected predecessor in the conducting of this Journal, was at the time of his death a member of the Board of Examiners, a position he was well qualified to occupy, from his scientific and literary, as well as his practical acquirements. Composed, as the court is, in part, and rightly so, in our opinion, of men of high repute in the science of medicine, Mr. Percivall, from his knowledge of descriptive anatomy, gave important assistance to the anatomical section. His loss was felt to have created a void not easily to be filled, and as such the appointment of his successor required, at least, mature consideration. The time had arrived when the whole question of appointing examiners called for investigation, with a view to the adoption of those means which would secure for the future the selection of efficient persons for these offices. One of the objections to the present mode might be got rid of by the Council taking steps to obtain a list of names, from which it would have to choose. This, however, will not completely meet the exigency of the case, as we shall show by and by.

There are those among us, resident in the provinces it may be, whose scientific acquirements, and we might add, laudable

ambition, well fit them for the discharge of these duties, and who would have but simple justice done them by their appointment. It may be argued, that practitioners, as a class, generally lose after a few years that kind of knowledge which is absolutely necessary to be found in an examiner. This we would grant, and, for the same reason, would urge that the greater necessity therefore exists for the Council to ascertain who among us has ability and determination to render himself fully competent for the duty by renewed study. We give our hearty concurrence to a scheme which was suggested in our hearing a short time since, namely, that as vacancies occur in the Board, *due notice should be given to the whole profession* of a want of a new member, and candidates should be invited to send in their names and testimonials of qualification. We must not, however, stop here, as we have previously remarked, for if so, little good would follow. Where a thorough reform is needed, half measures invariably fail, and therefore we should wish to see adopted a modified plan of the French system of election by concours, and have the merits of the several candidates tested by all being submitted to some kind of examination, anatomical or pathological, as the case might be, orally and by writing. An eloquent author, in his "Thoughts on the War," has thus expressed himself, with reference to appointments in general, "Let merit be *everything;* and wealth, family connexion, rank, and party be *nothing.*" Agreeing most fully with this sentiment, we would add, nevertheless, that no one should be eligible to take his seat at the board who had not been several years in practice, and whose standing in society did not warrant his occupying such an honorable position. We will not, however, discuss the details at further length, but, as professional journalists, we contend for the principle, and as such do our best to bring about this necessary change. We venture to predict that, if this system were acted upon, the profession would possess, in the veterinary portion of the Board, as it ever has done in the medical, men whose acquittal of their duties as examiners was only equalled by their

firm resolve to do full justice to each individual pupil. The labours of the teachers must be fully recognized, and their endeavours to elevate the profession by imparting scientific knowledge to the students must be backed by the examiners. The time has passed by when courts of examiners can place the hard-working and intelligent pupil who has been regular in his attendance upon the lectures, and neglected no opportunity of acquiring information, on a par with the idler who comes before them well made up for the occasion by the "man wot grinds." This has been the bane of every profession, and the remedy lies entirely in the hands of the examiners.

To the general qualifications of the gentleman who has been recently appointed as the new examiner, we make no objection. Both his position and his name will give weight to the diploma; and while things are managed as at present, there is no one that we would prefer to see added to the board.

The filling up of the void created by the death of Mr. Percivall is, however, a matter essentially different from the election of an eminent London practitioner of long standing and great respectability for an examiner. The board wants a practical anatomist, and sound physiologist, one whose scientific acquirements are based upon long-continued investigation. If we except those whose province it is to impart daily instruction in the class-room, there are but few men in the veterinary profession who possess the requisite qualifications. The court of examiners, in other scientific communities, is composed of those who are, or have been teachers, because it has been found that no men are so well suited for examiners. Teachers of veterinary science are by the charter prevented from examining their own pupils, a principle with which we fully accord. It is, nevertheless, worth while to inquire into the practical working of this prohibitory clause. There are, as is well-known, but two colleges or educational institutions belonging to our profession, one of these being in London, the other in Edinburgh. For all the purposes we have named, those schools might as well be separated by

the British channel, for the teachers of either can never become the examiners of the other. Besides this, there are no *retired* teachers to choose from, so that this clause of the charter virtually compels the profession to select its board of examiners from among those who are the least, rather than the best, fitted for the duty. The framers of the charter, in their zeal to carry out a general principle of justice and consistency, overstepped the bounds of discretion, and created a power having weakness, where they needed one possessing strength. For these reasons we would rather, as we have already said, that some well-devised scheme should have been adopted to meet the exigencies of the case, than that the Council should forthwith have filled up the vacancy. This being done, however, it remains to be seen whether the difficulties may not to some extent be removed by the court itself. If, for example, some re-arrangement of the sections cannot be made, or some member transferred from the pathological to the anatomical division of the board. Something of this kind we would recommend to the consideration of the court; and, if a transposition of the members be effected, then we do not hesitate to state that the gentleman so chosen must remember that the eyes of the profession, and the country also, are upon him, and that they will rest satisfied with nothing less than his becoming a *practical* anatomist, as quickly as circumstances will permit. Day by day he must toil in the *dissecting* room, as well as in the study, or he may be assured he will not be able to long hold the proud position he has been raised to. Rumour, we find, has already fixed on a member who is to take his seat in the anatomical chair. Should this be well founded, we believe we may congratulate our readers on the change. No one knows better what is expected from him, and none, we think, will labour more earnestly to surmount the difficulties which beset his path. We shall watch with some anxiety, and no little solicitude, the course which is adopted.

Veterinary Jurisprudence.

BOSTON COUNTY COURT.

Before J. G. S. Smith, Judge.

Captain C. T. J. Moore, of Frampton, *v.* Mr. Joseph Major, of the Horse Infirmary, London. Claim £20.

Mr. Peake, solicitor, of Sleaford, conducted the plaint, *Mr. J. H. Hodgson*, barrister, of London, the defence.

Mr. Peake stated that the defendant was the manufacturer of a patent medicine for the cure of ringbone in horses, and that it was called "Major's British Remedy." A few months ago the plaintiff's coachman purchased a bottle of this specific from Mr. Thomas, druggist, of Boston, and applied it to a valuable horse that was suffering from the formation of a bony substance at each side of one of his hind feet, and in consequence of that application the horse got much worse, and was ultimately rendered useless. The horse was originally worth £80; it was worth at least half that amount just prior to the application of the remedy, now it was worthless; but though his client had suffered a loss to that extent, he was content to lay the damages at £20.

John Dickenson deposed, I am the plaintiff's coachman. When I entered his service one of the horses was suffering from the formation of a bony substance at each side of one of the hind feet. About nine months after, I bought at Mr. Thomas's a bottle of Major's British Remedy.

[Mr. Hodgson here disputed Mr. Thomas's agency, but Mr. Thomas was called and proved that he was agent for the sale of the medicine.]

Examination continued—I treated the horse according to the printed instructions given with the bottle. First I gave cooling medicine to the horse for a week, and then I applied the remedy to the foot; a sixth part of the bottle to each side. About an hour after rubbing it in, the horse began to suffer great pain, and sloughing began. I then applied a lotion, soapsuds, and other remedies, as directed by the instructions, but the flesh fell away until the bone was laid bare, and the horse was rendered quite useless. I went up to London to see the defendant, and told him in what state the horse was. He said it was an anchylosed joint, and past the art of man to cure; and in the course of our con-

versation he also said his chemist had deceived him, and had made the "Remedy" too strong by 60 degrees. He further said that if it was kept till it was old it got much stronger; so that what was sufficient for six applications when fresh, would be enough for twelve when old. I applied about a third of the bottle at the first dressing. This was according to the directions.

[The pamphlet containing an account of the "British Remedy," with directions, was here handed to the Judge by Mr. Hodgson. The Judge having glanced over it, said the "Remedy" I have used myself on two or three occasions, and have found it very successful, and there is no doubt it is a valuable remedy when properly made and properly used. In this instance it has either been made too strong, or too much of it has been applied at one time. As far as I understand the case, there is no pretence of fraudulent intention, nor any fault found with the remedy itself. I think you might settle the case yourselves.]

Examination resumed—Mr. Major gave me a lotion for the horse, and I applied it on my return, but it had no effect.

Mr. Hodgson here objected to the case going any further, the Judge not having jurisdiction. His learned friend was bound to show that the whole course of action had arisen within the district of this court, but this he could not show, as appeared from the evidence of the last witness, who had deposed to what had taken place out of the district. This objection was made by his client on general grounds, for if called upon to defend actions in any part of the kingdom, it would be a great hardship to him.

Mr. Peake—I submit, your honour, that in this case the *sole* cause of action being the injury done to the horse, which was at Frampton at the time, that the case is within your jurisdiction.

The Judge—The material cause of action arises within my jurisdiction, but I will make a note of the objection.

J. Dickenson, in cross-examination, said there were two bony substances on the foot. They appeared before I went into Mr. Moore's service, and I had been with Mr. Moore nine months before we tried the "British Remedy." I applied a sixth part of the bottle to each excrescence, and had the directions before me while I did it. They were not ringbones, but bony substances.

Mr. W. C. Bland, examined.—I am a member of the Royal College of Veterinary Surgeons. Know the plaintiff's horse "Iodine." Was called in to see him in the winter of 1853.

He had exostoses or bony enlargements of the pastern bones of the off hind leg. There were two enlargements, one on either side of the pasterns, nearly meeting in the front, forming an irregular ringbone. The enlargements had been in existence for a length of time. They were attended with only a slight degree of lameness. Recommended that the horse should be fired, but my recommendation was not acted upon. Did not see him again until the July following. I then found his pasterns nearly covered with a mass of fungus. The common integument had been destroyed, and, to a great extent, the coronary ring, also. Was told that the injury had been occasioned by the application of "Major's British Remedy." I pointed out the improbability of my being able to do anything to make the horse again serviceable, but on being requested to do what I could for him, I excised as much of the fungus as it was practicable to do, leaving the edges of the skin healthy, hoping, by so doing, to lessen somewhat, the amount of blemish, and perhaps fit him for slow work. When I first prescribed for the horse he was worth from £30 to £40. He is now almost worthless. The active ingredient in "Major's British Remedy," I believe to be sulphuric acid, a highly corrosive and dangerous compound; if used at all, it ought to be greatly diluted.

Cross-examined—Have never used the "Remedy" myself. Have known it to be used in two other cases besides the one now before the court, in both of which it made fearful blemish, and in one lameness; the animal being sound before its application, and lame afterwards, and continued so for some months, when I lost sight of him.

Mr. Hodgson addressed the court for the defendant. The "remedy" was required to be used with care and judgment, and was not to be applied to the same extent under all circumstances. There were also conditions, as mentioned in the pamphlet, necessary to be attended to, and if they were not observed, a cure could not be expected. The plaintiff's coachman had in this case not strictly observed the directions, and he also erred in believing there were two ringbones, and accordingly had applied one sixth of the bottle to each side of the foot, whereas, as there could be but one ringbone, he certainly ought not to have applied more than half that quantity. Another circumstance that my client complains of is, that he was not informed of the state of the horse till two months after the application. It was used about the latter end of March, and it was not until the 18th May that the plaintiff acquainted him with the condition of the animal. This, Mr. Major considered very unfair. It was frequently

the case that too much of the article was applied, and harm was thus often done, but the defendant was always ready to advise and assist in such cases, and the evil effects could always be removed if the proper remedies were applied in time. The "Remedy" was of signal benefit when judiciously used, and many horses that had been turned out as incurable had been perfectly cured by the plaintiff. On the ground that there was no contract, and also that the "Remedy" was not warranted to cure in every case, and that too long a time was allowed to elapse before my client was informed of the horse's condition, I confidently rely on a verdict for the defendant.

Mr. Major examined.—When the coachman came up to town and told me about the horse, I said I should be happy to advise him what to do: I took him over to my infirmary, and showed him how we used the "Remedy;" upon which he remarked, "if that's the way you use it, I have certainly used seven times too much." I have no recollection that anything was said about the stuff getting stronger by keeping.

Cross-examined.—I decline to say what are the ingredients which compose the "Remedy." I was not brought up a chemist, nor am I a member of the Veterinary College. For 20 years I lived in America, and during that time I had a good deal of experience in the treatment of horses: in fact, I have been acquainted with horses all my life. I am a Lincolnshire man, my father having lived at Caistor. I was not brought up to the veterinary art, but I have cured horses that have been sent from the College.

Mr. Dollar examined: I am a veterinary surgeon, and have a diploma from the College of Edinburgh. I am now and have been about two years Mr. Major's foreman and manager. There cannot be two ringbones on one foot. I have used the "Remedy," and have found it to effect a cure in almost every case.

This closed the defence.

The Judge: The simple question for my consideration is, whether the directions sent out with this article were attended to by the coachman or not, and I must say he appears to be a respectable man, anxious to give the "Remedy" a fair trial, and that he followed the directions as closely as possible. That the stuff had got too strong he could not know. I shall find for the plaintiff as to the claim, and other points can be tried elsewhere.

The Defendant: We can cure the horse now.

The Judge: If you do so it will certainly be much to your credit. You had better make an arrangement with plaintiff.

The case occupied the court about three hours.

COMMUNICATION FROM J. TOMBS, M.R.C.V.S.

Gentlemen,—In the *Veterinarian* for this month, I perceive there is a communication from Mr. Moir, referring to the liability of veterinary surgeons paying one guinea per horse under the new assessed tax act. I beg to state that I was charged one guinea by the surveyor of taxes, which I appealed against, and am now assessed at the lower rate, *viz.*, half a guinea, (which duty I paid to-day to the district collector,) the commissioners being of opinion that a *diplomatized* veterinary surgeon should pay the same duty as surgeons, &c.

I hope and trust that Mr. Raddall's suggestion to form local Veterinary Medical Associations will be favorably received, and ultimately carried out by the profession, as most unquestionably much valuable information would be elicited by the members of such societies, and the veterinary body generally will be benefited by the publication of their proceedings in '*The Veterinarian*,' the editors of which I wish every success; although, at the same time, I deeply deplore the loss of the late Mr. Percivall.

I am, gentlemen, yours faithfully.

Stratford-on-Avon; *April* 18, 1855.

MISCELLANEA.

CAUTION TO VETERINARY SURGEONS.

On Tuesday evening, Mr. C. Bedford, coroner for Westminster, held an inquest at St. George's Hospital, on the body of Thomas Metcalfe, aged 35, a farrier in the employ of Mr. Rogers, M.R.C.V.S., residing at Knightsbridge Green. It appeared that the deceased was holding up the near forefoot of a horse, to enable Mr. Rogers to perform an operation called "firing," when the animal suddenly reared up, and kicked him violently on the top of the head. The deceased bled profusely, and was promptly conveyed to the hospital, where it was discovered, however, that the wounds were apparently very trifling. He progressed favorably, until he was thought well enough to quit the hospital. The unfor-

tunate man, however, again entered the hospital, and died on Friday last from the effects of the injuries. A verdict of accidental death was returned, but the whole of the jury expressed their decided opinion that in such cases all horses should be "cast" before undergoing such a painful operation. —*Daily Papers.*

EFFECTS OF MEDICINES ON THE URINE.

The effect of different medicinal substances on the urine, according to Berzelius, is very striking, and occasionally very rapid. By calcining the sediment of the urine from patients who have used mercurial ointment, we may obtain globules of mercury. Nitre, the yellow prussiate of potash, and many metallic salts, especially those of iron, are easily and speedily detected in the urine. After iron has been employed for any length of time, the urine acquires a feeble bluish and greenish tinge, owing, according to Berzelius, to the union of the iron with the ferrocyanic acid, which is generated by the decomposition of animal matters within the body. Soon after taking tartaric or oxalic acids, the urine often deposits as it cools, oxalate or tartrate of lime, which deposit is increased by the addition of the chloruret of lime to the fluid. The malic, citric, tartaric, and succinic acids render the urine more or less decidedly acid. The benzoic acid is converted into the hippuric. The infusion of galls taken internally causes the urine to throw down a black precipitate with the salts of iron. The vegetable salts having potass and soda for their bases, are transformed into carbonates; for the urine is then found to be alkaline, and to effervesce on the addition of an acid. The same is sometimes observed after eating freely of fruit, the urine containing the malate or citrate of potash, which explains the utility of fruit in the uric acid deposit.—*Journal de Pharmacie.*

OFFICE OF ORDNANCE.

Royal Regiment of Artillery.

"William Huke, gent., to be Veterinary Surgeon."
London Gazette, April 2, 1855.

THE

VETERINARIAN.

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Communications and Cases.

THE VACUITY OF ARTERIES AFTER DEATH.

By H. D. Chowne, M.D.

To the Editors of 'The Veterinarian.'

Sirs,—Some remarks made by me on the occasion when Dr. Thudicum read his paper at the Medical Society of London, "on the Vacuity of the Arteries after Death," having, through a misapprehension, been inaccurately reported ('Lancet,' Jan. 27, 1855), the editor introduced a proof correction in the succeeding number.*

As your quotation in the *Veterinarian* for April, 1855, (being a true copy), necessarily repeats the inaccuracy, I shall be much obliged to you if you will insert the same form of correction, a copy of which I annex, substituting, however, the word "cavities" for "ventricles."

"Vacuity of the Arteries.—The remarks made by Dr. Chowne on this subject, and reported in our last number (p. 92), should have stood thus: 'Dr. Chowne stated that he had not any explanation of his own to offer as to the emptiness of the arteries, but considered that when the left side of the heart had emptied itself of blood, it did not remain empty, but was immediately filled with vapour, evaporated from the warm moisture on the inner surface of the cavities, and that this vapour, under any repeated contractions of the heart, would help to propel the blood towards the capillaries."

I may add that, whatever expansion takes place, it occurs at the moment when the *moisture* on the lining surfaces of the cavities *passes into the form of vapour.*

* Notice to Correspondents, April 3, 1855.

"When water is exposed to air in an open vessel, the molecules of its uppermost or superficial stratum, being released from the influence of the molecules below them, have a natural tendency to assume that degree of polarity which is appropriate to their temperature; hence, after acquiring the latent heat necessary to produce this polarity . . . the superficial molecules of water become self-repulsive, and fly off into space in the form of vapour. If the space over the water be *circumscribed*, and be a vacuum, the molecules fly off with such rapidity, as *instantaneously* to fill it."

The expansion of *vapours*, indeed, under small increases of temperature, is extremely minute, being for every degree of Fahrenheit's thermometer, $\frac{1}{480}$ only of the volume they occupied at 32°; and, moreover, in the human body the temperature necessarily falls after death.

I am sorry to have occasion to trouble you with the request contained in this note; and, with regard to the additional comments, I beg you will either include them, or not, as may seem most suitable.

Yours, &c.

8, Connaught Place West;
April 21, 1855.

"THE PROPOSED CONCOURS FOR THE ELECTION OF VETERINARY EXAMINERS."

To the Editors of 'The Veterinarian.'

Gentlemen,—Grant me space, I pray you, for submitting to the public notice a few considerations suggested by the highly important leader on the above subject in your last number.

With its main apparent object—the securing competent gentlemen as examiners—it is superfluous to express my unqualified concurrence. On the question of means we somewhat differ. Thus, in my own case, your leader has perfectly succeeded, for its writer obviously aimed at commanding assent to its principle,—at instituting an inquiry into the mechanism for its working.

For trespassing on your own and your readers' indulgence, my reasons admit of succinct statement.

The subject of Veterinary Examination is one which has especially occupied me. Practically acquainted with its

working, trained in the struggle for success to very various kinds and grades of learned contests; informed by personal observation of the effects attendant upon the examining systems which prevail in the great majority of European academies and colleges, I feel warranted in emitting a judgment in point; the more so as I feel its growing necessity. I daily wax stronger in the conviction, that the many defects which beset us in the study of the pathology and treatment of human infirmities will only be thoroughly practicable when the basis of comparative physiology and pathology shall have been soundly laid. I cannot, therefore, but feel deeply anxious in every eventuality implicating the interests of the veterinary profession; the more so, as my youth being devoted to its study, I owe much of the advantage which has enabled me to attain my present position in human surgery.

To the point.

In commenting on a proposed scheme for due notice of vacancies in the Board of Veterinary Examiners to be given to the whole profession, and candidates to be invited to send in names and testimonials of qualification, you give hearty concurrence to it, but intimate that "we must not stop here, for if so, little good would follow. Where a thorough reform is needed, half measures invariably fail; and therefore we should wish to see adopted a modified plan of the French system of election by concours, and have the merits of the several candidates tested, by all being submitted to some kind of examination, anatomical or pathological, as the case might be, orally and by writing."

Instead of warranting me in giving assent to your doctrine that, where thorough reform is needed, whole measures are indispensable, the experience of history teaches me to adhere to the opinion I propounded a few years since in writing on examinations for a veterinary diploma: "It is not radical change which is required, but gradual and pacific reform. Durable good is not the result of casual or instantaneous influences, but can only be the consequence of wise and prudent measures, for the development of which time and unanimity are required."

After *agreeing most fully* with an eloquent author who expresses himself on appointments in general to the effect that "merit should be *everything*, and wealth, family connexion, rank, and party *nothing*," you add, "nevertheless, no one should be eligible to take his seat at the Board who had not been several years in practice, and whose standing in society did not warrant his occupying such an honorable post." These tenets are contradictory. In the appointment

merit is to be everything, rank, party, and wealth, nothing; yet *standing in society* is to be something. Now the expression, "standing in society," is identical with rank; commonly it is an exponent of party: practically, it is inseparable from the influence of wealth. The avowed doctrine, and proposed practice, to say the least, appear difficult to reconcile.

One word as to the *concours*—the election of officers by public examination. Theoretically, nothing can be more admirable; practically, the system has long been in working on the continent, and has afforded many proofs of its utility, not, however, without others—(the minority, I admit, for sake of argument)—of a contrary tendency. But the most liberal legislators in educational matters have refused to apply this system in our country. Even Lord Brougham and his immortal co-founders of my *Alma Mater*, the parent college of the University of London, have not imitated the French in this respect, in the appointment of professors, though all the prizes and junior hospital offices are given by *concours*. Why the difference in the case of superior positions? It has been felt that men of renown and means would, in many cases, certainly refuse to expose themselves to a public contest, in the danger of being beaten by a man who, having nothing to lose, flung himself with determination and coolness in the arena, and might chance to achieve success. I do not support this notion, I merely adduce it as a practical difficulty which has been felt. It is matter for question how far it would be expedient for the Veterinary Profession to sanction a practice deemed inexpedient by men whose learning and liberality can no more be doubted, than the eminence of their position, and the weight of their names. Supposing, however, that in the case of teachers the Veterinary Profession sanctioned the *concours*, should they do so for the examiners? So far as I am aware, they would have no precedent. It would, I conceive, be indecorous. But would it be useful? This is the question; in its solution, it must be borne in mind that the Council have full faculty to elect competent examiners, and to satisfy themselves of capability of candidates for examination. At the same time, the Council being elected by universal suffrage, are under the control of the profession, which thereby exercises immediate influence on the system by which members are admitted into the body. With the safety afforded by the working of the representative system, it becomes still further questionable whether the radical innovation, would be advisable.

I pray you to reflect on my career. You will thereby see reason for believing that, individually, I do not belong to the class of men who live to envy those in positions as eunuchs envy lovers. I should be quite satisfied to rest my all on competition. Yet, with a full knowledge of circumstances, I have deemed the above suggestive remarks (for they pretend to no more), advisable.

The longer I live the more firmly do I grow in the conviction that it is in the intellectual, as in the organic world, those works only endure whose growth, though incessant, is steadily progressive, not convulsively agitated. Though cherishing a stanch spirit of pure liberalism, I am not blind to the fact that nature is conservative in her marvellous workings; therefore it is, that in the administration of the affairs of individuals, as of societies and of nations, I feel bound to oppose the doctrine, that partial, that is to say progressive, measures fail, where a thorough reform is needed. I rejoice that the difference between us is but one of incident. I trust that the development I give it may tend to render this another illustration of the philosophical proposition, that the development of differences is one of the soundest bases of unity.

On this, the first occasion of my publicly addressing you, I cannot but tender my thanks for the many proofs of personal consideration you favoured me with while your pupil, and of friendship since; proofs in exchange of which, I beg you to accept assurances of grateful esteem and unalterable goodwill from your obedient servant,

Joseph Sampson Gamgee,
Assistant-Surgeon to the Royal Free Hospital.

16, Upper Woburn Place.

EPITHELIAL CANCER OF THE BLADDER OF A HORSE.

By Messrs. C. and A. Shorten, M.R.C.V.S., Ipswich.

Diseases of a chronic nature affecting the structure of the bladder being of somewhat rare occurrence among the animals which are the chief subjects of the veterinary surgeon's care, we avail ourselves of an opportunity afforded us by a *post-mortem* examination made this day, April 3d, of sending you a specimen of a tumour within the viscus. The following is a brief history of the case in so far as it has

been brought under our notice. The horse was about 16 years old, and had been in his late owners' possession, (Messrs. Ransomes and Sims,) eleven or twelve years. He was a dark chestnut, very powerful and active, and had always been remarkably healthy, never having been under professional treatment save once, and that some years since, for lameness, during his lengthened servitude. He was also very fat, and in this respect he proved quite a prize for the knacker. In October last he was first brought under our notice in consequence of voiding blood with the urine. We made an examination, and found a tumour about the size of a hen's egg, growing from (apparently) the fundus of the bladder, of an irregular shape, and having no peduncle. On the application of pressure, the animal evinced considerable pain, and a small quantity of urine, mixed with blood, was instantly ejected.

About a month previous to this time, we were informed that the animal had been observed to urinate more frequently than usual, and in smaller quantities. Sometimes he suffered pain after the act, but this did not seem to be a persistent symptom. Subsequently to the attack of hæmaturia, the bleeding ceased for several weeks, when it was particularly noticed that the urine was of a *yellowish white colour and remarkably viscid*. The attacks of hæmaturia now became more frequent, the blood being always voided in clots, and which were sometimes very large.

From the state of the parts in October last, you will be enabled to form a tolerably correct opinion of the rate of the growth of the shapeless mass now occupying the interior of the viscus. It is evident that its development, although not very rapid, was continuous, as but little space is left for holding the urine. Of late, an involuntary flow of this fluid followed upon the animal being made to undergo the slightest exertion, but when at rest the bladder would contain a few ounces of urine, and the animal place himself in the ordinary position to expel it.

With the exception of the morbid state of the bladder, every organ in the body was free from disease. Even the kidneys themselves gave no evidence of lesions of any kind. Two days before the animal was destroyed, the hemorrhage returned, and being accompanied with very great suffering, it decided his fate.

We need scarcely add that from the beginning we despaired of any good resulting from medical treatment. Little, therefore, was done beyond attention to dietetics, and the enjoining of perfect rest.

[Up to the present time, veterinary pathologists have made but little progress towards a proper classification of cancerous diseases. Indeed, we have good reasons to believe that many affections of the lower animals have been designated cancer when few symptoms were present to justify the conclusion; moreover, that many instances of veritable cancer have been passed by unheeded, or thought to be merely cases of ordinary tumour. It is only by bringing together well-authenticated instances of this malignant disease, and properly investigating the elementary structures of doubtful cases, that we can hope to arrive at a better knowledge of this formidable class of maladies.

Human pathology has but just emancipated herself from the thraldom of ignorance which beset her path in this respect, and may we not add that now she looks to veterinary pathology to aid her onward progress. For these reasons, we regard the case which Messrs. Shorten here record, as one of much interest; and through them we are enabled to add the following particulars of the specimen. Its weight was two lbs. and three quarters avoirdupois; its diameter five inches, and its length eight inches, six of which were occupied by cancerous deposit; the coats of the remaining portion of the bladder, towards its neck, being in a normal condition. Externally, it had a nodulated appearance, and in the hollows between the three principal convexities, a deposition of healthy fatty matter had taken place. The free surface of the peritoneal coat of the bladder was unchanged, but its substance was thickened, more so however in some places than in others. The muscular coat was hypertrophied throughout, and the fasciculi of fibres strongly marked here and there, while in others all trace of them was lost in the cancerous deposit. On turning back the neck of the organ, so as to expose its interior, the mucous coat was seen to be of a florid hue, and to be elevated in the form of warty excrescences, which were exceedingly numerous. Its surface throughout was unbroken, except in two places where the sloughing process had commenced. Here the mucous membrane and the cancerous substance itself were ragged, and of a dirty brown colour. On replacing the neck of the bladder, and pouring water into its interior, it was found to contain not more than three ounces of fluid. A section being carried through the substance of the deposit, and which had a firmness nearly equal to that of soft cheese, exposed a greyish-white surface, from which could be squeezed a semi-fluid matter having the consistence of thick cream. This was found to be contained in canals and cysts, which permeated the

mass in various directions. On subjecting a portion of this matter to microscopic examination, it was found to be composed of cells mostly nucleated, and of various sizes. Some of these were but little altered from the form of tesselated epithelium, while others had a more irregular shape, and very many had become elongated into "caudate cells." These several forms will be easily recognized in the annexed engraving, which will also serve to identify this disease.

Cells of Epithelial Cancer in various stages of development. Magnified about 300 diameters.

Professor Paget, in his lectures on 'Surgical Pathology,' when describing epithelial cancer, says:*

"The essential anatomical character of epithelial cancer is, that it is chiefly composed of cells which bear a general resemblance to those of such tesselated or scaly epithelium as lines the interior of the lips and mouth, and that part of these cells are inserted or infiltrated in the interstices of the proper structures of the skin or other affected tissue.

"The epithelial cancers of the skin or mucous membrane from which, as types, the general characters of the disease must be drawn, present many varieties of external shape and relations, which are dependent, chiefly, on the situation in which the cancerous structures are placed. They may be either almost uniformly diffused among all the tissues of the skin or mucous membrane, predominating in only a small degree in the papillæ; or the papillæ may be their chief seat; or they may occupy only the sub-integumental tissues. As a general rule, in the first of these cases, the cancer is but little elevated above or imbedded below the normal level of the integument, and its depth or thickness is much less than its other dimensions; in the second, it forms a prominent warty or exuberant outgrowth; in the third, a deeper-seated flat or rounded mass. These varieties are commonly well marked in the first notice of the cancers, or during the earlier stages of their growth; later, they are less marked, because (especially after ulceration has commenced) an epithelial cancer, which has been superficial or exuberant, is prone to extend into deep-seated parts; or one which was at first deeply seated may grow out exuberantly. Moreover, when ulcera-

* Vol. ii, pp. 413 *et seq.*

tion is in progress, a greater uniformity of external appearance is found; for, in general, while all that was superficial or exuberant is in process of destruction, the base of the cancer is constantly extending both widely and deeply into the subintegumental tissues."

He goes on to remark that—

"In other instances, or in other parts, a large mass is formed, the surface of which, when exposed by washing away the loose epidermoid cells which fill up its inequalities, is largely granulated or tuberculated, and is planned out into lobes by deeper clefts. Such growths are up-raised, cauliflower-like; and, with this likeness, may be broken through the clefts, into narrow-stemmed masses, formed each of one or more close-packed groups of enlarged, tuberous, and clavate papillæ. The surface of such a growth shows, usually, its full vascularity; for if it be washed, it appears bare, and, like the surface of common granulations, has no covering layer of cuticle. It may be florid, bleeding on slight contact, but, more often, it presents a dull or rusty vermilion tint, rather than the brighter crimson or pink of common granulations, or of such warts as one commonly sees on the prepuce or glans penis. * * * * *
But the same general plan of construction exists in all; namely a certain portion of the skin or mucous membrane is infiltrated with epithelial cancer-structures: on this, as on a base more or less elevated and imbedded, the papillæ, variously changed in shape, size, and grouping, are also cancerous; their natural structures, if we except their blood-vessels, which appear enlarged, are replaced by epithelial cancer-cells. And herein is the essential distinction between a simple or common warty or papillary growth, and a cancerous one or warty cancer."

With a further view of showing the identity of this case with what is now known of this disease in man, we venture to give another quotation from Mr. Paget's valuable work:

"The grey substance," says he, "of epithelial cancers commonly yields to pressure only a small quantity of turbid yellowish or greyish fluid; but, with rare exceptions, one may squeeze or scrape from certain parts of the cut surface, as if from small cavities or canals, a peculiar opaque-white or yellowish material. It is like the comedones, or accumulated epithelial and sebaceous contents of hair-follicles; or even more like what one may scrape from the epidermis of the palm or sole after long maceration or putrefaction. This material, which is composed of structures essentially similar to those of the firmer substance of the cancer, but differently aggregated, supplies one of the best characteristics of the disease. It may be thickly liquid, but more often is like a soft, half-dry, crumbling, curdy substance: pressed on a smooth surface, it does not become pulpy or creamy, but smears the surface, as if it were greasy: mixed with water, it does not at once diffuse itself, so as to make the water uniformly turbid, but divides into minute visible particles.

"The quantity of this softer material is extremely various in different instances of epithelial cancer. According to its abundance and arrangement, the grey basis-substance may appear differently variegated; and the more abundant it is the more does the cancer lose firmness, and acquire a soft, friable, and crumbling texture. In many cases the soft substance appears, on the cut surface, like imbedded scattered dots, or small grains: these being sections of portions contained in small cavities. But, as the quantity

increases, and the cavities containing it augment and coalesce, so the firmer substance becomes, as it were, cribriform; or when the softer substance is washed away, it may appear reticulated or sponge-like, or as if it had a radiated or plaited structure. Or, lastly, the soft substance may alone compose the whole of the cancer: but this, I think, is very rarely the case, except in secondary formations and in the lymphatic glands.]

OSSEOUS TUMOUR OF THE ANTERIOR MAXILLARY BONE.—OPERATION.

By J. Arnold, M.R.C.V.S., Leiston.

I have forwarded to you an osseous tumour which I removed the day before yesterday (April 11th), from the upper jaw of a three years old colt. The history of the case is very brief.

I bought the animal, a few weeks since, to work upon my farm, and noticed at the time an enlargement of the jaw; I learned that it had been known to exist about four months, at which date it was first seen by his owner, being then about as large as a pigeon's egg; it must have grown very rapidly since then, as you will perceive from its present size. Previous to my purchasing the colt, the tumour had been frequently cauterized with the nitrate of silver, but without in any way diminishing its bulk or checking the progress of its growth: latterly it has interfered with the prehensile power of the upper lip, but the animal has kept up his condition, and did not appear to suffer any pain from its presence. The base, or attached portion, was nearly equal to its free surface. The incisor teeth, especially the central ones, were displaced, so as to leave a space of nearly three inches between, but this probably will be remedied to some extent, now that the cause is removed. I do not at all fear but that the operation will be perfectly successful, and that recovery will be tolerably quick.

The operation was commenced by dissecting sufficient of mucous membrane from the surface of the enlargement to cover completely the exposed jaw after its removal. With a suitable saw I then cut through the base of the tumour, as close to the sockets of the incisor teeth as I deemed prudent; after which, the flaps of mucous membrane were brought over the spot and secured by sutures. The hemorrhage, although considerable at first, was soon staunched. The colt was willing and far better able, having regained the use of upper lip, to feed, very early after the removal of the tumour.

[Through Mr. Arnold's kindness, we are enabled to give the

following particulars of the tumour:—In form, it is a flattened ovoid, measuring, in its long diameter, four inches, and in its short, two inches and three-eighths; its thickness varies from an inch and a half at one end, to little more than half an inch at the other; the base measures nearly as large as its exposed surface; it weighs five ounces *avoirdupois*, which is less than might have been expected from its size. Its structure shows it to be an outgrowth from the maxillary bone of osseous spiculæ, which shoot in a straight direction, closely packed together into a fibrous structure, which is somewhat elastic and has a density nearly equal to cartilage. These osseous spiculæ are easily separated, in small bundles, from the entire mass. The portion of mucous membrane left upon the surface of the tumour, gives evidence of the application of caustic agents; its central part is nearly destroyed, while this is bounded by a thickened edge or cicatrizing border. The microscopic appearances do not differ in any essential particular from those of similar adventitious osseous growths from normal bone.

Mr. Arnold has since informed us that the case went on to his perfect satisfaction, little being required to assist the healing process beyond the occasional application of an astringent solution].

ON THE DOCKING OF HORSES.

By E. Harrison, M.R.C.V.S., Lincoln.

In the perusal of your Journal for May, my attention was drawn to an article from the pen of Mr. J. Gamgee, entitled "Docking, or Amputation of the Tail."

I am glad to testify my concurrence in his observations, and I would remark that ever since I graduated I have refrained from having recourse to the searing iron in this operation. I became, while a student, disgusted with the use of such a rude and barbarous instrument; its unsurgical appearance and its brutal application producing those struggles and contortions of the poor animal upon whom it is practised, are well calculated to produce this dislike, to say nothing of the risk, which the operator is exposed to. These things all tended to awaken in my mind the necessity of some other method to arrest the bleeding in this oft required operation. I determined on the adoption of a plan similar to the one *fully* described in the article I allude to, with this exception, or rather I may say addi-

tion: I placed upon the bleeding stump some Pulv. Gum. Acac. and upon this a thin pledget of tow, securing it by merely plaiting the hair. On the following morning, the tail being combed out, &c., the animal is fit to resume his work as usual.

A short time since, an instrument-manufacturer of celebrity, mistaking an order I gave him, sent me a *searing-iron* which, of course, I had long considered useless. I returned the rude weapon, and said in my note "that I had ceased to require such a '*tool*,' (surgical instrument I could not call it,) and I trusted, for humanity's sake, to say nothing of the credit it would reflect on veterinary surgery, that the period was near at hand when the time of the artizan, in making this weapon, would be turned to a better account." I merely quote this to show my much-respected professional friend that there is one at least besides himself who has been in the habit of docking without searing.

I avail myself of this opportunity of stating that I have several times taken up the coccygeal arteries by ligatures, and which has always been attended with the most satisfactory result. This operation is easily accomplished, and being unusual, it creates in the public mind a favorable estimation of our profession, of which the operator has his share. In truth, this is the plan now generally adopted by me.

In conclusion, let me observe, since the question is mooted, that there are many others who, like myself, have abandoned the use of the cautery, and who could say as much as I have done in its condemnation. To those who have not as yet followed the plan adopted by Mr. Gamgee and myself, I would merely observe—give it trial; the result, I am sure, will be satisfactory.

ANIDIAN MONSTERS.

By John Gamgee, M.R.C.V.S.

History.—I am indebted to Mr. George Varnell, Assistant-Professor at the Royal Veterinary College, for the specimen which is the basis of this communication. It was sent him by Mr. Bowman of Howden, from whom we have learned that Mr. Scott of Hook, owns the cow which expelled it *per vaginam*, before giving birth to a living male calf, which survived only a few hours. Whether the two were in separate membranes, a fact scarcely to be doubted, cannot be ascertained.

Fig. 1.

Fig. 3.

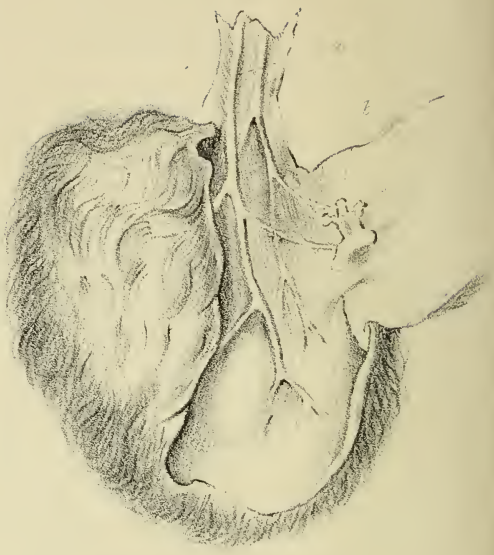
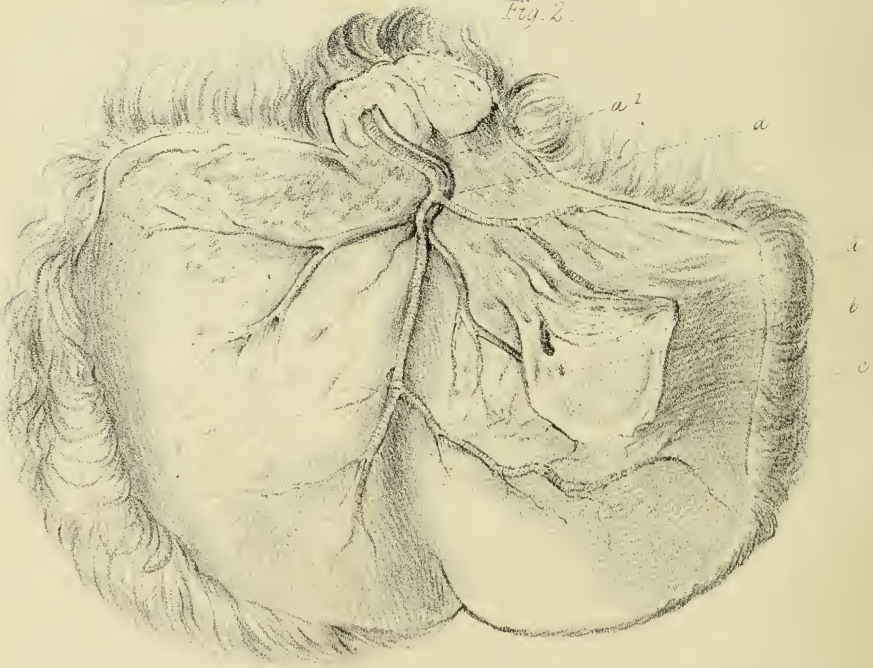


Fig. 2.



Description.—It is a round, spheroidal production, (see Plate II, fig. 1), covered with red hair, except near its pedicle, *a*, where long white hairs, with a whorl-like disposition occupy a space, *c*, as large as a crown piece. Above the pedicle is a spherical body, *b*, about the size of a walnut. This is separated from the large mass by a slight constriction, and at the back of it is a little lozenge-shaped space destitute of hairs. The whole weighs twenty-five ounces. The large sphere measures six inches from the base of the peduncle to its opposite extremity, and four inches and a half in its straight diameter. The head, or upper globular, portion, measures nearly an inch in diameter, but the long, red and white hairs which cover it, increase its apparent size. The entire mass is elastic, and imparts to the feel a sense of fluctuation from a contained fluid, but which it is evident is not freely floating in a cyst of any dimension. On puncturing the body about the middle, and applying pressure, a somewhat sanious, turbid, and serous fluid flowed out. On the incision being freely extended downwards, twelve ounces of this fluid were obtained.

The structure of the growth can now be easily studied, (see fig. 2). Having previously injected its vessels, they were dissected with care. Only one principal artery and vein were found to exist. The former, *a*, proceeds straight downwards to the opposite part of the growth, ramifying laterally in its course, and lastly, bifurcating; its venous companion, a^1, has a similar distribution. In the right half of the mass, where the arrangement of the vessels is made clear, a little dissection exposed a circumscribed cavity, *c*, which was lined by a clear, glistening mucous membrane of normal structure and appearance, and covered with a layer of tesselated epithelium. Anteriorly, at *d*, it presented a digital prolongation which is manifestly an imperfectly developed channel of communication between the mucous sac and the external surface. Beneath this mucous sac is a nodulated osseous rudiment, *b*, without definite shape, extending from before backwards. Under the microscope, the normal structure of bone in a somewhat imperfect condition, was clearly made out. From it are found to radiate fibrous septa, which may be said to form the bulk of this monstrous production. They are directed outwards, intricately interlacing so as to form a network, in the meshes of which the serous fluid was contained. Externally, these septa are implanted into the inner surface of the common integument, which is in every respect healthy. In various parts of the mass, but especially near the entrance and exit

of the blood-vessels is a considerable accumulation of adipose tissue; it is almost the sole constituent of the sessile head or appendix, and into it branches of the blood-vessels freely penetrate.

Notwithstanding the scantiness of historical data, the facts just related afford ample basis for a correct judgment as to the nature of the specimen. Developed as it was in the uterus, composed as it is of organized tissues, to which blood-vessels, obviously in the shape of an umbilical cord, proceed, there can be no question, even apart from a knowledge of other facts, that we have to deal with a fœtal monstrosity, destitute of all definite shape. Happily, we have preserved a record of other cases of a similar nature. The fact, however, of their being uncommon, and of my being able to add the particulars of three specimens to the cases studied by Gurlt, Vrolik, and Geoffroy St. Hiliare, who are the most eminent of teratologists, will, I think, be accepted as sufficient justification for the description I am about to give, as the basis for a few physiological considerations.

Fig. 3 of the plate represents an Anidium which I had occasion to examine in the remarkable museum with which Professor Poletti has enriched the city of Ferrara. It was also expelled by a cow, and possesses all the characters of the one above described, with the exception of being much smaller, and lacking the rudimentary mucous cavity, and the signs of a head. The umbilical artery and vein are to be seen at *a*, and a small tubercle of bone and cartilage, which are represented at *b*, add to the already accumulated evidence that even the lowest forms of anomalous productions are never destitute of an attempt at high structural development.

The collection of preparations in Professor Alessandrini's museum in the University of Bologna, I found to be far too extensive to be fully studied in the few weeks of my stay there last spring, and being bent on preparing a large assortment of drawings from morbid specimens, with a view of practically illustrating disease in living animals, I was forced to omit Teratology, and for this reason I cannot reproduce on stone to-day, the very interesting specimen which is thus noted in the catalogue of my venerable master.

"No. 2194. Amorphus, Gurlt; amorphus cephalicus of Alessandrini. A shapeless monster, principally composed of the elements of the head, with few viscera. The veterinary surgeon, Mr. Lugari, on the 14th day of June, 1834, whilst assisting a cow in labour, in the Commune di Spilamberto, Stati Estensi, noticed that after the birth of one live and

well-developed calf and its membranes, a slight contraction caused the exit of a globular sac perfectly closed, resembling a fetus in the early stages of development, still invested within its membranes. Having opened the sac a moderate quantity of water escaped with the above-described monster. In addition to an incomplete head, it presents a small portion of a membranous canal, comparable to a portion of intestine, on the mesentery of which are inserted the umbilical vessels."

Ruysch, in his 'Thesaurus Anatomicus,' was the first to describe an *anidium*, and from that time, fifty years elapsed before Dr. Bland, in his 'Midwifery Reports,' published in the 'Philosophical Transactions' for 1781, page 363, in giving a table of the proportion of male to female children, of the number of twins, and of the children that were deficient or monstrous, and of those that were dead born, stated that a woman was delivered of twins, the one well-formed, the other imperfect, which he describes as follows:

"Of this singular production, to which I have not ventured to give a name, the following is the history and description:—The woman who produced it was about twenty years of age; this was her first pregnancy. She was, after a labour, delivered of a female fœtus, and its placenta, in which nothing uncommon was observed, and although the uterus remained of an unusual size, yet the pains not recommencing, there was no suspicion entertained but that its bulk was occasioned by coagulated blood. On the third day the pains became violent, and this monster was born. Its shape was spherical, but somewhat flattened. It measured eight inches,* and weighed about eighteen ounces. It received its nourishment by an umbilical cord, to which was attached a portion of membranes, and although no placenta was found, it is probable it had a small one, and that it was enclosed in its own involucrum. It was completely covered with a cuticula, and a little above the part where the navel-string terminated, there was a hairy scalp covering a bony prominence, somewhat resembling the arch of the cranium. On dissection, it was found to be plentifully supplied with blood-vessels, proceeding from the navel-string and branching through every part of it. It had a small brain and medulla spinalis continued under a bony theca, with nerves passing from thence through the foramina of the

* In the British Museum copy of the 'Philosophical Transactions,' the number five has been written in the margin, and the number eight of the text erased.

bones, but no resemblance of any thoracic or abdominal viscera. The rest of its bulk was made up of fat."

Vrolik, in his 'Memoirs' of 1822, wrote on 'Acephalic Monsters,' recognizing six classes of them, the fifth consisting of individuals without heads and extremities, or solely composed of a trunk. He thus adopted Tiedemann's subdivision, overlooking the fact that Valisnieri's case, on which Tiedemann had founded the class, possessed heart and arteries, also parts resembling lungs and liver, besides stomach and intestine, so that it will not be considered under the same head as Bland's case above quoted, and which Vrolik himself refers to at length. Tiedemann firmly maintained that no monster, however imperfect, was ever destitute of those primordial portions of intestine which characterise the *anidium* I have above described. Vrolik expressed his satisfaction at being able to publish a case in corroboration of these views, and spoke of a spherical mass which was delivered the morning after the birth of a well-formed female child: he could get to know nothing of the placenta. The mass consisted of skin covered with small hairs. In the centre it bore evident traces of a spinal column, the inferior vertebræ of which were fused into an irregular and shapeless mass; the superior ones were separate, and preserved their rounded aspect. Around the vertebræ were a few muscular fibres, and the spine communicated superiorly with what might be considered an imperfect model of the brain, in which, however, he could not distinguish the cortical from the medullary portion. This imperfect nervous centre was enclosed in a kind of *dura mater*, which was not, however, consolidated by an outer osseous box in the rudimental head. The spinal marrow terminated in a rounded extremity at the point of fusion of the vertebræ; but above this, nerves were given off which passed through the spaces between the vertebræ, and were distributed to the soft parts around. There were, however, no origins of nerves discoverable in the rudimentary brain. Independently of the spinal column were two other irregular bony nodules. This monster also possessed a semicircular and superficial cavity, which, with the exception of umbilical vessels, contained only a short and recurrent intestinal fold, attached by a little loose cellular tissue, and terminating at one end in a *cul de sac*, and in the other losing itself in the cord.

In his 'Tabulæ,' published in 1849, Vrolik refers this specimen to Gurlt's genus Amorphus; and in his 46th plate, not only has he depicted it, but also drawn and described another case from a cow which was simultaneously delivered

of another well-formed calf. This specimen also consists of a cutaneous envelope, adipose and cellular tissue, with two regular indurated eminences, and a cylindrical vagina corresponding to a portion of denuded integument. The obtuse end is filled with a gelatinous substance. The primordial intestinal parts are so obscure, that he was unable satisfactorily to distinguish them. There is a rudimentary spinal cord which distributes nervous ramifications. The umbilical vessels are distributed all over the mass for nourishment.

Physiological considerations.—It will have been noticed, in the course of these remarks, that we have practically recognized the principle of classifying monstrosities. This may perhaps seem strange to those who, being accustomed to see their almost infinite variety, may have come to the conclusion that, if there were any class of natural objects in the construction of which all rules seem violated, that class must comprise monstrosities. But this impression of the superficial observer must yield to the one forced upon the mind of the deep thinker, that even in the most marked deviation from the natural order of things, Nature's works present evidence of conformity to fundamental laws. Thus the astronomer and geologist are enabled logically to account for the convulsions of our own and of other planets; and, thanks to the labours of American mariners in particular, it is now ascertained that even the tempests of the ocean are regulated by laws,—so much so, indeed, as to surpass the anticipation of those most sanguine philosophers, who prosecuted their labours in the belief that they would eventually discover every law entering into the constitution of nature's code. Happily, the anatomist has been no less successful in his investigations, as is proved by the labours of Gurlt, Geoffroy St. Hilaire, and others, who have succeeded in establishing a classification of monsters. True it is that so great is their variety, that specimens are every now and then met with, which it is difficult to arrange under one order in preference to another. For this reason, the eminent teratologist of Amsterdam has expressed a doubt as to the value of a classification; but for a similar reason should we not see many objections to classify any group of natural objects? "Natura non facit saltus" was the very just exclamation of Linnæus. Indeed, so gradual are the steps of nature's changes, as very often to be imperceptible: hence it is that beings which are so easily distinguished as animals and vegetables in their higher forms, are almost impossible of recognition in the lower ones. This is but a proof that all human systems are imperfect. It is surely no objection

against recognizing an animal and a vegetable kingdom in particular;—a principle of classification in general. We have dwelt thus at length upon the advisability of classifying monsters, because this is one of the first attempts of the kind in the veterinary profession amongst ourselves. We hope, eventually, to prove the scientific advantages which are to be derived from a cultivation of this system; meanwhile, we give a few reasons in support of the name *Anidium*, which we have adopted for the monsters above described. It was suggested by Geoffroy St. Hilaire, as indicating *absence of specific form;* practically it proves very serviceable, for a class of monsters, as our observations prove, presents itself in which none of the ordinary animal forms are recognizable. Gurlt suggested, and Alessandrini adopted the generic name *Amorphus*, which appears to us more objectionable, because less precise. Employed as it is, commonly by scientific writers, to express absence of structure, it cannot strictly be applied to masses of animal matter, which, however shapeless as a whole, present a high degree of structural development in their constituent parts—*e. g.*, skin, blood-vessels, &c.

Reviewing the cases related in this communication, we are struck by the fact that Dr. Bland's, Vrolik's, Alessandrini's, and my own, may be distinguished by the specific name *Anidium Cephalicum*, as having a rudimental head; moreover, they present a rudimental alimentary canal. The other specimens described by Ruysch, Vrolik, Gurlt, and Poletti, were absolutely destitute of the latter, and of any signs of a head: hence we would suggest for them the name *Anidium Acephalicum.*

In conclusion, we would advert to the specimen under consideration as illustrating the process of formation from the incubated egg to the perfect animal. With all the changes which are set up in the egg as produced in the female ovary, so soon as it has been acted upon by the prolific secretion of the male, it is not our intention now to deal. Suffice to observe, that those changes gradually progress until the nervous, the vascular, the nutritive, and the locomotive systems, are developed in perfect harmony, and constitute the animal. In this ascent from the simple to the complex, parts may fail, such as a limb or an eye; even organs of the highest importance may be lacking, such as the brain and heart; or, on the other hand, organs or parts may be developed in excess—*e. g.*, double heads, one or more extra limbs, &c. This defect or excess of formation leads to appearances, monstrous, as compared with the common beautifully regular productions of nature, and as such they are popularly designated

monstrosities. In reflecting on the varieties, which every practitioner must have observed, he will find that, however strange these forms may be, all are reconcileable with the law of excess or defect—defects of which the Anidia are the simplest examples. They exhibit none of the ordinary forms of animals, yet, from the origin and the perfectness of the structures which enter into their constitution, they must be recognized as ova to which the tendency to development has been communicated, though arrested at so early a stage, that there has been no opportunity for the formation of particular viscera or special parts.

16, Upper Woburn Place;
May, 1855.

[We remember to have received, a few years ago, from a member of the profession, a specimen in every essential particular like the one which Mr. Gamgee has here given so lucid an account of. The condition, however, in which it reached the College did not allow of its being preserved. If we remember rightly, it was given birth to by a cow, and with a perfectly formed fœtus. Perhaps some of our readers may be in full possession of the circumstances, and, if so, we shall deem it a great favour if they will communicate with us on the subject]

CONTRIBUTIONS TO VETERINARY MEDICINE AND SURGERY.

Part II.

By John George Dickinson, M.R.C.V.S., Boston.

The diversified nature of my cases in these contributions is such that the adoption of a special method in their description is out of the question. I cannot well classify my materials, and therefore I give preference to the insertion of the cases of longest standing in my note book. I have engaged in another work since I left London, and that is to keep a statistical account of the diseases prevalent in those parts to which my daily travels extend, with observations on the several agencies which influence their production. This, as may be imagined, takes some time to fill up, but from it I expect, at the expiration of each successive year, to draw most valuable information. Meanwhile I offer no systematic

essays, but the random gleanings of a carefully attended practice.

I shall now direct the attention of your readers to two cases of

CHOKING.

On Good-Friday, 1853, at 10 o'clock, A.M., an Irish costermonger led a donkey into our forge which had been suffering from an obstruction in its throat for the last three days. It was with the greatest difficulty the poor animal could walk, so great was the weakness brought on by the delay in administering to his wants, and so excruciating was the pain he suffered. The leading symptoms were copious salivation, head protruded, neck spasmodically contracted, fore legs abducted, respiration very laboured, and the pulse frequent, being also small and wiry.

The owner, in relating the history of the case to me, said that he fed his donkey on potatoes and chaff mixed together, and when he first noticed him to be ill, he tried to get him to drink, but the water returned through the nostrils ;—naturally, none was swallowed. I with difficulty got my hand into the mouth, and, on carrying it very far back, I distinctly felt a pellet, consisting of chaff and pieces of potato, wedged tightly in the pharynx. All my efforts to grasp and extricate it were useless, and, in a moment of difficulty, I laid hold of one of my workmen's "pritchels," which I introduced into the mouth, guarded by my fingers, and, without any ceremony, thrust this formidable instrument through and through the mass till it was so divided, that, it might easily have been swallowed had the pharyngeal muscles not been paralysed by the long and renewed contraction they had previously exercised on the obstructing body.

This operation, although so simple, was too much for the poor donkey to bear up against, and he fell whilst I was thus somewhat rudely attempting his relief, and I had to complete my manipulations while he was lying. Many portions of the potato remained in the œsophagus as inertly as if they had been in a caoutchouc tube. Swelling of the throat was already advanced, and I applied an active blister all over it, which had the desired effect, and set up such an amount of irritation that shortly the pieces of potato were either coughed up or swallowed; the former being accompanied with violent spasmodic efforts, as if to vomit.

Case 2.—In the month of May, 1853, I was called at half-past six o'clock one morning, to attend a chesnut mare, the property of Mr. N—— a city barrister. She was found by the

groom, shortly before I saw her, with her litter all thrown back, and in a state of great excitement. She had, however, eaten nearly all the hay that had been placed in her rack the previous evening. Her fore legs were stretched outwards and forwards, copious salivation existed, spasmodic contractions of the muscles of the neck were present, and her eyes were protruding, giving her a peculiar haggard appearance. Her symptoms clearly indicated that she was suffering from choking. With the aid of a balling-iron, I passed my hand to the back part of the mouth, and immediately felt a pricking substance, but

a, An oat grain lying in a small mass of hay.

which was beyond my grasp. External manipulation over the pharynx induced the most excruciating pain, and by it I could distinctly feel some irregular shaped substance of small size within the cavity. By energetically pushing my hand as far into the mouth as possible, while an assistant pressed on the outside of the pharynx, I was enabled to grasp the offending body, and which proved to be a thorn that had evidently been broken off the hedge and been gathered in with the hay. (See fig. at p. 329.)

I insert an engraving of the natural size of the thorn; although the case may possibly appear to many to be too simple to warrant the employment of such a means for its illustration; and like an eminent physician who, having found a pin protruding from the vermiform appendage of the cæcum and piercing the iliac artery, had the pin delineated, I may be smiled at—all pins being alike. Still, under the somewhat singular circumstances of this thorn being accidentally located in the animal's food, its subsequent lodgment in the pharynx, the difficulty its form presented against its ready extraction, and the alarming and dangerous symptoms it gave rise to, I feel that I have a just excuse for the act.

These two cases of choking, it will be seen, belong to opposite classes. The one depends upon a spherical and comparatively solid substance filling the calibre of the tube it would have to pass through to reach the stomach; and the other upon a small-sized but irregular shaped body, which became arrested in its course by being fixed by its spines to the mucous membrane or lining of the pharynx.

[This case of Mr. Dickinson's, brings to our recollection one which occurred many years since in our practice. A pony, belonging to a tradesman in a small way of business, was turned in the spring of the year into a pasture at a short distance from his residence. From this cause, it was not seen till about a week afterwards, when he found it standing at one corner of the field, looking remarkably dejected and very thin, having evidently not taken any food for several days; a small quantity of viscid saliva was also escaping from the mouth. The owner had the pony removed home, and gave it the best attention he could for a few more days, during which time it took nothing but a little water, and which it drank with great difficulty. Our attendance was now requested. Examination disclosed a piece of stick, about the size of one's finger, firmly wedged across the palate, between the two corner incisor teeth of the upper jaw. Its pressure had produced extensive sloughing, so that the bone was completely exposed; the pain was so great

that the poor animal stoutly resisted our efforts to remove the cause of its suffering. This, however, was soon done, and the parts being cleaned with tepid water, were afterwards dressed with Tinct. Myrrhæ. The relief afforded was so immediate that the pony eagerly partook of some water which was close at hand, and would have drank a far greater quantity than would have been desirable, had it been permitted. Little after-treatment was necessary, beyond the daily application of the tincture, a mash diet, and the substitution of oatmeal gruel for plain water].

CYSTIC CALCULUS IN A HORSE.

OPERATION. DEATH.

By Thomas Aubrey, M.R.C.V.S., Salisbury.

I was requested, December 15th, 1854, by E. P. Squarey, Esq., of Odstock, to see a thorough-bred horse, eight years old, sixteen hands high, which he described as having been suffering from a stone either in the kidney or the bladder for three years past.

He informed me that in June, 1852, the horse, being then five years old, and in excellent health and condition, had a "summer's run" given him, it being intended to prepare him for the next hunting season. He remained in the straw-yard feeding on vetches, &c., up to August, when he was taken into the stable, to be conditioned. The owner soon afterwards rode him, but he had not proceeded far before he suddenly stopped, and staled almost pure blood. The symptoms of deranged health continued to gradually increase, till the animal was reduced to a mere skeleton. Notwithstanding this, he was regularly driven up to Christmas last.

The leading symptoms indicated great irritation of the urinary organs. The animal was frequently staling; the urine being sometimes mixed with blood. After passing all he could, he would stand in the same position for several minutes, and strain violently. The penis was often pendulous, and occasionally the urine would escape involuntarily. Having carefully examined the bladder, per rectum, I was satisfied of the existence of a very large calculus within that organ, and I at once communicated my opinion to the proprietor, stating that no treatment would be of any avail excepting the operation of lithotomy, and that this would be attended with considerable danger, from the great size of the

stone. The animal being nearly useless, the operation was at once determined upon, but on account of the severity of the weather, I did not deem it advisable to operate before March 5th, 1855.

Mr. Andrews, surgeon, of this city, was present at the operation, and kindly gave me the benefit of his assistance.

The horse was cast, and secured as for castration, the hind legs being carefully brought forward, and firmly secured in an abducted position. Chloroform was then inhaled, and in five minutes the animal was completely under its influence. A whalebone staff was now passed up the urethra to the ischial arch, and being firmly held in its place, it was cut down upon, and by this means a fair sized opening was made into the canal. The large size of the calculus required that the incision should be extended towards the sphincter ani muscle to admit of the withdrawal of the stone when grasped by the forceps. This done, and the forceps passed into the bladder, the calculus was readily grasped, and after a few minutes' steady traction it was extracted. The bladder was then washed out with tepid water, and a little solution of the extract of belladonna subsequently injected with a view to allay irritation. The incision in the perinæum was closed by three sutures. The operation being completed, the hobbles were removed, and the horse, after lying a short time, got up. The pulse was now 56, and the respiration much accelerated. The animal was placed in a loose box, and ordered to be kept particularly quiet: an opiate was also administered.

At 7 p.m., he was seen to urinate partly through the natural passage, and partly through the wound. Shortly after this, he gave evidence of the existence of severe abdominal pain, by lying down, and looking back at his flanks, &c. I administered a draught consisting of Tinct. Opii, ℥iss. et Ol. Lini, Oss., and threw up an enema. These means afforded temporary relief, and after lying about an hour, the patient got up and appeared to be nearly free from acute pain. The pulse however, had risen to 70, and the respirations numbered 17 in the minute, showing great constitutional irritation. He was left for a time, a little thin gruel being placed in his box, of which he partook sparingly. At 12 p.m., the pulse had increased to 90, and was scarcely to be felt at the jaw, the respiration also was proportionally accelerated. The pain had returned, but it was now chiefly indicated by his occasionally stamping with the hind feet.

A little before 4 o'clock the following morning, all the unfavorable symptoms had become greatly aggravated, so

as to leave no hope of recovery. The pulse was indistinct, the visible mucous membranes were congested; the respiration was very laboured; the pain continuous; tremors were also present, and cold sweats bedewed the body. The patient soon became convulsed, and died 16 hours after the operation.

[We are enabled to add the following particulars of the lesions seen after death, and also a description of the calculus, Mr. Aubrey having forwarded the chief viscera of the patient, as well as the stone, to us.

Heart, pale, and its walls much attenuated. Coagula of fibrine in the cavities, extending into the pulmonary artery, and the aorta.

Lungs, congested.

Liver, paler than usual, and somewhat softened.

Stomach, ruptured; the rent principally confined to the serous covering, but extending through all the coats in the central part of the organ. The viscus contained a fair quantity of ingesta, and it is probable that the lesion occurred at the time of death.

Spleen, much engorged with black blood, which had accumulated in spots, giving a nodulated condition to the organ.

Kidneys: the left was found to be *ruptured on its convex border*. It had evidently been the seat of long-existing disease, leading to a general softening of its structure. The right was enlarged, and also somewhat softened. This kidney contained a large sac, continuous with its pelvis, and of a shape and size calculated to give lodgment to the calculus, and in which it was evident the concretion had long been located. The sac had been formed at the expense both of the tubular and cortical structures. At the base of the cortical structure the inner wall of the cavity was divided by septa into pentagonal sulci, giving it a reticulated appearance not very dissimilar to the second stomach of the ox. This condition of the part probably depended upon the arrangement of the small renal veins which form, as shown by the injections of Mr. Varnell, a beautiful *rete* at the base of the cortical structure, before quitting the gland as distinct venous trunks. The sac contained a semi-fluid, and very adhesive mass of a dirty-white colour, mixed with which were numerous granules of carbonate of lime. The ureters were both enormously enlarged and thickened.

The bladder was but little affected, but gave evidence, from the congested state of its vessels, of having been recently irritated, by the introduction of the forceps. Its neck, however, and also the urethra, to the place of the incision, were

inflamed, but otherwise uninjured by the passage of the stone, except near to the external opening.

It is evident from the state of the viscera that the emaciated condition of the animal depended chiefly on the disease of the kidneys, and that his death arose from a rupture of one of these organs.

Description of the Calculus.—Form, an irregular triangle, with flattened sides, one being more so than the other. Length, 4 inches; greatest breadth, $3\frac{1}{4}$ inches, gradually tapering to a somewhat rounded point; greatest thickness, $2\frac{1}{4}$ inches; weight, $11\frac{3}{4}$ ounces *avoirdupois*. General surface granulated, especially on the rounder side of the concretion. On the opposite side, and extending around the edges is a crystalline deposit of phosphate of lime, which reflects the light from thousands of minute facets. The colour on this side of the calculus is a yellowish-brown. Towards the apex of the triangle, on the convex side, is a thin deposit of a yellow colour, which also reflects light very strongly; and over this, here and there, is laid a whitish deposit, which is evidently carbonate of lime.

The chemical analysis and microscopic appearances agreed in proving the concretion to be composed principally of the phosphate and carbonate of lime, the latter being in excess.]

Facts and Observations.

PLEURO-PNEUMONIA.

We learn from Mr. H. E. Wilkinson, M.R.C.V.S., Newcastle-upon-Tyne, that pleuro-pneumonia is producing extensive ravages among the cattle at the Cape of Good Hope. Mr. Wilkinson has received a communicaton from Mr. G. A. Hutton, a member both of the medical and veterinary professions, who is stationed at Fort Peddie as an assistant army surgeon, requesting him to collect all the information he possibly can on the inoculation of cattle as a means to prevent the disease, and to forward it without delay. Mr. Hutton has received instructions from the Governor, Sir George Grey, to investigate this subject.

We find also, that the same disease is destroying very many of the cattle in the West India Islands. Mr. Shelford. M.R.C.V.S., St. Kitts, has sent us some interesting particulars respecting it, for which he has our thanks. He has likewise promised us a detailed account of these cases.

HÆMATURIA PRODUCED BY BRYONY ROOT. BRYONIA ALBA.

In a communication received a short time ago from Mr. J. E. King, M.R.C.V.S., Diss, he says:—"I have lately had some very interesting cases of hæmorrhage from the kidneys among some horses, five in number, belonging to a farmer in this neighbourhood. From the circumstance of these being the only horses he had, and all being affected, I was led to infer that some special cause was in operation. I examined their food, water, &c., but could not detect anything to account for their illness. On making further search, I found in the stable some white bryony root, and upon inquiry I ascertained that the carter had during the past week been giving large quantities of this agent to the horses 'to improve their condition.' I have no doubt that this was the cause of the hæmaturia. I am happy to say that they all recovered; but one, an aged mare, continued ill longer than the others, her liver appearing to suffer as well as her kidneys. Aperients, followed by mild, diffusible stimulants, taking care to avoid those that were likely to act on the kidneys, were the remedies employed."

Dr. Lindley, in his 'Flora Medica,' says, that 'the root of the white bryony is acrid and purgative, owing to the presence of an extractive matter called *bryonine*. It produces violent vomiting and purging, tormina, profuse watery evacuations, and fainting. It is not admitted into the British pharmacopœias, but is a frequent instrument in the practice of quack doctors in the country. Burnett says it is sold in Covent Garden market as a discutient to remove the bruise of a blackened eye. Withering considers it one of the best cathartic medicines for horned cattle."

[In Mr. King's experience, the chief action of this root appears to have been on the kidneys. It would be important to ascertain if it also acts sometimes as a violent cathartic, as stated by the authorities we have quoted.]

PARASITIC DERMITIS IN A DOG.

Mr. James Austin, M.R.C.V.S., Exeter, has sent us some desquamating epidermis, &c., from the skin of a dog, which had for six months been the subject of cutaneous irritation.

Mr. Austin says "that although the disease had existed so long, and the itching was always very considerable, still, when the animal was brought under my care, no eruption was visible. The owner despaired of a cure being effected. On making a close examination, I discovered a number of little animals, unlike any I have ever seen before, upon nearly every part of the body. I have succeeded in getting some of these alive, mixed, however, with much dirt and scales of cuticle. I send them by a friend, and hope that they will reach you before they are dead or dried up."

We regret that more than a month elapsed before the small jar, in which these parasites were put, came to hand, and we despaired therefore of finding any of them alive. To our surprise, however, we found three or four still living among the mass of dirt. A slight examination with the naked eye was sufficient to show that these were the larvæ of some insect, and the microscope at once revealed them to be the larvæ of the dog-flea. Further search showed that there were numerous dead larvæ and exuviæ in the mass, and therefore, to facilitate our future examination, the whole was placed in a phial with some diluted spirit, that the organisms might be freed from the dirt and be the more readily selected after their imbibition of the fluid. By this means we have obtained specimens which render the history of the dog-flea perfect and complete. Thus, we have in our possession OVA, showing more or less perfectly the formation of larvæ within them; OVA-CASES, from which the larvæ had escaped; LARVÆ in different stages of their growth; EXUVIÆ, as cast off from time to time from the growing larvæ; PUPÆ, in their various stages of change into the perfect insect, and INSECTS themselves, just brought into active life.

This case we consider to be both interesting and instructive, and no less so to the veterinary pathologist than to the naturalist, as showing that all the transformations of this insect can be completed upon the body of an animal, and as such, the disease induced by fleas would be persistent.

Extracts from British and Foreign Journals.

ATMOSPHERIC SUPPLY OF MANURING MATTER.

Professor Way, consulting chemist to the Royal Agricultural Society of England, recently delivered a lecture before the members on modern researches connected with this subject, which he regarded by no means a merely theoretical one, as it might at first seem; but one fraught with the most practical results in reference to agricultural operations. He glanced at the germination of seeds on surfaces containing little or no depth of soil, until rocks and towers became covered with vegetation—to the forests of Western America, where successive scourging crops of tobacco and sugar were required to destroy the accumulated fertility—and to the coal-beds of various countries, which had their origin in vegetable matter; facts which he thought must strike the most unobservant, that the air, producing as it did these vegetable products, must possess something more than a mere inert mixture of elastic fluids. He referred to the advantages derived by real science, though unintentionally, from the labours of the alchemists in their researches for gold and the elixir of life; but especially to the philosophical and more legitimate investigations of Priestley, Bergman, Scheele, Lavoisier, and De Saussure, whose genius in the direction of their experiments on air was only equalled by their candour and diffidence in deducing their results. These researches had first their application to the phenomena of combustion and animal life, and subsequently to those of vegetation. Professor Way then proceeded to explain the composition of the atmosphere, and the negative character of the nitrogen it contained, as controlling the active chemical nature of the oxygen. He stated that the carbonic acid gas mixed with the atmosphere, though small in proportion to the oxygen and nitrogen, was sufficient in amount to furnish carbon for the constitution of the whole of the coal-fields of the globe He had nothing to remark, as new, on the watery vapour in the atmosphere. The most interesting subject of consideration at the present time was the occurrence of ammonia and of nitric acid in the air, and the mode in which their presence could be rendered still more available to the purposes of agriculture. He then explained how everything organic required by plants could be furnished by these four most

powerful elements of the atmosphere and its aqueous vapour, namely, oxygen, hydrogen, carbon, and nitrogen. He described the recent experiments of M. Boussingault, and also those of M. Ville (splendidly illustrated in a work presented to the Society by the French government), referring to the views on scientific principles of agriculture just published by Professor Liebig, the deductions of Mr. Pusey, the elaborate researches of Mr. Lawes, and the experiments of M. Barral. He alluded to the amount of ammonia in rain-water, dew, and fogs, and to the insufficiency of the methods hitherto employed for ascertaining the proportion of nitric acid in the air. He called attention to the large amount of ammonia constantly taken up by the soil, and washing into the land by rain; and to the great importance, consequently, of exposing the soil in such a manner to atmospheric influence as may best tend to this ammoniacal absorption. Fallowing of land, he remarked, had given way to rotation of crops; but that there was no such thing as a simple resting as fallowing was supposed to imply in this case, for an alteration of the soil under the influence of oxygen was constantly going on. Every interval even, between one crop and another, was in reality a fallow. Land should be laid up as lightly as possible, for the purpose of its aëration. The working of land, with a view to this abundant aëration, was one important means of improvement. He regarded it as indispensable to the full development of the powers of the soil that steam-power should be brought to bear effectively upon its cultivation. The amazing bulk of ammonia locked up in the land itself, could not be taken up by plants, and would, therefore, remain in a form unavailable for vegetation, unless the management of soil tended to release such manuring matter, and bring it within the reach of the roots. He had calculated, from data furnished by some rich loamy land of tertiary drift, that the soil within available depths contained ammonia at the rate of one ton (equal to six tons of guano) per acre. This was a stock of wealth which would repay the most active measures being taken for its release and distribution. He then passed on to the subject of green manuring, and to that of draining, and the importance of a free aëration of the soil, and increased absorption of ammonia, after the water had been duly carried off.

In the discussion which followed, the Rev. L. Vernon Harcourt referred to the manner in which certain fungi absorbed nitrogen and the phosphates during their growth, and yielded ammonia and phosphates to the soil on their death and decomposition. Professor Way explained the

theory of fairy-rings, given by him in the Journal some years ago; and his supposition that the development and expansion of the cells of the fungi attracted their air manure.—Dr. Calvert called attention to the electrical effects produced in the atmosphere by thunder-storms, and to the subsequent rapid vegetation in moorland districts; also to the theory of nitrification in nitre-beds.

On the motion of Mr. Raymond Barker, seconded by Dr. Calvert, the best thanks of the Council were given to Professor Way for the able and interesting lecture he had delivered. The President, on putting the motion (which was carried unanimously), added his tribute of praise, remarking that nothing could more effectually, he thought, call thinking minds into operation than the science and the researches of the able men whose philosophical labours Professor Way had then brought under the review of the meeting. He delighted, as one of the earliest members of the Society, to witness the successful manner in which practice and science were more nearly approaching each other, for the more secure guidance of practical farmers, and for the benefit generally of the agricultural world.—*Mark Lane Express.*

RESEARCHES ON THE COMPOSITION OF FODDER.

By M. Isidore Pierre.

The inspection of the tables contained in this memoir leads us to various conclusions, many of which have already received the sanction of experience, and are justified by the preferences shown by animals.

When we give to animals an artificial fodder of good quality, they eat first the leaves and flowers, then the upper part of the stalk, and finally the lower part, but they leave the latter when amply supplied with food. This observation is most readily made with sheep, because this selection is easier to them than to the larger animals. If we carefully examine what they leave, we shall find neither leaves nor flowers. I shall not discuss the probable causes of this preference, but merely mention the fact, which is well known to graziers.

The flowers and the leaves are the parts which contain the most nitrogen; they contain, in general, twice as much nitrogenous matter as the same weight of the upper part of

the stalks, and frequently more than three times as much as the lower two-thirds of the stalk.

The numbers of the third and fourth tables fully justify the care which all good farmers take to preserve all the leaves and flowers of their fields during the hay-harvest.

Practice and theory agree perfectly on this point, for, in a given weight of fodder, the leaves and flowers alone contain at least half the nitrogenous matters in the whole of the fodder.

By losing a portion of the leaves and flowers, the nutritive value of the fodder will be much diminished. The richness of the nitrogenous matter likewise accounts for the eagerness with which animals seek it in hay, and the appetite with which it is eaten by sheep and animals of the bovine species.

By feeding young animals with after-grass, as is frequently done, we give them not only a food which is more tender and easier of digestion, but we likewise give them a more nutritious element and better fitted to hasten their development than fodder which is further advanced in vegetation. There is reason to think that it is to the presence of a larger proportion of leaves, or to its consisting exclusively of leaves that the after-grass owes the superiority of its nutritive value.

The fifth table likewise shows us that, among green fodder, after-grass still holds the first rank, especially leafy after-grass. In one species of fodder, there will be a difference of 50 per cent. between green fodder cut in flower and the after-grass. Certain late *green* after-grass of *sainfoin* is equivalent, weight for weight, to ordinary meadow hay, with respect to its richness in nitrogenous principles.

Finally, ivy, and especially *furze*, considered in the same point of view, may be placed on an equality with good after-grass of artificial meadows.

The analyses I have just given will doubtless lead to other investigations, the results of wh ch I shall have the honour of presenting to the Academy as soon as I can arrange my numerous materials.

REMARKS ON THE FOREGOING COMMUNICATION. BY M. PAYEN.

M. Payen observed, that the facts mentioned by M. Pierre, in relation to the variable proportions of nitrogen in the same plant, according to the age of the plant and the parts analysed, agree completely with many facts proved in the 800 analyses of manures and other organic substances, which

he published in connexion with M. Boussingault. (See *The Chemist,* vol. iv, 1843, p. 120, &c.)

Thus the differences between the proportions of nitrogen in the straw from Alsace and that near Paris, were found to be, for wheat, from 3 to 5·3; for rye, from 2 to 5. The different amount of nitrogen in the inferior two thirds of wheat straw and the upper third was from 4·3 to 14·2; that between the leaves of the *Madia sativa* having given grain, and the green leaves before the production of the grain, the proportions of nitrogen vary from 6·6 to 15·34 per 1000.

These facts, moreover, apply to a general law which M. Payen intends to lay before the Academy, showing some new facts which will render practical deductions drawn from the estimation of nitrogen in vegetable aliments more accurate.—*The Chemist.*

THE CHARACTERS OF DISEASED ANIMAL FOOD.

On this subject the Imperial and Central Society of Veterinary Medicine of France some time ago proposed the following questions:—

"1. Is it possible to ascertain by examination of butchers' meat (beef, veal, mutton, and pork), whether the animal was perfectly healthy when slaughtered.

"2. Are there any peculiar characters enabling one to determine whether butchers' meat, the animal either being entire, quartered, or otherwise divided, has been obtained from a healthy animal, but whose flesh has undergone changes from atmospheric or other influences, or from an animal which has died from fatigue, accident, want of care, privation of food, &c. Is such meat to be regarded as wholesome or unwholesome? In the latter case, what mischief is likely to be produced by its temporary or habitual use?

"3. Is it possible, from the inspection of an animal, either entire or divided, to determine whether, before dying or being slaughtered, it had been the subject, for a greater or less period of time, of such diseases as peripneumonia, phthisis, rot, measles, dropsy, &c.? If so, show how the traces of these diseases may be recognized.

"4. Ought such meat to be consumed, or to be confiscated and destroyed?

"5. Are there any positive signs by which it may be determined from what animal any portion of butchers' meat has been taken?"

In answer to these questions, one essay only, by M. Soumille, of Avignon, was sent in. The following is an abstract of his replies:—

1. It is possible to ascertain whether an animal is healthy only when it is whole or quartered, except in diseases which manifest themselves in the entire system, such as measles, rot, cachexia, tubercular consumption, and *charbon.*

2. During rainy and misty seasons, meat, changed by atmospheric influences, remains soft; it dries with difficulty; it has a palish colour, and

readily retains the impression of the finger. Such meat decomposes very rapidly, and contracts a putrid odour, which increases with time. M. Soumille has seen it even become black in two days. The meat can be cooked, but it is always soft and tasteless. In stormy seasons, the south winds exercise a pernicious influence on meat, especially lamb and veal. Beef and mutton escape; but they yield a broth deficient in nutritive materials. In winter, during severe frosts, meat is sometimes frozen; it then becomes very rigid; when cut with the knife, drops of coloured fluid exude from each fibre; it resists cooking, and does not cease to yield water. It ought not therefore to be consumed as food, being tasteless and indigestible. In the violent heat of summer, meat soon becomes black and decomposed more or less rapidly; the rapidity of the decomposition depends on the previous condition of the animals and on their food. In Avignon and the neighbourhood, fresh beef sometimes exhales an odour of onions; this is ascribed to the presence in the pastures of a plant of that kind.

The circumstances enabling us to determine whether an animal has died a natural death, are, when it is entire, the presence of disease of the viscera, non-coagulation of the blood in the vessels, accumulation of blood in the vessels of the great intestinal cavities, and sanguineous injection of the vessels of the cellular tissue. Separate portions of the meat are red, yield blood when cut into, and are of various colours on the surface. Nearly the same characters are observed, differing in intensity, in the flesh of animals which have been slaughtered after over-driving or deficient food. M. Soumille insists especially on the injection of the muscular flesh; but he does not consider that any real distinction can be drawn between a piece of meat taken from an animal which has been slaughtered after fatigue and from one which has died of disease. The former may be eaten; the latter ought to be rejected, although, from experiments on dogs, cats, ducks, and fowls, M. Soumille does not think it likely to produce mischief.

3. Examination of the entire animal, so that the viscera may be inspected, is the only means of ascertaining whether it has died of *charbon*, peripneumonia, or consumption. In sheep attacked with rot, examined when whole, the cellular tissue is infiltrated and riddled with small apertures. The flesh of sheep affected with dropsical cachexia is infiltrated with serous fluid, flabby, and colourless. Measled pork is easily recognized by the presence of small, whitish granulations on the cut surface of the meat, especially in the lean portion: on exposure to the fire, a crackling sound is produced by the bursting of the little vesicles. In other respects,—as regards colour, smell, and consistency, measled meat has no peculiar characteristics. M. Soumille does not consider that it resists the process of cooking, that it yields a turbid, tasteless broth, or that it produces indigestion, diarrhœa, or other diseases. On the other hand, he admits that sausages made of it dry with difficulty, continue good for a shorter time, and soon become black and rancid, if not kept in a dry place.

4. M. Soumille would forbid the use of the meat of animals whose leanness is coincident with disease, old age, and paleness of the flesh. He also proscribes, although persuaded of its harmlessness, the meat of animals that have been fatigued, or have not been sufficiently bled before being slaughtered, on account of its tendency to decomposition.

5. The last question received no rigorous answer.

Gazette des Hôpitaux, *October* 14, 1854.

If an investigation of the means of detecting bad food is important in France, it is at least equally so in this country, the natives of which are proverbially more "beef-eaters" than their Gallic neighbours. As an instance of the amount of

animal food which is consumed in this country, we may state that in 1853 there were sold in Smithfield 294,571 oxen, 1,518,040 sheep, 36,791 calves, and 29,593 pigs. The total sale of meat, dead and alive, for London consumption, is estimated at 483,388 oxen, 2,141,393 sheep, 132,976 calves, and 159,052 pigs.—*Quarterly Journal of Public Health.*

EXPERIMENTS ON DECAPITATED ANIMALS.

By A. Nuhr, of Heidelberg.

These experiments referred especially to the functions of the nerves of the head. The author endeavoured first to determine the influence of the facial nerve upon the movements of the soft palate, and to ascertain whether it is by the intervention of the Nervus Petrosus Superficialis that the irritation of the facial nerve is transmitted to the soft palate. He saw this part contract when he irritated the facial nerve at its point of emergence from the cranium, while the contraction did not take place after he had cut the petrosal nerve.

A more interesting experiment is that relative to the action of the common oculo-motor nerve on the movements of the iris. The conducting wires having been applied to this nerve, the pupil was seen *to dilate*, and not to contract, as was expected. The experiment succeeded several times.

Upon animals, the author found that irritation of the nerve re-acted immediately on the muscles of the eye, and produced instantaneous contraction of the pupil; but five minutes later, the irritation of the nerve having ceased to be conveyed to the muscles, the pupil dilated instead of becoming contracted. The author thinks that this dilatation is due, not to the oculo-motor nerve, but to the great sympathetic. He found the same effects ensue by applying the conducting wires to the nerves round the internal carotid artery. He concludes that the oculo-motor nerve *contracts* the pupil, the great sympathetic dilates it.—*Gaz. Méd. de Paris.*

THE VETERINARIAN, JUNE 1, 1855.

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

THE ANNIVERSARY MEETINGS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

We believe that a long time will elapse ere the events connected with the Anniversary Meetings of the Royal College of Veterinary Surgeons, held on the 7th of May last, will be effaced from the memories of those who were present and took part therein.

The business meeting in the morning, held at the College, although not so numerously attended as we hope to see succeeding ones, was, nevertheless, among the best that have taken place, and during it the utmost cordiality of feeling and unity of sentiment prevailed.

The Report for the past year, which we give in another place, will, probably, be read with satisfaction as far as it goes, by many of the profession, although there may be few or no salient points in it. We regret to see it so meagre, and especially as such ample materials for a full and complete report were at the disposal of the committee appointed to prepare it. The system of crowding the entire proceedings of the Council for the year into five or six short paragraphs, is one which has been often complained of, and justly so in our opinion, for it doubtless tends to the continuance of that apathy which the profession, as a body, has evinced in the general concerns of the College. Nevertheless, the appeal made to the members, with reference to the state of the Library and the Museum, will, we doubt not, be liberally responded to, since it is in every sense desirable that these departments should be made perfectly efficient for their intended purposes.

In the council-room was hung an admirable likeness, hereafter to be presented to him, of T. Turner, Esq., first pre-

sident of the College; a position which, perhaps, he was allowed to hold for too long a time; for although we may concede to him a conscientious discharge of the duties of president, yet it is often the case that a change in governmental views is attended with benefit to the body governed; and such was most markedly seen when another took his office. The portrait is of "kit-cat size," and painted by W. Pickersgill, Esq., R.A. The countenance is animated and expressive, and, at the same time, indicative of the energy and determination of the man. No one can look on it without being struck with its resemblance to the original, even though there be a little of the artist's allowed flattery—juvenility—in it; but Sir T. Lawrence once said, "An artist never pleased who painted wrinkles and grey hairs." The College may be justly proud of such a production. We would ask, why may not succeeding presidents be similarly honoured? We trust that this will be the case. It is not necessary to confine these *mementos* to paintings. Busts will form a desirable mode of perpetuating the likenesses of those who have held this distinguished office connected with our profession; and we think there is more than one who is equally deserving with Mr. T. Turner of this mark of respect; yet it was right that with him it should have been begun.

We doubt not that many institutions, now grown old, would be glad to possess memorials of those who have contributed to their advancement and success; and, as the Royal College of Veterinary Surgeons is still in its infancy, and no difficulty presents itself in obtaining portraitures of those who have filled prominent offices and been useful, let the council now devise some plan by which this may be secured, since the wish may arise when it will be too late to be realised.

It is to the dinner, held at the Freemasons' Tavern, in the evening of the same day, that we would now address ourselves. This surely is a never-to-be-forgotten event. A report thereof is given in this number, but it is wanting in some particulars that we wish had been inserted. Most persons however, know the difficulty attendant on matters of this

kind, from an inability to infuse the feelings they possess into others.

As it respects numbers, it was the largest assemblage of the profession that had ever taken place, while it was distinguished, as never a meeting of the same kind had been, by the presence of Royalty; His Royal Highness the Duke of Cambridge being there as a guest. This at once stamped the meeting with interest and importance; while all those who were invited seemed to vie with each other in contributing to the cordiality of feeling that existed, by the interchange of sentiments expressive of the benefits they had derived from veterinary science, of which they professed themselves to be warm admirers, and for its advancement earnestly solicitous; convinced as they were that it is only by a continuance in well doing that the profession can hope to maintain its standing among the liberal sciences of the day; Onwards! onwards! onwards! being its watchword.

To every one of us such an event as that we are recording must prove highly gratifying, but more particularly to him in whose especial honour the dinner took place. Of course we allude to Mr. Field, the then Ex-President of the College, at whose solicitation His Royal Highness attended, whose conduct while in the Presidential chair will be remembered with feelings of much satisfaction, as he has contributed materially to enhance the best interests of our science by bringing about those unions which are so conducive to this desired end.

We have been informed, that no difficulty was experienced by Mr. Field in obtaining the attendance of His Royal Highness. Already he had evinced the interest he felt in veterinary matters by becoming the President of the Royal Veterinary College; he, therefore, without hesitation accepted the invitation, and by the urbanity of his manners during the evening completed the kindness of the act, while at the same time he removed from the minds of all present any apprehension that he was conferring too great an obligation, ready as we are to allow its greatness, or that he felt it was condescending on his part to be amongst us. Such conduct is noble, and bespeaks a mind capable of great

things. Nor do we wonder that by those over whom he has the command he should be so highly esteemed. 'Tis well for a country when those born to high estate, and brought up in luxury and ease, with "all the means and appliances to boot," can, and do, freely hold converse with those whom Providence has placed below them in the social scale, and feel and express an interest in their general welfare.

It is in no spirit of adulation, or hero-worship, servility, or dissimulation, that we have penned these remarks, but to "give honour to whom honour is due," and from a sincere desire to see the veterinary profession continue to advance: at the same time we believe that the more its worth is known to those high in power and station, the more will it be countenanced by them; and that, while it is thus supported, it cannot fail to become all its most ardent admirers and cultivators can wish. May the time be hastened when this shall be fully realised! We are convinced, moreover, that more is effected by kindness and conciliation than by austerity and haughtiness. The latter may engender dread, and frequently it causes resistance that ends in rebellion; but the former will awaken love, the noblest attribute of the Deity, which will prove the highest incentive to duty and to that obedience which "casteth out fear."

Our fervent aspiration is, that, with each returning year, there may take place similar meetings, conducive as they are to bring about that which is so desirable to every right-thinking member of our profession.

ELECTION OF OFFICERS FOR THE YEAR 1855-56.

Our readers are informed that, in accordance with the provisions of the Charter, a Special Meeting of the Council was held on the 14th ult., for the purpose of electing a President, six Vice-Presidents, and a Secretary, for the ensuing year, when W. Field, Esq., was re-elected President, and Messrs. T. W. Mayer, H. Hallen, W. Cheeseman, R. Bowles, J. Fryer, and J. Hargrave, were chosen Vice-Presidents. Mr. Gabriel was likewise re-elected Secretary.

THE PROFESSORSHIP OF PHYSICS, CHEMISTRY, MATERIA MEDICA, AND PHARMACY, AT THE ALFORT VETERINARY SCHOOL.

Alfort has lost one of its greatest glories in the resignation of Lassaigne, the great chemist, who for so many years has added to the lustre which the radiant genii of Fournoy and Duborg had shed over the chair of chemistry in that school.

How few Universities in the great capitals of the world can boast of such a trio as has fallen to the lot of Alfort in the chemical professorship! We would gladly expatiate on this reflection did space and time permit.

We have a few words to say as to the manner in which Lassaigne's successor has been appointed. So soon as his resignation had been accepted, candidates were invited to compete for the chair, by examination, at the expiration of three months. Eight presented themselves. Among them were Messrs. Clément, Saurier, and Hérard, assistants to the chemical professors of Alfort, Lyons, and Toulouse, and Messrs. Chauveau and Guerdon, demonstrators of anatomy at Lyons and Toulouse. When the concours was announced, the first of the two last-named gentlemen was completing a treatise on the comparative anatomy of domesticated animals, the second on Veterinary Surgery. Yet they were able, in the brief space of twelve weeks, to compete for the honour of succeeding to Lassaigne, and that against three professed chemists. With what success may be judged from the fact that, though M. Saurier, obtaining fifty-six points, was declared the successful candidate, M. Chauveau was only three below him, beating by three points the gentleman who for many years had been assistant to Lassaigne. Truly the feat, for a feat it was, speaks loudly for the individuals, but how much more for the state of affairs among French veterinarians as students of chemical science! Even for the concours system the result, in the present instance, testifies very highly. —*Palmam qui meruit ferat.*

APPOINTMENT OF EXAMINERS.

We do not wish to influence the judgment which may be formed of Mr. J. S. Gamgee's letter, published in this number of our journal. One word in justification of the Leader discussed. In its main object it has succeeded, by promoting the expression of a highly prized opinion on a question which avowedly stands in need of consideration; nor do we see that we have any reason but to be fully satisfied with its fate. A polemical writer always purposely leaves a much wider margin for discussion than others could afford to do. The project of reform is sweeping, we admit; but what reformer, in the strict sense of the word, was ever moderate?

ROYAL COLLEGE OF VETERINARY SURGEONS.

At a QUARTERLY MEETING, held APRIL 11,

Present—Messrs. Braby, Cherry, Dickens, Ernes, Mayer, Robinson, Stockley, Turner, Varnell, Wilkinson, and Withers; Professor Spooner, and the Secretary.

The President in the Chair.

The minutes of the previous meeting were read and confirmed.

Prof. Spooner proposed Mr. Wm. Mavor, of Park Street, as a member of the Examining Board, in the place of the late Mr. William Percivall.

Mr. Varnell seconded the motion.

Mr. Cherry proposed the appointment of Mr. William Field to the vacant chair.

Mr. Field, in answer to a question from Prof. Spooner, said, that if he were elected, he would take the pathological department, but not the anatomical.

Prof. Spooner said it was necessary to elect a gentleman who would undertake the anatomical department; which was, in fact, the only one vacant in the Board.

In the discussion which followed it was contended that the Council had no power to elect an Examiner to any particular department or division of the Board, such arrangement being left to the Examiners themselves. It was alleged that the Board often required rearranging, when, by the absence of a member, a vacancy occurred.

Mr. Gabriel having promised to officiate at the anatomical

table if Mr. Field was elected, Prof. Spooner withdrew the nomination of Mr. Mavor. A ballot was then taken, and Mr. Field was duly elected.

Prof. Spooner expressed a hope that another vacancy would arise from the resignation of Mr. Wilkinson, who, as Principal Army Veterinary Surgeon, was necessarily an ex-officio member of the Board.

Mr. Wilkinson tendered his resignation, but, at the request of the Council, consented to act at the forthcoming examinations.

Complaints were made that the examinations were not efficiently conducted, owing, chiefly, to the insufficiency of time allowed to the Examiners.

Mr. Ernes gave notice that he should move, that a special report be made by the Board of Examiners, to the Council, at the end of each sessional year.

Messrs. Ernes, Braby, and the Secretary, were named as a committee, to prepare the annual abstract of the proceedings of the Council to be presented at the yearly meeting.

Mr. Broad and Mr. Stevens were appointed auditors of the accounts.

The Treasurer's report was then read, and the authority of the Council given for him to draw cheques to the amount £32 19*s.* 6*d.*, to meet the current expenses.

The Secretary stated that the following gentlemen would retire this year from the Council, in accordance with the provisions of the Charter: Messrs. Gabriel, Braby, Lepper, Silvester, Cherry, and Dickens; and that a further vacancy, which had been caused by the death of Mr. Percivall, would have to be filled up.

The following gentlemen were then nominated, in order to bring their names, with others for election, before the annual general meeting: Messrs. William Mavor, Thomas Stanley, Jones, Gabriel, Braby, Silvester, Dickens, Cherry, Wm. Richardson (Peterborough), Lepper, Rose (Warwick), Legrew and Broderick.

The Council then adjourned.

At a SPECIAL MEETING of the COUNCIL, held APRIL 25.

The PRESIDENT in the Chair.

Present—Messrs. BRABY, ERNES, SILVESTER, TURNER, WITHERS; Professors SPOONER, SIMONDS, and MORTON; and the Secretary.

The minutes of the preceding meeting having been read and confirmed,

The Annual Abstract of the Proceedings of Council, as prepared by the Committee, and the Annual Balance Sheet, were laid on the table, when,

On the motion of *Mr. Turner*, seconded by *Mr. Withers*, they were unanimously received and adopted.

A lengthened discussion took place as to the desirability of shortening the *interregnum* that occurs between the Annual General Meeting and the First Special Meeting of Council for the election of Officers, when

It was proposed by *Prof. Spooner*, and seconded by *Prof. Morton*, with a view only to bring the subject on for discussion, "That the first Special General Meeting of Council in each year for the election of Officers be held immediately after the Annual General Meeting."

The motion was, on being put from the Chair, immediately negatived.

After some complimentary remarks by *Mr. Ernes* on the manner in which the Presidential Chair had been filled during the past year, it was moved by that gentleman, "That the thanks of the Council be given to the President, *W. Field*, Esq., for his able and zealous services in the Chair."

The motion, on being seconded by *Mr. Turner*, was carried unanimously.

Messrs. Braby, Ernes, and the Secretary, were named by the President as the Committee of Supervision of this and the preceding meeting.

Wm. Ernes,
Edw. Braby,
E. N. Gabriel.

THE ELEVENTH ANNUAL GENERAL MEETING.

The Annual Meeting of the profession was held on Monday, the 7th of May, 1855, at the College, 10, Red-lion-square, W. Field, Esq., President, in the Chair. The following members were present: E. Bailey, Henry Bath, H. T. Batt, Edward Braby, W. Bland, James O. Broad, W. Burley, Thomas Cave, Edmund Charles, Arthur Cherry, William Cooper, Harry Daws, Charles Dickens, William Ernes, E. N. Gabriel, W. J. Goodwin, John B. Henderson, W. Helmore, James Hall, Robert Hunt, Thomas Jex (1st Life Guards), F. King, W. Lacey, Henry Lepper, Thomas Walton Mayer, Thomas J. Merrick, James Moon, W. Meginnis, W. M'Kenna, W. J. Morton, R. Pritchard, William Robinson, Charles T. Shorten, F. R. Silvester, J. B. Simonds, Charles Spooner, Charles Steel, Peter Taylor, James Turner, Page Wallis, J. Wilkinson, Samuel

H. Withers, Joseph Woodger, Edward Woodger, and Henry Wragge.

In opening the proceedings, *The President*, after calling the attention of the meeting to the chief business of the day, directed the notice of the members to a handsome Portrait (suspended in the room, and subscribed for by many of the profession) of Mr. Thomas Turner, the first President of the College.

The minutes of the previous annual meeting were read and confirmed.

The Secretary then read the following abstract of the proceedings of the Council during the past year, and likewise the Treasurer's report.

Abstract of the Proceedings of the Council of the Royal College of Veterinary Surgeons, during the Year 1854-5.

The current of events connected with the proceedings of the Council of the Royal College of Veterinary Surgeons has flowed on, during the past year, with little or no interruption, and although it may not have been swollen by events of great importance or marked by extraordinary success, still its progress has not been impeded by any untoward circumstance, or diverted from its legitimate course—the diffusion and advancement of Veterinary Science.

The residence selected by the Council has been found fully to answer all the purposes required. The deliberations of the Council and the examinations by the Board, together with the perhaps less important but still essential inquiries of the various Committees, have been carried out by the accommodation now afforded not only without "let or hindrance," but with a degree of comfort and convenience very different from that found in those places which the College had hitherto been obliged to have recourse to. Nor is this the limit of the advantages of the body corporate possessing a "home" as well as a "name," for the Annual General Meetings of the profession are held within its walls, and the most gratifying proof of its capabilities for all required purposes was evinced on the occasion of a most liberal and spirited Soirée given by our esteemed President, Mr. W. Field, at which 150 gentlemen were present, constituting a *réunion* of a considerable portion of all that is eminent in the medical and collateral sciences.

The Library and Museum are increasing in value: the former contains between 300 and 400 volumes, and the latter above 200 specimens, many of them being rare and valuable. The list of donors, however, to these collections is at present by no means so extensive as could be wished.

Amongst the contributors to the Library are Messrs. Ernes, Field, Goodwin, Gabriel, King, Lee, Morton, Pecch, Percivall, Simonds, and Solly; and to the Museum, Messrs. Austin, Braby, Dickens, Goodwin, Gabriel, Henderson, Lepper, Percivall, and Woodger. May these lists be more than quadrupled during the ensuing year, and the collections so enriched that they may be worthy of belonging to the Royal College of Veterinary Surgeons.

Eleven deaths have been reported during the year. Among them we find the late Principal Veterinary Surgeon to the Army, Mr. F. C. Cherry, one of the oldest members of the profession, he having passed in 1803. Our late universally esteemed and respected Treasurer, Mr. Henderson, is another. He was a member of the Committee appointed to obtain the Charter, and one of the original Members of Council; the duties of which he most constantly and conscientiously discharged. He was a Vice-President in 1847, and for the last four years of his life he filled the responsible office of Treasurer. The arrangements and fittings up of the College were to him subjects of untiring care and interest, and since his death his valuable collection of specimens in Natural History and Pathology has enriched the Museum of the College.

A loss still more generally felt by the profession has been the death of Mr. W. Percivall—he also was one of the Committee, and an original Member of the Council, as well as of the Board of Examiners. The zeal and energy he displayed in the earlier progress of the chartered body will not be forgotten by those with whom he co-operated; nor was it till ill health had seriously undermined his constitution that he retired from unremitting attention to his duties. It is, however, more especially as a Member of the Board of Examiners that the want of his valuable assistance will be more seriously felt. He filled at that Board the Chair of Equine Anatomy and Physiology, the important duties of which he was most fully qualified to discharge. Not only had he to make his own investigations, but he was constantly appealed to by the Medical Examiners at the same table as to the correctness of the answers given to their questions on descriptive anatomy. As an author he is too well known, and his value is too generally recognized, to require any eulogium here; suffice it to say, his works comprise the most scientific and complete *resumé* of Veterinary Science of the day. The vacant seat in the Board of Examiners occasioned by the death of Mr. W. Percivall, has been filled up by the election of Mr. W. Field.

By the Register it will be found that 32 pupils have received their diplomas during the year, making the total number who have passed the Board of the Royal College of Veterinary Surgeons, since the obtainment of the Charter, 512. A new register has been issued during the year, corrected up to the 1st of June, and which will, it is believed, be found to be as correct as the ever varying circumstances connected with fresh admissions, deaths, and changes of residences render possible. The Registrar has still to beg the favour of any error or change being notified to him, in order to its immediate correction.

The finance department, if not flourishing, is at least satisfactory. The balance in hand of last year is increased, although but slightly, and this, considering that the extra expenses of completing the lease, the disbursement of the lawyer's accounts, and the cost of the reissue of the Register, amounting together to between £70 and £80, had to be met, and the current expenses of the year up to the present date to be liquidated, will not be considered as unpromising for the future. The balance in hand, as shown by the annexed balance sheet, is £150 7*s*. 5*d*.

No further steps have been taken during the past year as to the obtaining of a bill of exemptions or prohibitions. But the appointments to Her Majesty's and the Honorable East India Company's Services have been watched with unremitting care, and it is still hoped that the boon so justly contended for by the profession, of having none but members of the body corporate appointed to those important positions, will ultimately be obtained.

In conclusion, your Council have to state that if their proceedings lack that spirit of novelty and excitement which at one period distinguished them, the want is more than compensated for by the cause producing it, namely, that unanimity of feeling and singleness of purpose which recognize no other object than the advancement of the profession. Should the list of contributors to the Library and Museum increase; should the contents of these departments be found worthy of the approval and support of the profession, and should the attention of the members, through their media, be more directed to investigation and research, no trifling good will have been accomplished; and the "local habitation" so long desired being now established, may it be so freely and unreservedly made use of by every individual member of the profession, that its absence would be felt to be a blank in the Veterinary commonwealth.

E. N. Gabriel, *Secretary*.

PROFESSOR MORTON, TREASURER, *in Account of Cash with the Council of the Royal College of Veterinary Surgeons.*

Dr.

		£	*s.*	*d.*
1854.	To balance from last year	134	7	9½
	„ Examination Fees	425	5	0
	„ Cash returned from Board of Examiners	17	14	0
	„ Copies of Register	4	8	0
		£581	14	9½

Cr.

		£	*s.*	*d.*
1854.	By Fees drawn for Board of Examiners	120	12	0
	„ Allowance to Secretary	60	0	0
	„ Rent	60	0	0
	„ Wages	40	0	0
	„ Rates and Taxes	32	14	0
	„ Solicitor's Account	22	19	8
	„ Expense of Lease	10	4	2
	„ Printing	18	19	0
	„ Advertising	9	12	8
	„ Insurance	9	2	6
	„ Coals, Gas, and Wood	8	12	0
	„ Petty House Expenses	6	5	0
	„ Reporter	7	7	0
	„ Stationery and Postages	7	0	0
	„ Petty House Repairs	7	19	6½
	„ Furniture	5	17	10
	„ Diplomas	4	2	0
	Balance in hand	150	7	5
		£581	14	9½

We, the undersigned, have audited the above, and found them correct.

April 20th, 1855.

JAMES BROAD.
HENRY R. STEVENS.

After the reading of these reports,

Professor Morton said, that, as Treasurer, he felt extremely gratified to find that, at the end of this his first year of office, there was a small increase of the balance in hand over that of the previous year. It was, however, still more gratifying to reflect that certain items of expenditure would not again appear in the yearly account, such as the Solicitor's charges, and expenses of the lease; moreover, that the receipts from the examination fees would be much larger during the coming year than they had been in the past. Those fees had at the present time amounted to £425 5*s.* and there was now in the banker's hands a sum of £580 17*s.* 6*d.* (Applause.)

Mr. Ernes suggested that a portion of the balance in hand should be devoted to the purchase of new works for the library, and the re-binding of those that required it.

Professor Spooner said, he thought the allusion made in the report to the steps which had been taken with reference to the admission of non-qualified persons as veterinary surgeons into the service of Her Majesty and the East India Company was somewhat vague and unsatisfactory, and he should be glad to know the grounds on which the hopes of ultimate success, expressed in the report, were founded.

The Secretary said, that no active measures had lately been taken in the matter, with the exception of the appointment of a Committee, consisting of Messrs. Stockley, Robinson, and Silvester, to watch the question; and he was sure that those gentlemen would lose no opportunity for action that might present itself.

Mr. Goodwin observed that as the principal veterinary surgeon, Mr. Wilkinson, was present, he could perhaps give the meeting some information as to the feeling at the Horse Guards on this subject.

Mr. Wilkinson expressed a hope that no precipitate movements would be made, and said, that he believed he had it in his power to bring about a reconciliation between the College and the Edinburgh School, which would render unnecessary any appeal to the Government on the subject. He should feel it his duty to bring this matter before the Council at the earliest opportunity.

Mr. Hunt asked if there was any probability of a satisfactory arrangement being made in reference to the East India service?

Professor Spooner said, that he had no reason to doubt but that the same arrangements would be made for both services.

Mr. Hunt, considering these statements highly satisfactory, had great pleasure in moving the adoption of the report.

Mr. M'Kenna seconded the resolution, which was unanimously agreed to.

Mr. Edmund Charles and Mr. Peter Taylor being chosen Scrutators, the election for seven new Members of Council, took place.

The undernamed retired by rotation, but were eligible for re-election, viz.: Messrs. Gabriel, Braby, Lepper, Silvester, Cherry, and Dickens. One had also to be chosen in the place of the late Mr. Percivall.

On the ballot taking place, the following were returned, of whom the seven first named were elected on the Council, being at the head of the poll:

Mr. Gabriel.	Mr. Stephens.
„ Braby.	„ Lawson.
„ Silvester.	„ Broderick.
„ Cherry.	„ Stanley.
„ Dickens.	„ Richardson.
„ Legrew.	„ Rose.
„ Jex.	„ J. Lucas.
„ Shorton.	„ R. Lucas.
„ Mavor.	„ Kent.
„ Mayer.	„ Bailey.
„ Lepper.	

The President then officially declared the election to have fallen upon Messrs. Gabriel, Braby, Silvester, Cherry, Dickens, Legrew, and Jex.

It was next decided (by lot) that Mr. Legrew should fill the vacancy occasioned by the death of Mr. Percivall; his election being thus for Mr. Percivall's unexpired term of office only.

On the motion of *Mr. Mayer*, seconded by *Mr. Lacey*, the thanks of the meeting were unanimously accorded to the President for his services in the chair.

The proceedings then terminated.

In the evening of the same day

A DINNER,

in honour of the retiring President of the College, Mr. W. Field, took place in the Hall of the Freemasons' Tavern, which was attended by 110 members of the profession and their friends. The chair was occupied by E. Hutchins, Esq., M.P. His Royal Highness the Duke of Cambridge condescendingly accepted an invitation. Among the guests we observed Col. Tyrwhitt, Aide-de-Camp to His Royal Highness;

S. Christy, Esq., M.P.; Capt. W. Peel; Sir James Tyler; Jacob Bell, Esq.; Baron Webster, Esq.; F. Bridgman, Esq.; — M'Evily, Esq.; R. S. Stuart, Esq.; J. Reddish, Esq.; G. Robinson, Esq.; and — Dowling, Esq. Professors R. Quain and S. Solly. P. Gowlland, Esq., and H. Lee, Esq., Hospital Surgeons. The Professors of the Royal Veterinary College; the Principal Veterinary Surgeon to the Army, and the Senior Veterinary Surgeon to the Ordnance. The Members of the Court of Examiners, and the Council. The Secretary of the College, and the leading members of the profession both in town and country.

On the removal of the cloth, and grace having been sung by the professional vocalists, the customary loyal toasts were drunk with befitting honours, followed by the National Anthem, and other appropriate songs and glees.

The Chairman then said: Gentlemen, the next toast which I have to propose is one which I am sure you will drink with the utmost cordiality, it is the health of His Royal Highness the Duke of Cambridge. (Loud cheers.) There is no member of the profession present, who will not feel deeply the honour which His Royal Highness has done them in coming here on this occasion, and more especially must that be felt by my excellent friend, your President, on my left.

Gentlemen, His Royal Highness lives in the hearts of his countrymen, not only from his private character and virtues, but on account also of his great military services. (Cheers.) He was pleased to say, at the dinner at the Mansion-house the other day, that he did not know why the people of this country estimated his conduct so highly, as he had merely done his duty. Gentlemen, that is not exactly the estimate which we put upon his services. We fully admit that he has done his duty most valiantly and gallantly, for throughout the Crimean campaign His Royal Highness on every occasion led his division with consummate valour and ability. Especially was this so at the battle of Inkermann, where his division had to bear the brunt of forces six times their number; and wherever the fire was the hottest, and the danger was the greatest, there was His Royal Highness in the midst of his troops, cheering them on, and urging them to those great deeds of arms which will never be forgotten in the history of our country. (Cheers.) Besides His Royal Highness is pre-eminently distinguished by the great solicitude which he always feels for his soldiers. (Loud cheers.) There is no man in his division, however low his position may be, who does not look on him as a friend, and

as one who will cheerfully do him any service that he can. You will join me, therefore, in drinking with the greatest enthusiasm the health of His Royal Highness the Duke of Cambridge. (Loud cheers.)

His Royal Highness, in acknowledging the toast, said: Mr. Chairman and Gentlemen, I feel extremely obliged for the very flattering terms in which my health has been proposed, and by the kind manner in which it has been received by you. So much has been said about me that I really hardly know what to say in reply. I certainly have, on former occasions, stated that I considered my services to have been such only as I was called upon to perform in my position as a general of the army. I still venture to think that I did no more than my duty; and if, in so doing, I have been fortunate enough to obtain the good opinion of the people of this country, I regard it as a complete reward for all the hardships, the fatigues, and the anxieties which, in a position such I held, every man must have encountered. (Cheers.) Gentlemen, I certainly do flatter myself that the men who were under me had full confidence in their leader; and, on the other hand, I have the proud satisfaction of knowing that, with such men and such officers as I commanded—I say such officers, for, after certain remarks that have been made, I must observe that, while no man admires the British soldier more than I do, I believe the officers have done their duty equally well.—Again I say, with such officers and such men as I have had the honour to lead, anything that is possible for soldiers to do, a general may expect those troops to perform. (Loud cheers.)

Gentlemen, I have had very great satisfaction in attending here on this occasion. I was requested by my friend Mr. Field to meet this large body of the members of the veterinary profession, and I am delighted to have the pleasure of seeing you in this hall. (Cheers.) For Mr. Field I have the greatest possible regard. I am aware that he is esteemed by you all. He is not only a man of great eminence in his particular vocation, but I know, from having met him on various occasions elsewhere, that he takes great interest in the charitable institutions of this metropolis, which I consider reflects the greatest credit upon him.

Gentlemen, I assure you I know the value of the profession with which most of you are connected. As regards the army, it is of the greatest possible service. (Hear, hear.) In my position in the army I have had the advantage of becoming acquainted with many members of your profession, and I am glad to see several old friends of mine here to-day.

I entertain for them the highest opinion, and duly appreciate the importance of their services. I have seen them perform those services with the greatest possible credit to themselves in times of peace; lately I have witnessed their performance of them with cheerfulness and zeal, and under great difficulties, in time of war. (Hear, hear.) I therefore feel deeply interested in your profession, and I trust that the College, in honour of whose President we have met this evening, may continue to prosper and to extend its usefulness from year to year. (Loud cheers.)

The Chairman then proposed "The Army and Navy."

The Duke of Cambridge, in acknowledging the toast, said: "I am sorry to intrude upon you again, but having been called upon to respond on the part of the army,—and the navy, too, I believe,—I venture to return thanks for the honour you have done them in drinking their health. I have already made one or two observations with reference to the army, which will apply to this toast, and therefore I need only say that I hope that what my honorable friend the chairman has stated is true, that a forty years' peace has in no way led to its deterioration; and that the gallant deeds of that army are as satisfactory to the country as were the deeds of the army in former times. (Cheers.) I am as convinced as that I stand before you now, that whatever duty the army may be called upon to perform, however difficult and dangerous that duty may be, it will be as well performed as it is possible to be with the limited means we possess. An observation has been made with regard to the navy with which I entirely concur. I have seen the anxiety of the officers of the navy to perform whatever portion of duty they may be called upon to discharge, and it has often been a source of the deepest regret, that they have not been able to do more than they have. But that is a matter over which they, as a profession, have had no control. The chief brunt of the operations has fallen upon the army, because the navy of the enemy, both in the Black Sea and the Baltic, has declined to come out of the harbours. (Hear, hear.) I am perfectly satisfied that should the enemy this summer attempt some new plan, and "come out," the navy is in a position to give us a good account of its doings. You may easily conceive that I look with the greatest anxiety from day to day for accounts from the seat of war; but come what may, I have one conviction as strong as any I ever had, which is, that the British army and the navy also will do full credit to their country." (Loud cheers.)

The Chairman:—The next toast is one which I have no

doubt you all anticipate; it is "The health of the President of the Royal College of Veterinary Surgeons," my friend Mr. Field. (Loud cheers.) Before I call on you to drink this toast, perhaps you will allow me to make a few observations on the rise and progress of Veterinary Science in this country. I dare say you are all aware that up to the end of the last century, the veterinary art was at a very low ebb in England. There were no schools or colleges of any kind in which it was taught, and in fact, the practice of veterinary surgery was almost entirely in the hands of farriers and grooms; the consequence of which was, that the treatment of horses was not only very unscientific, but often barbarous and cruel. I remember, when I was a boy, hearing of the cruelty of burning out the lampass, and breaking off a splint with a hammer.

The French were before us in recognizing the importance of the science, and they established in the year 1761, the *Ecole Vétérinaire* of Lyons. I have no doubt that that had a great tendency to foster the art in this country, for we find that when the Royal Veterinary College was established, I believe somewhere about the year 1790, the first professor was a Frenchman, M. Viel de St. Bel. At his death, he was succeeded by Professor Coleman, who, in the earlier part of his time, was associated with Mr. Moorcroft. Thence you may date the progress of the Veterinary art, because lectures, demonstrations of anatomy, and other necessary aids to instruction were systematically entered upon. The Veterinary College had at that time the power of passing candidates by a Court of Examiners, composed of the leading members of the medical profession, and the teachers of the school.

About the year 1824, a similar institution was established at Edinburgh.

In the year 1841, my friend, Mr. Field and many other distinguished veterinary surgeons, thought it was necessary to take measures for the recognition of the profession by the government, and thus to give a higher standing to its professors than that which they previously possessed; for you must all be aware of the high attainments required by a first-class veterinary surgeon. He must understand the laws of chemical affinity, otherwise how can he know, when mixing two substances which of themselves may be harmless, he may not be forming one of dangerous quality? He must be acquainted, likewise, with medical botany, and understand the characters of the plants which he has to use: he must be also a comparative anatomist,

and be well acquainted with the structure of the horse and other domesticated animals. I have no doubt that there are many other attainments which educated veterinary surgeons require, but which do not at this moment occur to me. However, as I have said, Mr. Field and others, being desirous of putting the veterinary profession upon the same footing with other professions, petitioned Her Majesty for the establishment of the Royal College of Veterinary Surgeons, and in the year 1844, Her Majesty was pleased to grant a charter for that purpose; and from that time the College has had the sole privilege of granting veterinary diplomas; so that now the veterinary schools stand pretty much in the same relation to the Royal College of Veterinary Surgeons, as the hospitals of London do to the Royal College of Surgeons.

There is no doubt that the establishment of this College has been of the utmost benefit to the science. The Council has been most judicious in the selection of Examiners and Presidents, in proof of which, I need only give you the names of Mr. Turner, Mr. Robinson, Professor Sewell, Mr. Goodwin, and last, though not least, our excellent friend Mr. Field. (Cheers.) Now, gentlemen, Mr. Field's family has been long distinguished as veterinary surgeons. You are all aware that his father was one of the most eminent men in London, and his brother, Mr. John Field, was also a man of the highest attainments, and I am happy to say that your President is training up his two sons in the same profession, and I hope they will live to emulate their father in his good deeds. It is hardly necessary for me to tell you, how well Mr. Field has filled the presidential chair of the College. You all know his urbanity and his great liberality, and how anxious he has been to elevate the profession. I need only refer you to the *conversazione* which he was the first to suggest in connexion with this College, by means of which the members of the different scientific bodies of London were associated together; thus bringing his own profession into union with them. (Cheers.) If I wanted any other instance of his efforts to benefit the profession, I might appeal to the meeting this day; to the honour which His Royal Highness has done Mr. Field in coming amongst us; and to the honour you yourselves have done him in attending in such numbers on this occasion. None of you can doubt that Mr. Field occupies a distinguished position in his profession, and he has attained to this not only by his talents and abilities, but by a course of strict honesty and integrity. There is no man in London who has had a more extensive practice; and I believe in one branch

of the art he is pre-eminent—namely, in the examining horses on purchase. No horse has so good a warranty as when it has been passed by Mr. Field, and I can safely say from my own knowledge, that he shows no fear or favour, and that he would pay no more regard to a friend or a customer, when giving his opinion, than he would to the most perfect stranger. There are certain dealers who entirely decline sending their horses to him, and they say, "If you want to send the horse to Mr. Field, you can't have him, for he will be sure to find some fault with him." Now I would beg to recommend gentlemen who get that answer not to buy, for it is no evidence that Mr. Field is wrong, but it shows how few sound horses there are in the world. When we remember the great fatigue horses have to undergo, the alternations of heat and cold to which they are exposed, and the ill usage and cruelty to which they are often subjected, we may be sure that many diseases will be handed down to their progeny, so that the reason why so many that pass through Mr. Field's hands are declared unsound, is, as I have said, because there are so few sound horses in existence. Let a man undergo the same examination that a horse undergoes in Mr. Field's yard, and I am sure there is not one that would pass through the ordeal (laughter), not even if he had to be passed for the army.

It is not in his profession only that Mr. Field is distinguished, for he holds a high official position in his parish, one of the most populous in the metropolis, namely, Marylebone. That is, no doubt, a high honour, and one which I am quite sure Mr. Field fully appreciates. Then if you take Mr. Field in his private life; in his character as a country gentleman, he is distinguished by the greatest liberality and hospitality, and by his marked kindness to all around him, especially to the poor. I am sure then, you will cordially join with me in drinking his health, and long life to him.

The toast having been drunk,

Mr. Field, in replying, said he felt deeply the honor which had been paid to himself and the profession, by the presence of the Duke of Cambridge, and that he was proud of the good opinion which His Royal Highness had expressed of him. He thanked the Chairman for the flattering terms in which he had introduced the toast, and the gentlemen present for the cordiality with which they had received it. He concluded by proposing the health of the Chairman.

The Chairman responded, and proposed "The Royal College of Physicians, and the Royal College of Surgeons."

Mr. Solly acknowledged the toast. He said, the Royal College of Surgeons had not only always endeavoured to do

its duty to its own members, but he was sure it felt towards the Veterinary profession as it ought to feel towards the professors of a sister art (cheers). Both Professor Quain and himself were gratified in having been elected by the Royal College of Veterinary Surgeons as Examiners, regarding it an honour to be the successors of such men as Sir Astley Cooper, Mr. Cline, and Mr. Liston. Ever since he entered the profession he had felt an interest in comparative anatomy; and he remembered thirty years ago attending the lectures of Professor Coleman in Guy's Hospital, since which he had devoted much of his time to the anatomy and physiology of the lower animals. Before sitting down, he begged to propose, "The Veterinary Schools and their Professors." They were only honoured with the presence of the Professors of the London School, but he believed the Veterinary School in Scotland did equal honour to the art. With regard to the pupils who presented themselves for examination in London, he was convinced that they did great credit to Veterinary science and their teachers. If now and then an incompetent young man came forward, it was not the fault of the Professors, and if the students did not present themselves until the professors gave them leave, they might all reach that high position which some at present have attained. Many of the students exhibited an amount of knowledge which would do credit to any in human pathology and anatomy. He had been connected with the School at St. Thomas's Hospital, and therefore knew what students were; and he was certain that those who came from the Royal Veterinary College for examination, equalled any that could be produced from any hospital in London. Therefore, you will doubtless do all honour to the professors and the schools, and thus uphold your profession. (Cheers.)

Professor Spooner, in acknowledging the toast, said, Mr. Chairman, in behalf of my colleagues and myself, I beg to thank you most sincerely for the honour you have conferred upon the Professors in drinking their healths. Gentlemen,—members of the Veterinary profession,—to you I would say, that this indeed should be the proudest night of your lives. (Cheers). Never before was the profession so highly honoured as it is now; and be it remembered, that honour is conferred upon us through the medium of him, whom, as a corporate body, we have selected to preside over us. The presence of His Royal Highness the Duke of Cambridge, however, should be appreciated by us, not only from the fact, that he appears here as the guest of our respected President, but also as the President of the Royal Veterinary College of St. Pancras.

(Cheers). Gentlemen, His Royal Highness has been pleased to say, that he attaches great importance to the services of our profession, as practised by those members of it who are appointed to the army. I am sure that he speaks the sentiments of his heart when he makes use of that expression; and I am satisfied that we generally, and especially the Veterinary Surgeons in the army, feel deeply the compliment that he has been pleased to pay the profession. It is, indeed, gratifying to us, after having heard of the gallant deeds of His Royal Highness in the battle-field, to find that, no sooner does he appear in this country, than he is first and foremost amongst the aristocracy to stand forward in support of the arts and sciences. All whom I am addressing must be well aware, that as teachers our duty is an onerous one; at the same time we think ourselves fully repaid when those who have been instructed by us show by their conduct in after life that those inculcations which they received while under our tuition are remembered by them. Mr. Solly has stated that in his office as examiner, he has been preceded by Sir Astley Cooper, and Mr. Liston; and speaking of the aid received by us from our elder sister, the medical profession, he might have taken us further back than the names of those eminent men will lead us, for if we revert to the time when the Royal Veterinary College at St. Pancras was first instituted, we shall find that he who stood foremost in lending a helping hand to the then infantile art, was the ever to be remembered John Hunter. (Cheers.) Since that period we must all admit that the most eminent members of the Royal Colleges of Physicians and Surgeons have ever been ready to lend their aid towards elevating us to that position to which we have a right to aspire, and for which most of us have been endeavouring, I am sorry to say, hitherto in some measure in vain, to acquire. Unquestionably, the charter of incorporation which was obtained in the year 1844, is to be viewed as a stepping-stone to assist in placing us in that position; and it is my sincere belief that, the Professors in both the Schools, although at present some little discord prevails between them and the corporate body, are anxious to assist the Council in conducting the affairs of the corporation in a way that will lead to the desired end—the advancement of Veterinary science. And I cannot doubt, that meetings like the present will have the effect of bringing about that unanimity without which it is perfectly useless to expect anything like progress. In vain may we hope, while we are opposing each other, to obtain that respect and confidence from the public, to which the nature

of our profession, when properly pursued, gives us so legitimate a claim. (Cheers.)

The Chairman: The next toast on my list is "the Royal Agricultural Society of England;" to this I beg to add the health of Professor Simonds.

Prof. Simonds, in responding to the toast, said: Although I am somewhat connected with the Royal Agricultural Society, I could not have anticipated that this compliment would have been paid me. You are all aware that the Royal Agricultural Society has been a great promoter of veterinary science; and I believe that much of the advancement which has of late years been made in our knowledge of anatomy, physiology, and pathology, using those terms as applicable to other animals besides the horse, is due to this national society. This is not, I am aware, saying very much for our profession. We have just heard, and truly so, that, in the time of John Hunter, much was done to inculcate a knowledge of the diseases of the lower animals; although Hunter did not confine his researches to the horse. It remained for those who came after him to circumscribe our knowledge, and limit it to one animal. When, however, we see the progress that has been made of late years in the opposite direction; when we find brought under our professional notice animals worth from £400 to £500 each, we must be fully satisfied that the agriculturalist will not be content until he has a medical attendant on all his animals quite equal in knowledge and skill to the person he consults with respect to the diseases of his horses.

I hold, sir, that the Royal Agricultural Society is of still greater benefit in a national point of view, for no disease at all likely to decimate our flocks and herds escapes its notice. Our oxen and our sheep form the food of the people; and we all know how essential it is for the well-being of that class whence comes the chief strength of our brave army and gallant navy that it should be supplied with pure and wholesome food. We must look, therefore, to the influence of the Royal Agricultural Society, for it is among those animals that it takes the deepest interest in, that epizootic affections generally prevail. It may not be known to you that the French government have applied to this Society to aid them in an inquiry into the health of the cattle sent from Turkey to the Crimea, it having been stated that a disease of a very fatal character prevailed amongst the animals, rendering them unfitted for the food of the allied army. As a profession especially devoted to a study of this kind, we only heard this important inquiry indirectly, and through the Royal Agri-

cultural Society we have been asked to give our assistance. This fact shows you the influence which the Society possesses abroad as well as at home, and how much importance is attached to its connexion with veterinary matters. Surely this may be taken as an assurance that it will do its utmost to promote the interests of our profession.

Mr. Christy: Mr. Chairman and gentlemen, I have the honour to propose to you the healths of the Principal Veterinary Surgeon to the Army, and the Senior Veterinary Surgeon to the Ordnance. I believe Mr. Wilkinson has but lately succeeded to the position which he now occupies. I am sure he will find that he has an arduous task to perform, and I hope he may be successful in answering the demands which at present exist for his active and assiduous labours. Mr. Stockley is a gentleman who has had long experience, and he has performed very valuable services to his country. I do not know whether he has experienced any of that *paralysis* which is said to have pervaded some of our departments; but if he had been called upon to exercise more speed, and to put forth increased exertion, we should not have had so many difficulties to encounter. We must, however, remember that he is only the servant of those above him, though the service which he has to perform is of a very important nature.

Mr. Wilkinson, in reply, said: I beg to return you my most sincere thanks for the manner in which this toast has been received. Allow me, however, to say, that this being the first time I have had the honour of meeting my professional brethren since my appointment to the office I hold, and although I receive a part of your kind cheers as a personal compliment to myself, in the main I have no doubt that the compliment is paid to the office I fill. The presence of our illustrious guest prevents my saying how much I am indebted to His Royal Highness for that office. The pride of my life has been to act as a subordinate under His Royal Highness, and it would be ungrateful in me if I were not to tell you that he is one of the warmest friends of our profession that we have in the world. (Cheers.) Let me say, gentlemen, that it will be my constant desire to elevate, if possible, the standing of our profession, by upholding as far as lies in my power, the position of those with whom I am connected, and who have the honour to hold a commission in Her Majesty's service. I am much gratified to see such a numerous assemblage of my professional brethren, and also to meet men who are eminent in the sister science; but chiefly am I gratified to meet His Royal Highness, the

hero of so many sanguinary battles; and should he live to be the "hero of a hundred fights," I am convinced that he will be the hero of a hundred victories." (Cheers.)

Mr. Stockley then also replied to the toast, but his remarks were not heard by the reporter.

Captain Peele, in an eloquent speech, which we regret is not reported, replied to the health of the visitors, and proposed "The Country Practitioners," which was responded to by Mr. Lacey and Mr. Robinson; after which, the healths of the Treasurer, and Secretary, followed by that of the Stewards, and the Honorary Secretary to the Dinner, were given from the Chair, and being severally acknowledged, the meeting broke up.

MISCELLANEA.

ON TAXING HORSES USED BY VETERINARY SURGEONS.

Gentlemen,—In the last number of 'The Veterinarian' appears a communication from Mr. Tombs, referring to a letter from Mr. Moir, relative to the tax charged for horses used by Veterinary Surgeons. In each of their appeals, it appears that the amount was altered from one guinea to ten and sixpence. Now, had I not made an appeal on the same ground, but without the same success, I should have concluded that all that was necessary to procure the alteration was simply to appeal. On making my claim for the reduction, the Commissioners present were of opinion that I was entitled to it, and doubtless my case would have been included with the exemptions, had not the Surveyor of taxes been present, who as he gets a good per centage upon the gross amount, held that a Veterinary Surgeon was not exempt. Not being satisfied with this decision, I wrote to the Inland Revenue Office, Somerset House, which is the proper place to be informed on such matters, when the decision of the Commissioners of Taxes confirmed that of the Surveyor.

Although there may be here and there one of the profession who is fortunate enough to put half a guinea into his pocket which another has to pay, still, in a legal point of view, this cannot be maintained. With you, I should be happy to see the question taken up by the Council of the Royal College of Veterinary Surgeons, for its removal is of some importance

to us as a professional body, as may also be said of our exemption from juries.

I am, yours faithfully,

G. J. VINCENT.

REDGRAVE; *May* 18, 1855.

HORSES SUFFOCATED BY FOUL AIR.

On Wednesday morning last, two valuable horses were destroyed at the Barracks here by sulphuretted hydrogen getting admission into the stable from a common sewer, which had been opened during the night for the purpose of being cleaned out. The groom, on entering the stable in the morning, found both animals down and apparently lifeless. One of them, having broken his chain, had got into another stall, and the groom naturally thought that they had been fighting during the night, and immediately went for Mr. Small, veterinary surgeon, who, on his arrival, found both the animals dead. One of them, a beautiful mare, lay stretched in her stall, without the slightest mark of injury on her body; the other, a valuable charger, had broken his fastening, and ran for refuge into the next stall, where he lay crouched in a corner, and evidently he had been dead several hours. It was quite clear that the death of both could not have been caused by their kicking each other, as the groom supposed. It was then conjectured that they had been poisoned, until the silver mounting of some harness that hung in the stable was discovered to be tarnished. The truth became evident, that the animals were suffocated by foul air, which was fully confirmed by the *post-mortem* examination made by Mr. Small during the day. The horses were the property of Mr. Bond, Adjutant to the Armagh Regiment, who, we regret to say, suffers a heavy loss by the calamity. If the stable had been properly constructed for thorough ventilation, the misfortune would not have occurred, and we think that Mr. Bond has a just claim upon the government for compensation for his loss. One of the officers of the regiment was nearly suffocated in his quarters on the same night, and some silver found in the room the next morning was quite black. If the government officials in the ordnance departments do not think it worth while to attend to these matters the police authorities should certainly look to it.—*Ulster Gazette.*

PRESERVATION OF MILK.

The following method is recommended for the preservation of milk, either at sea or in warm climates:—Provide pint or quart bottles, which must be perfectly clean, sweet, and dry; draw the milk from the cow into the bottles, and, as they are filled, immediately cork them well up, and fasten the corks with packthread or wire; then spread a little straw on the bottom of a boiler, on which place the bottles with straw between them, until the boiler contains a sufficient quantity. Fill it up with cold water; heat the water, and, as soon as it begins to boil, draw the fire, and let the whole cool gradually. When quite cold, take out the bottles and pack them with straw or sawdust in hampers, and stow them in the coolest part of the ship, or in a cool place. Some years since there was a Swedish or Danish vessel at Liverpool, having milk on board, preserved in this manner. It had been carried twice to the West Indies, and back to Denmark, and been above eighteen months in the bottles; nevertheless, it was as sweet as when first taken from the cow.—*New Monthly Mag.*

On this subject the Editor of the 'Chemist,' in the May number remarks, "We lately tasted, at the Royal Institution, milk preserved by M. Mabbru's process, and which had been presented by the Abbé Moigno to Mr. Barlow, who alluded to it in his lecture on preserved meats and vegetables. This milk was one year old, and was as sweet as when first drawn; a considerable quantity of cream had collected in the neck of the bottles."

EXAMINATIONS AT THE ROYAL COLLEGE OF VETERINARY SURGEONS.

The following are the names of the gentlemen who passed their examination in the science and practice of Veterinary Medicine, and received their Diplomas on the 16th and 17th and the 23d and 24th of May:—

James Meyrick, London
J. F. Cawthorne, Ealing
D. S. Hinge, Hounslow
George Western, London
Barnes Wimbush, East Barnet
Egar Sharman, Thorney-Abbey.

C. Sanderson, Manchester
R. Hampson, Bolton-le-Moors
J. E. Peele, Durham
Robert Hammond, Bungay
George Longman, Dorchester
E. Howes, Wymondham,
James Lowe, Tyldesley
William Ryall, Louth
John Tatam, Blankney
Thomas Fletcher, Newborough
Charles Grimmer, Pakefield
Martin Mence, Worcester
H. Procter, Scarborough
Thomas Clarke, West Ashby
Goforth Wyer, Folkingham
F. De Fair Elkes, Manchester
Henry Dawson, Waltham
Charles Marson, Royston
Frederick Saintey, Cambridge
C. H. Hurrell, Southminster
G. J. Evans, Mawr-towyn
Philip Hempson, London
John Rowland, London
Henry Dawson, India
W. L. Fenner, Clare
John Burr, London
Frederick H. R. Spratt, Kilburn
George J. Mather, Bayswater
Thomas Smith, Ormskirk

Of these, Messrs. Western, Hinge, Wimbush, Sharman, Sanderson, Peele, Hammond, Howes, Ryall, Procter, Clarke, Wyer, Dawson, Marson, Evans, Spratt, and Smith, have received the Certificate of Membership of the Veterinary Medical Association; and Messrs. Wimbush, Peele, Howes, Ryall, Proctor, Clarke, Wyer, Marson, and Evans, having introduced papers for discussion, have been elected Fellows of that Institution.

Messrs. Western, Wimbush, Merrick, Longman, Peele, Howes, Ryall, Tatam, and Dawson, were addressed by the chairman of the Board of Examiners, Professor Brande, in eulogistic terms, on obtaining their Diplomas, on account of their proficiency.

ARMY APPOINTMENTS.

BREVET.

THE following officers have been selected to serve in the Osmanli Irregular Horse, under the command of Major-General Beatson, to have the local rank of Veterinary Surgeons in Turkey while so employed.

Mr. E. C. Crowley.
„ Henry Surmon.
„ W. Dorrofield.
„ Henry Wragge.
„ James Channon.
„ H. J. Fitter.
„ Henry Bath.
„ John H. Lane.

The following officers have been selected to serve as Veterinary Surgeons in the Turkish Contingent, under General Vivian, to have local rank while so employed.

Mr. Gavin Scott.
„ George Morton.
„ Charles Barker.
„ William Ford.
„ George Poyser.—*London Gazette.*

Mr. William Death has likewise been gazetted as Veterinary Surgeon to the army, and Mr. C. A. Gooch to the Royal Artillery.

OBITUARY.

WE are sorry to have to announce the death of Mr. E. Carruthers, Lancaster, and Mr. Faulkner, Portsmouth.

Also of "Mr. Edward Dycer, proprietor of the well-known Horse Repository in Dublin, which took place last Tuesday (May 8th), at his residence in Stephen's Green. The announcement of this melancholy event will be read with profound sorrow by all classes with whom Mr. Dycer came in contact, as, by his strict integrity and uprightness, high sense of honour, and kind and amiable disposition, he rendered himself universally popular and respected. Mr. Dycer was Veterinary Surgeon to his Excellency the Earl of Carlisle, and to the Irish Constabulary, and likewise a Member of the Board of Examiners to the Edinburgh Veterinary College."—*The Field.*

ERRATUM IN NO. 329.

Page 267, line 20, *for* retraction of the and formation, *read* retraction of the artery and formation, &c.

THE

VETERINARIAN.

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Communications and Cases.

A SERIES OF QUESTIONS ON THE BREEDING OF ANIMALS.

By Mr. G. W. Varnell, Assistant-Professor, Royal Veterinary College.

To the Editors of 'The Veterinarian.'

Gentlemen,—Thinking the following questions of some importance, not only to the profession at large, but also in a national point of view, I am induced to ask a place for them in the pages of your valuable Journal; soliciting through that medium answers from some of your numerous contributors.

I am, yours, &c.

London; *June* 7, 1855.

1st. What amount of exercise, or work, is it usual to submit entire horses to, either during the covering season or at other times?

2d. Does work, either in excess or otherwise, diminish or increase the sexual desire of horses? Does it in any way influence the capability for getting stock?

3d. Does fat, especially when there is a constitutional disposition to its accumulation, tend to produce impotency in stallions or other animals?

4th. Does the kind of mare, as it regards her colour, condition, or breed, or any other peculiarity, influence the sexual desire in entire horses?

5th. Is the future progeny liable to be influenced by previous imperfections in breed or constitution? And if so, on which does it most depend, the sire or dam?

6th. Is the state of the coat permanently influenced by the colt being foaled late in the season?

7th. Do male or female foals preponderate?

8th. Is sterility in mares, or impotency in stallions, most frequent?

9th. What are the known, or probable causes of abortion in the mare, or other animals?

10th. Is there any foundation for the statement that a high bred cow not proving in calf by a high bred bull will, when put to one of a common breed, conceive? And, if at the next bulling, she be put to a high bred bull, will she be likely then to conceive and produce first rate stock? If so, does this equally apply to other animals?

11th. When mares, cows, ewes, &c., prove barren, are there any, and if any what, means resorted to to prevent it for the future?

12th. What is the cause of those weakly animals, termed "weeds?" Is it debility in dams or sires, or does it depend upon the quantity or quality of the food of the colt, or otherwise?

13th. What effect has early use, in excess, of the sexual organs of entire horses or other animals?

14th. Is there any reason to believe that entire horses, or other animals, are subject to seminal emissions independent of the act of copulation?

15th. Do the testes of horses used for breeding purposes enlarge during the summer months? Have they what is termed a rutting season? or do they evince equable sexual desires irrespective of the season of the year?

16th. Are there any artificial means had recourse to to excite sexual desire in the horse or mare, either medicinally or otherwise? and if so, what?

17th. Can any age be stated at which mares or entire horses cease to have sexual capabilities?

18th. Do entire horses, bulls, rams, or any other animals, when, by being with females, and not allowed to gratify their desires, suffer constitutionally?

19th. What are the known or probable causes of impotency in stallions or other animals?

20th. What evidences does a mare give of having become impregnated or "stinted?"

21st. What number of mares is it usual to put to valuable thoroughbred horses?

22d. When horses have a number of mares brought to them at the same time, what interval is it usual to allow between the acts of copulation?

23d. What is the nature of the food of stallions, both during the covering season and at other times?

24th. At what age is it considered prudent for males to be put to females so as to ensure a continuance of their powers to produce their own species? And up to what age are horses, and other animals, capable of getting stock?

CASE OF INFLAMMATORY ŒDEMA IN A HORSE; AND A PEDUNCULATED TUMOUR ATTACHED TO THE BLADDER.

By H. W. Sparrow, M.R.C.V.S., Ware.

A chestnut gelding, 5 years old, the property of John Biggs, Esq., of Stanstead, Herts, was taken ill, March 25th, with fever and swelling of the hind extremities. Blood to the amount of lb. xij was abstracted, and a fever-ball given; the latter to be repeated in eight hours.

26th. Immense tumefaction of the hind extremities has taken place, extending to the sheath and along the abdomen to the fore legs. Pulse 68; membranes of the eyes and nose injected; fæces scanty, and no inclination for food. A laxative alterative ball was given, and hot fomentations directed to be applied to the swellings, the extremities to be well dried, and hand-rubbed afterwards. The legs to be bandaged.

27th. Swellings increased. Pulse 60. Spots on the septum nasi; fæces soft. Gave Ol. Tereb., ʒiv, in mucilage ʒviij. Ordered walking exercise. The fomentations, bandages, &c., to be continued the use of.

28th. The hind extremities are not so much swollen; but the head and nose are much increased in size. The animal stales freely, and eats hay tolerably well, but, on account of the tumefaction of the lips, is not capable of gathering up his corn, although he is inclined to feed. Gave Zingib. Gentianæ, āā ʒss, in bol.

29th. The swelling of the hind extremities continues to subside. Repeat the ball and daily exercise, with fomentations, after which a stimulant to be well rubbed in, and the legs bandaged.

30th. General appearance much about the same, but the appetite is improving. Repeat the Ol. Tereb. in mucilage.

31st. Reverted to the use of tonics.

April 1st and 2d. The animal appeared to be progressing favorably. The swellings were gradually diminishing. Ordered

him to have daily, Ferri Sulph., ʒiij; Zingib. et Gentian., āā ʒij in ball.

5th.—All the swellings have subsided, and the animal's appetite is good.

7th.—The horse this morning was observed to stale with difficulty; he afterwards fell, and could not be got up. I at first thought that this arose from weakness; he was, therefore, made comfortable, and nourishing gruel given him.

9th.—Mr. Biggs observed to me that he felt sure that something must be wrong with the urinary organs, as the horse appeared to void his urine with much difficulty, and afterwards was seized with a violent tremor. I at once passed the catheter, and found that some obstruction existed: when the instrument returned it was covered with blood and pus. I then introduced my arm up the rectum and pressed upon the bladder, when a copious flow of urine took place. I could feel a hard body, which I thought was a lump of hardened fæces. Ordered the horse to have Pulv. Opii, ʒij, in Ol. Lini., Oj.

10th.—Pulse 96; appetite entirely lost; animal sweating, and in great pain, especially after voiding his urine. Considering it to be altogether a hopeless case, I advised Mr. Biggs to destroy the horse, which he did by shooting him, and immediately after death the body was examined by me.

On laying open the abdominal cavity the intestines were found healthy. The bladder was removed and opened, the body of which was perfectly natural, but the neck externally was ulcerated, and a large tumour, which I considered malignant, was found attached by the meso-rectum. It weighed seven pounds and a half, and, when cut into, contained a small portion of pus.

The stomach and liver were healthy. The lungs of a pale colour, and extensively emphysematous.

Remarks.—Whether the tumour was the cause of the last attack I am somewhat at a loss to decide. From its weight, and suspended, as it were, over the bladder, could it press upon the neck of that organ, and by its friction ulcerate its external surface?

The fluid effused into the cellular tissue became rapidly absorbed; the appetite improved, the strength increased, and all appeared to be going on favorably when the fatal symptoms first showed themselves.

MEMOIRS OF A VETERINARY SURGEON.

PHYSIOLOGICAL INQUIRY INTO LAMINITIS.

By T. Greaves, M.R.C.V.S., Manchester.

(*Continued from p.* 254.)

In my former paper, "Thoughts on Laminitis," it will be observed that I view this disease as emanating from some igneous element, some undeveloped morbid condition of the system, which may have had its existence for an undefined period in a latent form, until some unusual or accidental circumstance creates a preponderating tendency for it to concentrate itself in those fibrous, but highly vascular tissues, the laminæ. We find that the disease shows itself at times suddenly and with intensity; and at other times it comes on progressively. We also find that it is developed under every possible variety of circumstance: sometimes after a severe run, and that in company, probably, with some scores of other horses, over a rough, hard country, but the subject of this malady is the only one affected; and the animal may have endured not only as hard a run a few days before, but frequently before that time he had performed a task of equal severity without the slightest uneasiness even of his feet ensuing. I would here remark, that external or unnatural causes—lacerating attrition—more frequently produce laminitis in well-bred horses, and that the internal or natural causes are more commonly in operation in heavy draught horses; in which we often witness it to present itself after an ordinary day's work, although the work was neither more nor less than that he had been accustomed to for months and years; and thousands of other horses endure the same amount of labour daily, under equally harassing circumstances, without laminitis being the consequence. We see it again attack horses standing only three or four days in a stall, or even loose in a box; although the same horse has stood double the length of time, on other occasions, without such disease occurring; and hundreds of other horses stand the same period, and even longer, in consequence of illness or lameness, without laminitis supervening. It sometimes occurs just at the time "physic is setting," or whilst it is yet operating; but this same horse has been physicked before, given exactly the same dose of a purgative agent, and to him exactly the same attention has been paid, with other like circumstances, without this disease occurring as a sequence.

We have likewise seen hundreds of other horses physicked, but no laminitis resulting in them. We notice a young horse brought up out of the country, perhaps out of the strawyard, and after a certain time he is put to work upon the paved streets, and in a few days or weeks he becomes affected with laminitis. Methinks I hear some of my readers say, "that's very likely; you might have naturally expected that." But here I would ask the reader, how do you reconcile it with this fact, that to this very establishment scores of other young country horses are brought, and subjected to exactly the same kind of treatment, but no laminitis attacks them, at least not one in a hundred?

We also see it supervene on new shoeing, and at other times at the end of the shoeing; yet this same horse has been shod scores of times before, and always wore his shoes as long as he has done this time without such resulting. Thus we see this disease present itself under every possible variety of circumstance, but to affirm that it is created by these circumstances is, I feel fully convinced, to say the least of it, fallacious reasoning. It is idle to contend and say, perhaps his feet were in a neglected condition; or perhaps he had new thick strong shoes on, and had his soles pared too thin; or perhaps he had old thin weak shoes on, and had his soles over thick. Or, possibly, he had been subjected to a cold wind when in a heated state, thus giving a sudden check to the perspiration; or had his feet washed in cold water when he came in. It may be there had been some error in diet, or he had been driven or ridden a little out of his usual pace, or he had had the mucous membrane of his bowels irritated with physic, or it was for the want of it. Now all these assigned causes appear to me to carry with them their own refutation, and as I make no excuse in these papers, so I feel no remorse in throwing overboard the whole batch of these *perhapses*.

Laminitis, then, as a consequence, is decidedly the exception, and not the rule, in such cases as enumerated above. The truth is, it as often occurs, comparatively speaking, in the country as in the town; it as often occurs in the middle or at the end of a shoeing, as it does in the horse but recently shod; it as often occurs in the active, industrious, and energetic, as it does in the gross, indolent, and sluggish horse; it as often occurs in the overfed, as it does in the underfed horse; it occurs, also, as often in the young, as it does in the aged animal; neither is it confined to any particular form or kind of feet.

I would here request to be distinctly understood that I am quite aware that there are cases of laminitis forcibly created

by desperate and extraordinary exertion; but these are unnatural and extreme cases,—they emanate from unnatural causes, and therefore cannot be classed with true cases of laminitis, any more than the horse having got his shoe fast between the sets is thrown down, and gets his hoof partially wrenched off, or has had his foot run over, or has been standing unnaturally long on one foot through lameness in the other. Here, I grant you, we have intense laminal inflammation, and generally most aggravated cases they are, but the constitutional influence bearing upon them is very dissimilar indeed. And I would here remark that, in nearly all such intensely acute cases, where disorganization and positive laceration of the laminal tissues have taken place from these unnatural causes, all efforts to restore the patient to ultimate usefulness will prove only a disastrous failure. They are cases that are irremediable.

I believe the remote or predisposing cause, may exist without, in the slightest degree, causing any tangible effects prejudicial to health or condition; and that we have all the elements of laminitis existing in the system in a passive state for an indefinite period previous to lameness showing itself. But here I must admit, that during my matriculation, which has since been followed up by attentive studies and a somewhat extensive practice, my professional knowledge is not yet sufficiently advanced to throw that light upon this part of my subject which I should so much like to have done; but of this I feel persuaded, that the time is not far distant when the advancement of science will enable us to unravel this, as yet, abstruse physiological subject, more especially since this our leading Journal is now placed under such favorable auspices.

It appears to me there must be, secretly and silently going on, a gradual diminution in the activity of the absorbents generally,—an incomplete or defective performance of function in the capillaries, and the sentient fibres universally, causing a smothered or undeveloped irritability of the whole system, and which is only waiting, agreeably to nature's directions: and it is not until this igneous element has accumulated itself in sufficient quantities in the system, so as to acquire force, and to concentrate itself into a focus, that we are enabled to take cognizance of it; and even then it is not by any means clearly recognizable, until it is too evident that that focus is the laminæ, by its causing lameness.

It has sometimes struck me forcibly, when pursuing these most interesting inquiries, whether electricity has not much to do with the development of active disease; as clouds in two

opposite states of electricity, coming in close proximity, create an instantaneous revulsion ?

I am disposed to believe laminitis may coexist with any or all other diseases. We see it first looming in the distance, as it were, in the form of what is usually denominated fever; but it is not ordinary fever, it simulates some of the characteristics of influenza or scarlatina, or it has many irregular features about it—some peculiar characteristics of its own. The secretions, generally, become involved in the mischievous effects going on; the visible mucous membranes are of a livid hue, peculiar to this state of the system: sometimes the lining membrane of one eye, or one nostril, will exhibit, if closely examined, a marked difference in appearance to the other; and if we happen to examine the pulse we shall always find it deficient in distinctness, as though the blood was in a viscid state, and it is sometimes intermittent. If the animal has had a chronic cough on him, that cough is mysteriously gone; or if he has had an irritable affection of the skin, or greasy heels, that also has disappeared; if he has had any occult or rheumatic lameness, or indurated chronic swelling of the legs, all appear alike to yield to this disease a temporary supremacy, as if nature was maturing her purposes and preparing for an attack. But what is very remarkable, these peculiarities are seldom noticed until the attack has actually taken place. If physic be administered in this stage, it will not act satisfactorily; perhaps it will be three or four days before it purges, and then only partially. Even the food itself will remain in the bowels in an undigested state for an astonishing length of time: the wheat or oats are voided whole, and the fæces are whitish, and pasty. If we insert a seton in the frog, or a rowel in any other part of the body, we have as a consequence an unhealthy wound, much swelling, with little or no discharge, and what little there may be is of a most unhealthy character, and the odour very disagreeable. On our making particular inquiry, we have often found that lately the horse has exhibited slight lameness of one leg (perhaps a hind leg) for a day or two, it has then left that leg and affected another without the slightest apparent reason, and in a day or two it has disappeared altogether. At other times the bursæ have been suddenly and intensely inflamed for a day or two, and then the swelling has subsided as suddenly. Again, the animal will sometimes experience slight attacks of spasm, which come and go without any assignable cause. There are, I doubt not, many observant practitioners who could bear me out in many of these statements respecting this disease, which, from its singularity, always excites an interest.

In reference to the malady we have now under notice, we have unmistakeable premonitory indications, if we will only interpret them aright. The subject which ultimately becomes the victim of active laminitis has nearly always exhibited more or less tenderness whenever he has been newly shod, however carefully that has been done; but after a few days this has worn off, and no more has been thought about it. But there is one symptom deserving of great attention, and, therefore, worthy of especial remark, as it will never deceive nor mislead us, and it is also present previous to the slightest exhibition of tenderness; namely, INCREASED HEAT IN THE FEET. Whether it be a case that we are treating for common fever, pleuritis, pneumonia, or whatever else we may have assumed it to be, *we shall need no bandages in this case to keep the extremities warm.* This is a certain precursor—it is the first distinct view we have of our hideous opponent. It has now become localized, has taken to itself "a local habitation and a name;" and when the system has become thus far out of sorts, and this undeveloped vitiated state has got such a hold on the constitution, it may degenerate into active laminitis at any hour, whether the horse be in a state of rest or at work. Nor can this be at all wondered at when we remember that the laminæ are among the most excitable parts of the body. If there are no unusual occurrences brought to bear upon the animal at this particular time, the pain and tenderness will come on gradually, and the laminal fever supervene progressively; the active disease is creeping, as it were, into existence. But if just at this time he happens to have a little extra work, or be driven or ridden a little out of his usual pace, then active laminitis will declare itself with a determination and a force perfectly irresistible. I would here remark that it has sometimes occurred to my mind that in laminitis assuming the most active form, it partakes largely of the neuralgic character, which is followed by a species of apoplexy, and, in intense cases, after a time to some extent, at least, it assumes a paralytic form, and the laminæ become *effete.* I have no doubt we have considerable soreness in the structure of the bone—os pedis—which in time changes its form, but all this is only a result, and not spontaneous or primary inflammation. If (as it does unfortunately happen sometimes) the horse is shod just as the disease is assuming its active form, he is soon after unable to get out of his stall, and the owner will place himself before you, and say, Now, sir, is it not perfectly clear your shoeing has lamed my horse? Is it not self-evident to everybody? he has over strong shoes on; the nails have been driven up too hard; clenched

too tight, and the clips hammered down too, most unmercifully! Poor smith! again thou art the culprit—but gently thou stern monitor, listen to what thy carter has to say; he says, "the horse was like as if he was failing of his fore feet some days before he was shod. I told the smith about it, and he examined the nailholes, and said they were all right, and his feet were as sound as bells, only *rather hot.*" This lets out the secret; the mine was all ready to explode, and driving the nails did it.

I can readily conceive that some of my readers will not agree with me in some of the positions I have advanced. This is not to be surprised at, for experience proves the difficulty, and even impossibility, of all minds accepting a new view of a subject on its first presentation to them. Most minds are innately and unconsciously prejudiced against innovations. But, by way of illustrating my meaning, I will take a case of "humour," and ask, Will any rational man say that it is a disease of spontaneous origin, and that the elements or cause of the engorged and tumefied lymphatics did not exist in the system previous to the first or slightest swelling becoming recognizable? Horses that are liable to become lame from "these humours" are looked upon with suspicion, and in many stables are not allowed to stand still a single day, not even Sundays, without exercise. Experience has shown the carter and ostler, that only one day's standing still is amply sufficient to enable the disease to accumulate and concentrate itself in sufficient force so as to produce tumefaction and lameness. Every spring or fall, too, that horse has to be bled or physicked in order to avert the attack; but, because this horse does not become lame (which, by the by, he sometimes does despite every precaution), must it be, therefore, inferred that the system of that horse was free from the igneous element which has such a strong predilection for the lymphatics? In this instance the standing is not the *cause* of the attack, it only allows the passive to assume the active state. The same in navicularthritis, how often is it that the earliest alarm-note is sounded immediately after the horse has been shod, although that operation was performed with every possible care, and the horse is lame ever afterwards. Must it, therefore, be inferred that the shoeing was the cause? No such thing; it only excited or awoke the disease that had already taken possession of its birthright, but was retained in a passive state. From the above view of the subject I think we cannot avoid coming to the conclusion that there is in every constitution a strong leading tendency or predisposition to arrive at a climax, which no effort of ours, at

least not any yet known, can divert or change to another tendency or predisposition; and that as soon as it has gained a sufficient ascendancy, in accordance with the impulse of nature's laws, it must divulge itself. Further, that up to a certain point the system may be pervaded, and even surcharged with this vitiated element without such in any way affecting the general health, appetite, or condition of the animal.

My next paper will be devoted to remedial measures.

A CASE OF COLIC FOLLOWED BY TETANUS.

By J. C. Broad, M.R.C.V.S., Paddington.

On the 16th of last month, at six o'clock, p.m., a brown mare, seven years old, belonging to Mr. L——, near Dorset Square, was admitted, affected with colic, from which she had been suffering about half an hour. The pain was not acute, and the symptoms present were those we usually observe in a case of the kind.

Treatment.—Gave Sulph. Ether and Tinct. Opii, of each, ʒj, in haust., which was repeated in about half an hour; threw up injections of warm water, and applied mustard to the abdomen. An hour later, the attack not having yielded, gave Sol. Aloes and Ol. Lini, in a full dose, combined with Ether and Tinct. Opii. The pulse, from the commencement, being small and weak, bleeding was not had recourse to.

16th, 6 o'clock, a.m.—No material change has taken place in the symptoms. Repeat the medicine and injections as before.

12 o'clock (noon).—She lies down, and remains quite still, and appears much easier. A small quantity of fæces followed the last injection. She has drunk half a pailful of water, a circumstance I am always pleased to witness in a case of protracted obstruction of the bowels. I now entertained hopes of the recovery of my patient. At 8 o'clock, p.m., the bowels not having responded, I gave more opening medicine.

18th, 6 o'clock, a.m.—Symptoms nearly the same as yesterday. No pawing, nor swelling of the abdomen, therefore the presence of a calculus is not indicated. She has drank some "bran tea," and eaten a little mash during the night. Bowels not yet acted upon, but an examination per

rectum being made, the hand easily detected the existence of fæces. An injection therefore was given, which had the effect of bringing some away.

12 o'clock (noon).—Case progressing favorably; the animal eats and drinks moderately, yet occasionally she gives evidence of being in pain.

8 o'clock, p.m.—A gradual improvement has taken place. I had her led out this afternoon for about a quarter of an hour, during which time she purged slightly.

19th, 6 o'clock, a.m.—The animal was lying down, and appeared very comfortable; she had eaten a bran-mash and some hay during the night, but had not voided any fæces; yet the rectum appeared full. Threw up another injection, which was followed by a copious discharge of fæcal matter of a desirable consistence.

8 o'clock, p.m.—The improvement continues; she eats and drinks well, but still does not void the fæces without the assistance of an injection.

20th.—Animal apparently in a state of convalescence. Her owner called in the evening, and made arrangements to send for her the following day, stating that as he had several loose boxes he would give her a week's rest in one of them. He neglected to send for her on the day mentioned, and the succeeding day to that, being Sunday, he thought it proper to allow her to remain till Monday, the 23d. I might here remark, that she appeared in perfect health, and continued to eat and drink well, and that the natural action of the bowels had become established up to the time of my visiting her late on Sunday evening, the 22d.

23d.—As I entered the box this morning, I was astonished to find her affected with tetanus. Her jaws were firmly locked, and the saliva flowing from each side of the mouth. In the course of the day her owner called (he having been previously apprised of the circumstance), and, seeing her condition, wished to have her at once destroyed. This was certainly the most humane course that could be adopted, as the symptoms had much increased in severity. The "knacker" was sent for, but, before his arrival, she fell, and died in intense agony.

Post-mortem examination.—On opening the abdomen the intestines appeared to be healthy, but upon removing them from their cavity, a very singular case presented itself, viz., adhesion of the stomach to portions of the small intestines. I had the stomach, and so much of the intestines as appeared implicated in the disease, removed and washed. An examination of them showed an adhesion of two folds of the ileum,

about eight or nine inches in length, to the stomach, being firmly attached by a thick deposit of unhealthy looking lymph. It required much force to separate the intestine from the stomach, and the parts immediately in connection with that organ were easily broken through. After separating one of the folds, a copious discharge of pus followed, of a most offensive character. It appeared to have accumulated between the two folds of intestine and the stomach, as no sac or cavity could be seen. The lining membrane of the stomach was healthy.

SINGULAR CASE OF ACCUMULATION OF EGGS IN A FOWL.

By T. W. Gowing, M.R.C.V.S., Camden Town.

My dear Sirs,—While engaged professionally the other day, I was requested to give my opinion on a hen of the Cochin-China breed. She was walking about the yard with great difficulty, her head quite erect, and her hind parts dragging upon the ground. The owner stated that he believed she had some tumour internally situated, as the anus presented such a pendulous appearance. At first, he thought she was suffering from what is generally termed egg-bound, but from manipulating the part and finding it soft, he had come to the conclusion that it must be a tumour.

I made an examination, and was at once satisfied that she was suffering from an accumulation of eggs without their shells, these being concreted together to a considerable extent. I recommended an operation, and the contents to be removed; which being consented to, I had her brought to my place, and performed the operation on Saturday. The hen being laid upon her back, and retained in that position by two assistants, I commenced by cutting through the common integument and a thin layer of muscle on the right side, extending the incision into the bag. The mass was then broken down, and reduced piecemeal, by means of a tea-spoon, and the whole removed by that instrument. The weight of the whole removed was one pound and three quarters troy. I have sent you the contents merely to show you the quantity I took out, that being the most tedious part of the operation. The intestines protruded frequently, consequently they had to be returned. The

viscus was first sewn up, next the thin layer of muscle, and lastly, the skin; the operation being then completed.

The hen appears quite lively, and to be doing well at present. I will communicate further with you upon the subject should anything unfavorable take place.

I am, yours very truly, &c.

[We thank Mr. Gowing for forwarding the removed mass to us for inspection, which, as he describes it, consisted of "an accumulation of eggs without their shells." It presented a strange appearance, resembling, from long retention, hard-boiled and broken up eggs.]

CASE OF ABDOMINAL WOUND WITH LACERATION OF THE INTESTINE OF A COLT, SUCCESSFULLY TREATED.—ALSO TWO CASES OF HERNIA.

By Bampfield Kettle, M.R.C.V.S., Market Drayton.

Gentlemen,—A pressure of professional engagements has prevented an earlier fulfilment of my promise to you.

I was requested, on the afternoon of the 23d December, 1854, to attend a colt, the property of Mr. Lea, of Bloor, near this town. He was a fine, strong animal, eight months old, and of the cart breed. On examining him, I found there was a wound on the left side of the abdomen, penetrating the integument and walls, six or eight inches in advance of the stifle, and horizontal with it, through which the colon protruded to an extent that would fill a hat. On still further examination, I discovered that the colon itself was ruptured rather more than an inch longitudinally, and its contents freely escaping. I explained to the owner of the animal the nature of the lesions, and he remarked that, as it seemed a hopeless case, under the circumstances he thought the animal had better be destroyed. In reply, I observed that, although I could not anticipate a favorable result from anything that might be adopted, still, as I was on the spot, I was anxious to try what could be done. The owner at last reluctantly consented to the animal's being operated upon. On cleaning the intestines preparatory to their being returned, they presented tints scarcely to be met with in the rainbow, varying from a light pink to a shadow approaching black, a state of things little calcu-

lated to inspire any hope. Finding that under these manipulations the colt grew restive, I cast him on his right side, and neatly closed the wounds in the bowels with interrupted sutures of fine white silk, immediately upon which they became distended with gas, and in this condition all attempts to get them in their place proved futile. I then gathered up the ruptured portion of bowels with one hand, and with the other forced the gas back into the intestinal cavity from which it had escaped, and in this way succeeded in effecting my object. I then brought the lacerated abdominal muscles—the wound of which, I should have before said, would admit the introduction of the hand—into apposition, and secured them with metallic sutures, and did the same with the external wound. My patient was then released from the hobbles, and with some difficulty got up. He breathed rapidly, and appeared much exhausted. I gave him a pint of elderberry wine as a diffusible stimulant, (this being at hand) and dissolved in it Aloes Barb. ʒiv. Ordered him to be clothed warmly; to be allowed a little gruel, and left him for the night.

21st.—He is better than could be expected. He drinks gruel freely; pulse 90; breathing tranquil, and he has passed some hardened fæces. A thin, offensive discharge issues from wound. Apply fomentations constantly, and confine the diet to gruel.

22d.—No indication of pain. Pulse 80; breathing quiet; colour of mucous membranes natural; fæces pultaceous. A good deal of abdominal infiltration has taken place, the swelling extending to the fore legs. Dress the wound with digestive ointment, and continue fomentations. Give Pot. Nit. et Pulv. Gent. Rad. āā, ʒij, in ball, morning and night.

23d.—Swelling somewhat diminished; discharge from wound more healthy; pulse 74; bowels regular. As he appears hungry, allow a little bran mash. Continue medicine and treatment as before.

From this date, under the same treatment, the animal improved daily up to the 6th, when the medicine was discontinued, and, in addition to gruel and bran mashes, he was allowed a few crushed oats. The sutures were now removed.

In a fortnight he was returned to his usual food, though in lesser quantities. At the end of three weeks he appeared to require no further professional attention.

I may mention, *en passant*, that in 1843, I was called to a case of ventral hernia in a colt twelve months old, in which it

was supposed the bowels had protruded for thirty-six hours, or perhaps even more.

In this case a portion of omentum accompanied the intestines, and which, as it was much lacerated, I removed. Here, in consequence of strangulation and exposure, the bowels had become much thickened from interstitial infiltration, and assumed a dropsical aspect, therefore in order to return them it was necessary either to lessen the bulk of the intestines, or to enlarge the rupture (situated high up the flank). I preferred the former course, and scarified very extensively the peritoneal coat of the intestines, and after fomenting them, effected their return. The subsequent treatment in this case, with only some slight difference, was similar to that recorded in the first, and with the same result.

In 1845 I accompanied the gentleman with whom I served my apprenticeship, and who will, I am sure, excuse the freedom I have taken in referring to the circumstance—to see a strong two year old cart colt, the property of Mr. Howe of Borkham, Colyton, Devon, which had in the early part of the day of our arrival become ruptured—by running against the catch of a gate—in the abdomen, inside of, and posterior to, the stifle, without wounding the integument, but separating it from the thigh to a considerable extent. The fissure in the abdomen was about three inches in length, and the intestines had escaped and occupied the space between the separated skin and the thigh. The colt was cast; the skin laid open immediately over the rupture; the intestines drawn back and returned into the abdomen; the edges of the wound in which were brought together and closed, and likewise that of the skin. The animal was released from the hobbles, subjected to treatment similar to that above described, and ultimately did well.

Much has been written and said about the danger of wounding the peritoneum of the horse, and although I am far from asserting or denying that such accidents are destitute of danger, I cannot but believe it has been magnified, as the cases I have so imperfectly recorded will in some measure give proof of; more especially, as they are neither isolated nor selected cases.

It will be observed that in the treatment adopted there was a marked departure from that usually had recourse to under similar circumstances, and my antiphlogistic friends will be tempted to exclaim, with Hamlet, "Oh! what a falling off is there!" but to this I incline, in some degree, to ascribe the success attending it.

Not infrequently our patients are "gathered to their

fathers," not so much from the disease under which they are labouring, as from the *knock down* system of treatment resorted to. Thus a shock is sometimes imparted to the nervous and circulatory systems by antiphlogistic measures greater, often, than that which the patient has to sustain from the original malady; at least, such is the humble opinion of,

Gentlemen, yours very truly.

May 10, 1855.

CASE OF LACERATED URETHRA IN THE HORSE.

By W. Cook, M.R.C.V.S., Willesborough.

On December 18, 1854, I was requested, in great haste, to attend a fine cart-horse, the property of F. Murton, Esq., of Smeeth, which had run away, in company with three more, with a waggon. This horse, being attached next to the hind horse, commenced kicking on descending a hill, when the shaft of the waggon ran in about four inches by the side of the anal opening, not injuring the rectum, but leaving a large open wound, from which considerable hemorrhage took place, which I considered came chiefly from the artery of the bulb. On a careful examination, I discovered that the urethra was divided nearly asunder, and I told the owner that I feared it was a hopeless case. However, he wished me to do what I thought proper. I therefore applied two or three sutures to the wound, ordered fomentations, and threw up an enema. Ordered the diet to be restricted to mashes, and a laxative administered. About two hours after, the horse urinated, and nearly the whole of the urine escaped by the wound.

19th.—Bowels responding. Much swelling of the surrounding parts, and some irritative fever are present; pulse, 46. Continue mash diet, and inject Sol. Zinc. Sulph. into the wound, through which the urine still escapes, although a portion has been observed to pass by its natural channel.

20th.—Pulse 40; swelling diminished; an unhealthy, offensive discharge takes place from the wound. Applied Sol. Calc. Chlor. with Tr. Myrrh, and gave another aperient. Fomentations to be repeated, and diet as before.

21st.—The symptoms are greatly improved. The suppurative action has commenced, and the greater part of the urine now passes through the natural channel. Applied the

same agents to the wound as before, and ordered the parts to be kept clean by means of tepid water.

22d.—As the wound was suppurating freely, I removed the sutures, and ordered the parts to be merely kept clean, as before.

24th.—My patient continues to progress very favorably, the urine escapes in a full stream, through its natural channel, and the wound is granulating. Ordered walking exercise, and a return to plain diet.

30th.—The wound has nearly healed; medical treatment discontinued. The horse has continued well, and at work, ever since this date.

AN ATTACK OF INDIGESTION FOLLOWED BY LAMINITIS.

By Henry Corey, M.R.C.V.S., Andover.

On the evening of Thursday, May 3d, I was requested to attend a four years old cart colt, stated to be off his feed, and shivering considerably. On my arrival the shivering had passed off; the animal was resting his head upon the manger, and his hind feet were placed under the body, as in an attack of laminitis, and the fore feet were advanced and abducted. The pulse numbered 72 in the minute, but was feeble; the conjunctival and Schneiderian membranes were injected; the mouth hot; the submaxillary glands swollen; a mucous discharge from the eyes; the respiration but little altered so long as the patient was undisturbed; patches of perspiration existed about the body, and the extremities were warm. On elevating or depressing the head, the animal had great difficulty in maintaining the standing position; and it was also with difficulty that he could be induced to move. Considerable pain was evinced on the application of pressure to the lower part of the chest, on either side; partial constipation of the bowels was present, and the fæces passed were of an offensive odour. On inquiry, I learned that he had gone through his work as usual in the day, but refused food in the evening, and appeared to be in pain, in consequence of which an antispasmodic draught was administered. Barley had been given in the morning, instead of oats. I gave Ext. Belladon. et Camphoræ, āā ʒj, in ball, and left instructions for the horse to be watched during the night. On the 4th, the pulse had sunk to 64, and his appetite had partially returned,

but he was still scarcely able to move. All the shoes were taken off, and the feet pared quite thin, after which poultices were applied. This afforded considerable relief; the pulse soon sank to 54, and he could move with more ease.

℞ Aloës Sol., fʒij;
Sp. Ether Nit., fʒss;
Tinct. Opii, fʒss;
Aquæ, q. s. fiat haustus.

On the 5th he appeared to be still improving; his appetite was better, the membranes were less injected, the swelling of the glands had subsided, and the discharge from the eyes had ceased; the fæces were also soft and in fair quantity, but there was still a tenderness about the chest, and likewise a slight swelling in all the legs, with some difficulty in progression, and the pulse remained at 54. Repeat the Belladonna and Camphor.

On the 6th, the pulse had risen to 60, and was rather oppressed in character, the respiration was accelerated, and the visible mucous membranes more injected, and he had not lain down since the commencement of the attack. Venesection was had recourse to, but when about four quarts of blood had been withdrawn the pulse suddenly faltered, and the animal gave evidence of approaching syncope; the opening was therefore immediately closed. Ordered the Belladonna to be repeated, and the poultices to the feet to be continued.

At 5 p.m., the pulse was indistinct at the submaxillary artery, but it numbered 60 at the heart.

℞ Sp. Ether. Nit., fʒj;
Potass. Nit., ʒiij; in haustus.

On examining the blood withdrawn in the morning, a large amount of "buff" was found on the top of the coagulum, but it had not the mottled aspect of blood abstracted from a patient affected with any inflammatory disease.

On the 7th, the animal was easier, and had lain down during the night; the pulse had sunk to 56, and the membranes were less injected. Repeat the Sp. Ether. Nit. et Pot. Nit., in the form of draught, and let this be continued for a few days. From this time the animal rapidly improved, and he is now convalescent.

May 14, 1855.

CASES OF INTESTINAL IRRITATION.

By G. Armatage, V.S., Sheffield.

From the great number of cases of intestinal irritation which now and for the whole of the past winter have existed in this district—in many instances proving fatal—and from the disease being peculiar in its origin, nature, and the treatment required, it has to me been a subject of interest; I am therefore induced to forward to you the principal facts, as they are recorded in my case-book.

Scarcely a day passes in which cases do not occur of "belly-ache," as it is called. Sometimes I am summoned, in great haste, to horses said to be "mad;" on other occasions they are brought to my stables, evidently suffering much pain, this being manifested by repeated leaps from the ground, kicking violently, rearing up, biting at the highest object within reach, and striking out with the fore feet. The racks and mangers are often destroyed during these paroxysms. Sometimes the animals will fall violently upon the ground, groaning loudly, roll over upon their backs, and maintain that position for some few seconds, then rise, look round anxiously, and repeat the leaps. The eyes are wild in appearance, the pupils being much dilated; the mucous membranes are rather heightened in colour,—mostly of a purple tint,—especially the Schneiderian membrane; the mouth is moist, and not often unnaturally hot; the pulse is weak, and sometimes oppressed and compressible, numbering 29 beats, and often less in a heavy draught horse; at other times it will mount up to 44, or 50, and even to 56, in lighter bred animals. These symptoms are generally found to come on after the "supper," when the animals have been out the whole day; and it not unfrequently happens that before the meal is half completed the animal is attacked; when he suddenly leaves off eating, and looks round quite frightened and astonished at something which is invisible to the attendant. This perhaps subsides in a few seconds, and after a few mouthfuls more of food are swallowed, the pain becomes so great that it gives rise to those symptoms already named. I have seen many opened at the "knackers'," who informed me that they died before any aid could be obtained further than what the experience of the owner's afforded. I also have seen others at other places, death having speedily terminated their career;

and have been surprised to find that the contents of the whole of the alimentary canal were completely fluid, although constipation existed during life.

The treatment consists of the administration of powerful diffusible stimulants, such as Spts. Eth. Nit. or Ether. Rectif. and Spt. Ammon. Aromat. with Ol. Lini and Extract of Belladonna, in the form of draught, which seldom fails to give relief. I, however, generally throw up an enema of warm water, and if the pain should continue, I find great benefit from tobacco-smoke enemas. If required, a second draught is given in about half an hour.

From frequent observations, I am quite persuaded that this abdominal irritation is purely sympathetic, and consists of a spasmodic action of the peritoneal coat of the intestines; and I am further persuaded of the fact, that, in most cases, the pleura is involved, more or less, constituting influenza. I do not offer these few imperfect remarks as being something new, for I believe other practitioners see similar cases frequently; but with what success they are treated by them I am not aware.

I commenced the treatment of these cases as ordinary spasmodic colic, giving Tinct. Opii, and Solution of Aloes with Nitric Ether, but I soon found that the aloes, although in small doses, together with the opium, was productive of more harm than good, not causing the least mitigation of the symptoms. Contrariwise, the pulse increased in number, and became weaker, coma soon came on, the pain subsided, and the animal dropped down lifeless. I have been greatly astonished to see the manner in which the pulse has risen, and become quite imperceptible, in so short a time.

In the cases I have seen, the following were the post-mortem appearances. The abdominal viscera, in most instances, especially the peritoneal covering, quite black and congested, the blood having escaped without the walls of some of the vessels in the mesentery; the contents of the intestines mostly fluid throughout their whole extent; the liver congested, and the kidneys softened and easily broken down. The blood-vessels contain black coagulated blood; black patches are observed on the external surface of the stomach; the lungs are congested, and sometimes portions are hepatized, showing the length of time the disease has been going on. The lining membrane of the chest and the covering of the lungs are often thickened, opaque, and rough, with effusion of water within the cavity of the chest to a greater or less extent, and sometimes within the pericardium; the lining membrane of the trachea is black and congested, and in some so much so as

to produce a discharge of granular dirty fluid from the nostrils during the last few hours of the life of the animal.

In some cases, in which the disease has existed for some time before I have been called in, the breath is extremely fetid, and the mucous membranes yellow from the absorption of bile. These symptoms are precursors of death, especially when accompanied with coldness of the nostrils and extremities.

In the disease I have described, I find it a matter of some difficulty to convince the owners that something exists beyond "colic;"—that this is only one symptom of disease affecting other important parts. But the fact of several of them having their horses drop down dead at their work, has caused them to ponder over the matter most seriously.

Powerful stimulants, combined with narcotics, together with easily digested food, such as boiled barley and oats, soon effect a cure, when followed up by tonics and diuretics. Bleeding and physicking kills them quickly, and the excessive prostration of strength present contra-indicates the use of antiphlogistic agents.

CASE OF PUNCTURE OF THE THORAX.

By Jabez Adams, V.S., Warminster.

A short time since we were sent for in haste to Mr. F—'s, a distance of ten miles, to see a cart mare, which was reported to have received a serious injury. On arriving at our destination the following case presented itself. Our patient had been turned out to pasture with other horses, when one of her companions ran at her, driving her over a plough which had been inadvertently left in the field, one handle of which she struck with such violence as to break it off. On examination, we discovered the handle inserted deeply in the chest, with only a very small portion of it protruding. Efforts were immediately made with the hand to extract it, but so firmly had it become impacted, that this was not easily accomplished, and it was not until a large pair of pincers had been employed, that the offending body could be withdrawn. After it had been thus extracted, it was found to measure 24 inches in length, and about 3 or 4 inches in circumference. Having thus far effected our purpose, we turned our attention to the wound, which appeared to pass close to the first rib on the left side, between it and the

heart, &c., from thence running onward through the substance of the lungs, which was clearly demonstrable by the air rushing through the orifice with force at every expiration. But very little hemorrhage followed; the breathing was very stertorous, and the pulse of a peculiar character, viz. quick and bounding at the right submaxillary artery, and almost totally indistinct on the opposite side: altogether, the animal presented a very depressed appearance, from which we augured a speedy dissolution. Sutures were applied to the wound, and a dressing of collodion over it, which had the effect of preventing the egress of air; but which, however, continued, at every expiration, to be propelled against the orifice. Having administered some simple medicine, more however for the sake of quieting the owner than with any hope of benefiting the mare, we left her for the night, expecting to find her dead in the morning. The morrow, however, came, and we found the animal in much the same condition, except that which is so common in injuries of the pleura, viz. aerial extravasation over the whole of the body, and a painful cough; the pulse was quick and weak. Deeming this one of Nature's subjects to effect a cure of, or otherwise, we left her, ordering gruel *ad libitum*, and gave a little febrifuge medicine. But, to cut short the narrative, day succeeded day, and after the lapse of two weeks the animal was pronounced out of danger, and in about six weeks from the time of the accident, she was able to resume her wonted labour, and has worked apparently sound up to this time.

In reviewing this case there is nothing connected with it of which the practitioner can boast, inasmuch as no skill was exercised; but it certainly must strike the anatomist with amazement when he knows the situation of the heart, and the multitudinous important nerves, arteries, and veins, passing in and out the thorax, and yet that so large a body as I have described, 24 inches in length, and 3 or 4 in circumference, should have passed into the thoracic cavity without producing a fatal result.

A CASE OF TETANUS.

By the Same.

At the commencement of the present month, a chesnut mare, six years old, was sent by the owner to our stables, affected, as he thought, with a cold and sore throat. On examination, the muscles of the jaws were found extremely

rigid, and the mare evidently exhibited symptoms of approaching tetanus. A cathartic was administered; the head and jaws were stimulated, and the Extract of Belladonna given several times during the day. The next morning the jaws were completely locked, and the muscles of the extremities rigid. All the remedies usually resorted to were tried, but without effect, and at the end of the fifth day the animal expired.

Anxious to discover, if possible, the cause of the attack, a *post mortem* examination was instituted; when, to our surprise, on examining the mouth, a nail, with a head the size of a pea, and about a quarter of an inch in length, was found firmly stuck into the middle of one of the central incisor teeth; and this had evidently been the cause of this sad disease. Perhaps this case may be deemed unworthy of notice by some, yet it possibly may lead practitioners to look more closely into causes, and thus be not unproductive of benefit.

CASE OF HYDATID IN THE BRAIN OF A MARE; ALSO OF FALSE PRESENTATION IN A MARE.

By A. Morgan, V.S., Dalston.

Gentlemen,—I beg leave to forward you two cases that have occurred in my practice very lately.

Case 1.—On Monday, May 6th, I was sent for to attend an aged mare, the property of a Mr. Church, cab-proprietor, Hoxton; which, according to his statement, was suffering from spasmodic colic. However, on my arrival, I found her standing with her eyes partially closed, and in a state of coma. I directly stated to the owner that she was suffering from congestion of the brain, commonly called "sleepy staggers." I administered an aperient draught, and gave her an enema of warm salt and water, left her, and said I would see her again in about two hours, at the same time telling the man to keep cloths dipped in cold water applied to her head. On my second arrival, I was about to administer another draught, when she became very violent and pretty soon cleared the stable. After a little time we secured her, and I managed to take about four quarts of blood from her, as the owner seemed very desirous to have her bled. I told him she was now suffering from phrenitis, commonly called "mad staggers;" and that there was not the slightest hope of her recovery. She died during the night. Next morning I

made a *post mortem* examination, when I found the abdominal viscera perfectly healthy in appearance, but both the stomach and intestines were literally crammed with food. The lungs were a little diseased. The vessels of the brain were very much congested, and on the top of the cerebrum there was a complete cavity, which contained a membranous sac resembling an hydatid. I have preserved it, and shall be very happy to show it to any member of the profession.

Case 2.—On the 25th of March, 1855, I was requested to go to Walthamstow, to see a mare belonging to a Mr. Carter, that had been turned out to foal. The man said the mare was down and straining violently, and that the foal was coming the wrong way. When I arrived, I found the statement to be perfectly true: the mare was down, groaning and straining violently, and the head, neck, and one fore leg of the foal had passed through the rectum, and the other fore leg through the vaginal opening. The first thing I did was to get the mare on her legs, which having done, and placed the hobbles on her, I commenced operating by taking away the parts that were protruding through the anus, close off with the rectum. Then dilating the sphincter ani, and pushing the parts back that protruded through the opening in the intestine, I with a little assistance extracted the remaining part of the foal through the vagina. I gave the mare a draught containing Tr. Opii, ℥j; Ol. Lini, lb. j; gruel one quart, which I repeated at night, ordering her to have nothing but warm bran mashes as her diet. Without entering into further details, the animal was under my care for about a fortnight, when she was sold to a builder for £18, and is at present working in a brick-cart, perfectly well.

[We have met with several analogous cases to the above, in which the rectum became lacerated in the act of parturition, either from a false presentation of the fœtus, or from the violence of the throes when the presentation was natural. In each case, if the mare survived the injury, imperfect closure of the rent of the intestine followed, and the animal throughout life has passed more or less of the feculent matter through the vaginal opening. She has thus not only constantly suffered from irritation of the vulvæ, and abrasions of the surrounding integument, but presented a very disgusting appearance to the eye of the observer.]

CONTEMPORARY PROGRESS OF VETERINARY SCIENCE AND ART.

By John Gamgee, M.R.C.V.S.

The recorder of the contemporary progress of our science and art—the title which I presume to assume—is self-intelligible. Yet I must define it more accurately, and expatiate on the motives actuating me to undertake such a task. Before developing my own views, however, I am bound to acknowledge that, for the opportunity of carrying out these long cherished projects, I am indebted to the very cordial manner in which Professors Morton and Simonds, in their anxiety to confer every possible advantage on the profession, have accepted my proposal for introducing this department into their Journal.

My aim in the execution of this plan is to convey, in the smallest possible space, the largest possible amount of knowledge calculated to be useful to my professional brethren, and which would otherwise be almost, if not completely, lost to them. The confusion of languages which is said to have arrested the famous work of Babel, is still one of the greatest causes in retarding social progress in its multitudinous forms. Prejudice pervades the masses of mankind, and every nation, continuing more or less careless of the fate of others, lives separately, without deriving the benefit which might accrue from an impartial appreciation of all, and not a limited part of, the works of men.

Since Vial de St. Bel founded the St. Pancras School, veterinary science has progressed in England independently; placing the ability displayed in its cultivation in different countries on the same footing, it is obvious that veterinary knowledge must have multiplied in proportion to the number of men and of nations who have been devoted to it. Yet let any of my readers ask themselves how often *they* have dreamt of searching for knowledge from Italy, France, Denmark, Germany, Russia, or elsewhere? The only conclusion they can draw is, that they are conversant with only a fraction of facts bearing on their calling.

With these ideas I have travelled extensively over the continent, ransacked libraries, dissecting rooms, museums, and infirmaries, argued with professors and pupils, practical men and speculators, that by an examination of all, I might acquire personal experience of the actual condition of vete-

rinary knowledge throughout the world. The fruit of these researches will in due course be given to the world, meanwhile, I purpose publishing periodically the results of progress. Before further developing my ideas, pure justice impels me to acknowledge that they are common to my brother and myself, and we have from the very commencement of life in the scientific world made common cause, and lived with one mind for one purpose. Truly, there is a vast difference in the immediate object of our pursuits, devoted as he is to the relief of human suffering in his hospital and private practice; but fundamentally our aims are common, and if this intellectual fusion prevent us laying individual claim to parts of our works, it is no matter to us.

To science and art alike we have avowed intention to dedicate our efforts. One word in exposition. There are those who, feigning to contemn science, endeavour to seek justification in the devotion with which they profess to venerate what they call practice. To argue the point would be out of the question, for many reasons; I shall merely state my views in the fewest words. In our profession, pre-eminently, a man requires for success that both his brains and hands be educated. The handicraftsman we confound with the juggler, and the stone-breaker; of the, by contrast, so called theorist,—oh! prostituted word—we have no higher opinion.

"Every man," it is the words of John Bell I quote, "will reason well and truly in exact proportion to his acquired knowledge, and will act with sense and prudence in exact proportion to his sound reasoning. . . . . If you put in motion one whose mind is improved by study and ripe for practice, his powers rise in any perilous or agitated scene. . . His reasoning is rapid and sure. It is like instinct, direct, active, effectual. He thinks, judges, resolves, and acts, at once. He reaps advantages from pathology which, (in the time of his studies), he did not believe to be so closely allied to practice; he gives commands with an intrepidity, security, and firmness, which he is delighted to feel. It is in the midst of these scenes of difficulty, that such a man, so educated, so inspired, comes to be truly known." It is the inspiration, the education of such a man we have in view.

We have already announced intention to seek knowledge in all quarters for the accomplishment of this aim. It may interest others to know something about the mines which are to yield the promised lore. To satisfy this desire it would be necessary to recount the whole history of our scientific pilgrimage, but it is impossible for us to do justice

to that subject now, and hence we shall briefly advert to a few important points.

With Naples, as the furthest south, we begin, and here the school, which at other times we had found in a dilapidated condition—a real wreck—was, when last we visited it, in process of very great reform, and it promises to yield a rich harvest in time. Fauvet holds the chair of Veterinary Medicine and Surgery in the University of Rome, a fact more worthy of note as a glory to our professional rank, than as calculated to confer immediate advantages. Tonelli professed for many years on veterinary matters in the school of Galileo, but on reaching Pisa, we regretted to find that his course had for some time been suspended. A different lot awaited us beyond the Apennines. Here, in the most ancient of universities, that of Bologna, we found Alessandrini, whose museum of comparative anatomy and pathology promises to be, in our profession, what John Hunter's is to human surgery. At Ferrara, also, are distinguished men, and under the able direction of the zealous and learned Professor Bonaccioli, this veterinary school sends out, probably, the best veterinary surgeons in the Papal States; we can promise good fruit to be there reaped. In Lombardy, a veterinary teacher is attached to both Universities, of Padua and Pavia, with the sole object of instructing the students of human medicine in comparative pathology. It is in the Lombardo-Venetian capital that the Austrian government patronizes a veterinary school, the progress of learning in which we shall be able to record, thanks to the perseverance and zeal of our friend, Dr. Corvini, who has recently founded a veterinary periodical which is daily gaining importance.

In Turin, the Brothers Lessona, both vigorous, talented, and useful professors, are seconded by young men of very great distinction. Our soul abhors partiality; we are not guilty of it in selecting from the little family, Ercolani, in whom, with his colaborator Dr. Luigi Vella, we confide as one of the most solid props of our hope in the progress of veterinary learning.

The Alps crossed, we are in the birthplace of Haller. The veterinary school of Berne is one of the most distinguished in Europe for the erudition of its staff, and though we cannot say so much for Zurich, we have the brightest anticipations with regard to one of its teachers, Dr. Zangger.

The Grand Duchy of Baden and the little kingdom of Wurttemberg are both famed for their schools, thanks to the labours and talents of Fuchs and Hering. I must specially

advert to Hering, of whom it may in simple justice be said that he approaches more closely to the idea of a perfect man in veterinary science and art than perhaps the most enthusiastic amongst us would conceive it possible for any one to do. The schools of Stuttgart, Vienna, and Berlin, not forgetting Munich, Dresden, Hanover, and the Belgian capital, are enormous storehouses, from whose learning we trust to reap much. Gurlt and Hertwig in Berlin, are names second to none in the annals of contemporary cultivators of all sciences.

The land which gave birth to Bourgelat, and with him Ambroise Paré, first gave the impulse to the progress of comparative and human surgery, and still holds its rank. The resources of the French schools are inextinguishable.

To fulfil my programme, to cull monthly from the vast arena mapped out, the progress of veterinary science and art is a project so vast, that one must not be surprised if it be only inadequately fulfilled. Some time must elapse before a judgment in point can be formed; as the scheme is being worked, it will gradually be perfected.

Conscious of the difficulty of the undertaking, I shall next month cheerfully commit to these pages its first part. I have no fear of the judgment of impartial men. I court it, because I venerate it. How much I may leave undone will not be the only object of their measure. All human works are imperfect; in judging them, the estimate must be formed according to the amount of profit they are calculated to confer.

Facts and Observations.

SAVIN PRODUCING ABORTION IN MARES.

Mr. E. Mellett, M.R.C.V.S., Henley-on-Thames, has communicated to us the following history. "About a fortnight ago, a farmer residing near this town, had a misunderstanding with one of his carters, and discharged him, but he continued to live in a cottage adjoining his premises.

"My professional attendance was required a few days since to two mares heavy in foal. One of them passed her foal in my presence, with very little assistance, on Monday evening, and the other on Wednesday last. Both colts were dead, and apparently, from the putrid state in which the membranes were, I should imagine they had been dead, one

about ten, and the other about twelve days. This, however, is conjectural. Abortion had evidently been produced by the aid of savin, the smell of which was very strong in the urine and fæces. For a short time before, there had been observed a rapid falling away of the flesh of the animals; and when called to see them, I noticed that mucous discharge took place from the anus, which seemed to excoriate the parts over which it passed.

"My treatment, after abortion had taken place, consisted of the administration of the spirits of nitric ether with laudanum, in consequence of the subsequent straining being violent, followed by a gentle aperient, and I am now giving tonics. The mares are both progressing favorably, but are still very weak.

"In the manger, after the farmer had retired to rest last night, was placed some saline substance, which I send to you a portion of for examination."

[The salt forwarded is only common table-salt in large crystals. The *form* of the crystal is cubicular. Heat causes decrepitation. The *taste* is purely salt. Dissolved in water, and a solution of nitrate of silver added to it, a curdy precipitate is thrown down, which darkens on exposure to light, is insoluble in nitric acid, but soluble in ammonia.

A few grains distilled with dilute sulphuric acid, and the disengaged vapour received in pure water, rendered it acid, and the nitrate of silver gave the like precipitate to the above.

The solution that remained after distillation, afforded no precipitate with either the chloride of platinum or tartaric acid.

We feel therefore convinced that it was the savin which had done the mischief, and the salt was merely placed in the manger to deceive.

Burnett, speaking of the *Juniperus Sabina*, says—

"It is a powerful stimulant; but although recommended as a diaphoretic and emmenagogue, yet as the Malthusian doctrines, although theoretically commended are not practically enforced, it is seldom used, except in the form of ointment to promote the discharge from blisters, or to cleanse foul ulcers and other unhealthy sores. The expressed juice of the leaves is said to be serviceable in the treatment of *tenia capitis*."

Dr. Pereira enters more fully into a consideration of the subject. With reference to its physiological effects on *animals*, he observes that—

"Savin acts on animals as an acrid poison. Orfila ('Toxicol. Gén.') applied two drachms of the powder to an incised wound in the leg of a dog; inflammation and infiltration of the limb took place, and death occurred in about thirty-six hours. Four drachms introduced into the stomach of a dog, and the œsophagus tied, caused death in thirteen hours; the stomach was bright red, and the rectum a little inflamed. Orfila infers that its effects depend principally on its absorption, and its action on the nervous

system, the rectum, and the stomach. A drachm of *oil of savin* was given by Hillefield (Wibmer, 'Wirk. d. Arzneim. u. Gifte, Bd. iii, H. 1, p. 191), to a cat. It caused a flow of saliva, anxiety, frequent discharge of urine, dulness, trembling, and, in an hour and a quarter, bloody urine. The animal having been strangled, the bladder was found contracted, with some coagulated blood contained in its cavity.

On man.—Oil of savin, the active principle of the herb, is a powerful local irritant. When applied to the skin, it acts as a rubefacient and vesicant. On wounds and ulcers, its operation is that of an acrid (not chemical) caustic. Swallowed in large doses, it occasions vomiting, purging, and other symptoms of gastro-intestinal inflammation. In its operation on the system generally, it is powerfully stimulant. 'Savin,' says Sundelin ('Heilmittellehre, Bd. ii, S. 180, Auf. 3tte), 'operates not merely as irritants generally do, as a stimulant to the arterial system, but it also eminently heightens the vitality of the venous system, the circulation in which it quickens. It next powerfully stimulates the absorbing vessels and glands, the serous, the fibrous, and the mucous membranes, and the skin. It operates as a specific excitant and irritant on the kidneys, and yet more obviously on the uterus. The increased secretion of bile, and the augmented volume of the liver, both of which conditions have sometimes been observed after the copious and long-continued use of savin, appear to be connected with its action on the venous system.' Mohrenheim (Murray, 'App. Med.' vol. i, p. 59) mentions the case of a woman, 30 years of age, who swallowed an infusion of savin to occasion abortion. Violent and incessant vomiting was induced. After some days she experienced excruciating pains, which were followed by abortion, dreadful hemorrhage from the uterus, and death. On examination, the gall-bladder was found ruptured, the bile effused in the abdomen, and the intestines inflamed. The popular notion of its tendency to cause abortion, leads, on many occasions, to the improper use of savin; and the above is not a solitary instance of the fatal consequences thereof. A fatal case of its use as an emmenagogue is recorded by Dr. Dewees ('Compend. Syst. of Midwifery,' pp. 133-4). That it may frequently fail to provoke premature labour is shown by the case related by Fodéré ('Méd. Lég.'), of a woman, who, in order to produce abortion, took every morning for twenty days, 100 drops of this oil, and yet went her full time, and brought forth a living child. It ought to be well known that in those cases in which it may succeed in causing miscarriage, it can only do so at the risk of the woman's life. Vogt ('Pharmakodyn.') says that it has a tendency to induce an apoplectic state in the fœtus. The emmenagogue power of savin is fully established. Perhaps the observations of Home ('Clinic. Experiments,' p. 419) are the most satisfactory of any on this subject, confirmed as they are by the reports of many other accurate observers.

Uses.—Savin is not much used internally; but in cases of amenorrhœa and chlorosis, depending on or accompanied by a torpid condition or deficient action of the uterine vessels, it may be given as a powerful uterine stimulant. In such cases it proves a most efficient remedy. According to my own observation, it is the most certain and powerful emmenagogue of the whole materia medica. My experience of it, therefore, confirms the statements of Home ('Clin. Experiments'). Though I have employed it in numerous cases, I never saw any ill effects arise from its administration. Of course its use is contra-indicated where irritation of the uterus, or indeed of any of the pelvic viscera, exists.

In chronic rheumatism, with a languid circulation in the extreme vessels, Chapman ('Elem. of Therap.') speaks in very high terms of it. It has been used as an anthelmintic.

As a topical agent, savin is frequently employed, mostly in the form of the cerate, to make *perpetual blisters*. Equal parts of savin and verdigris, in powder, form one of the most efficacious applications for the removal of venereal warts. The powder, an infusion, or the expressed juice of the plant, is occasionally applied to warts, to old and indolent ulcers, and in cases of psora and tinea."]

SABULOUS DEPOSIT FROM THE URINE OF A HORSE.

Mr. J. Atcherley, M.R.C.V.S., Bridgnorth, has forwarded to us some urine of a horse, accompanied with the following particulars of the case. "The subject is a brown gelding, 9 years old, and whilst on a journey, in double harness, from Monkhopton to Shrewsbury, when within a few miles of the latter place, he evinced an inclination to stale, and having completed the act, he was unable to retract the penis into its sheath. The coachman, however, proceeded on to Shrewsbury, and the organ being pendulous, it had knocked against each trace, which caused a slight excoriation on either side of the glans. After resting some time, as the penis still continued pendulous, the owner left the animal under the care of Mr. Clay, V.S., Shrewsbury, where he remained a week. On the evening of his return home, the horse evinced great pain in staling, and the penis again became pendulous; but by the application of cold water it returned into its sheath. Now, at each time of staling, he manifests pain by lifting his near hind leg outwards—not backwards or forwards—and from the peculiar appearance of the urine, and the symptoms, I thought that there might be a calculus in the bladder, or some deposition taking place in that viscus; consequently, I examined *per rectum*, but was unable to detect anything. After the examination, the animal showed symptoms of pain, and staled several times, but the urine was voided in extremely small quantities, and he continued for some time after to put himself in a position to urinate. Feeling, nevertheless, assured there was a deposition taking place in the bladder, or some part of the urinary apparatus and having given the owner my opinion to this effect, he was very anxious to have the urine analysed, therefore, I have taken the liberty of addressing you on the subject.

"I must inform you that the water the horse has been drinking contains so much carbonate of lime in solution that it will petrify anything in a few months. I shall feel further obliged if you will give me your opinion, from the nature of the urine, as to the mode of treatment to be adopted."

[*Examination, chemical and microscopical, of the Urine.*

Appearance, that of a somewhat viscid, nearly opake fluid;

Odour, natural;

Reaction, alkaline;

Specific gravity, 1·030.

After the application of *heat* to it, numerous flocculi were thrown down as the fluid again cooled. *Nitric acid* being added to it, a considerable effervescence took place, and carbonic acid gas was freely extricated. On applying heat to this fluid, it darkened in colour, arising from the action of the acid on the mucus.

Examined by the microscope, numerous crystals of carbonate and oxalate of lime were seen to exist, with a few of the phosphate of lime; these being mingled with much granular matter, having no definite crystalline form, and which was unacted on by either ammonia or a solution of potash, but which readily dissolved in the acids.

When the carbonate of lime was decomposed by means of hydrochloric acid, the crystals of oxalate and phosphate of lime were rendered more obvious.

Epithelial scales were also found in abundance.

Remarks.

This peculiar state of the urine shows a tendency not only to calcareous deposition, but its accumulation, so that a calculus may hereafter be formed in some part of the urinary organs, or even now be forming.

The presence of the oxalate of lime would lead to the inference that some functional derangement of the kidneys exists, and the urine being thus rendered abnormal, it acts as an irritant to the mucous lining membrane, from which more of its secretion being poured out than is natural, we derive the phosphates; while it also acts as a ferment to the urine, and we then have the generation of carbonate of ammonia by the decomposition of the urea, when the carbonate of lime and the phosphate become precipitated.

Treatment suggested.

Particular attention to diet, and the exhibition of the hydrochloric acid in doses of from ʒj to ʒiij, in water, daily, with an occasional laxative interposed. And as it is reported that the water the horse has been drinking is highly impregnated with the bi-carbonate of lime—the probable source of the excess of lime-salts in the urine—it should be changed;

or if this be not possible, *boiled* before it is given to the animal.

Should the internal administration of the acid fail to effect any alteration in the character of the urine, a very dilute solution—one part of the acid to sixteen or twenty parts of water—may be injected into the bladder, or diluted vinegar may be used.

The quantity of the acid may be increased to four or even six drachms a day, but it is better then to divide it in two doses.

The acid will act in a two-fold way:

1st—It will convert the carbonate of lime into a soluble salt.

2d—It will operate as a general tonic, and thus induce a healthy state of the digestive functions.]

PREVENTION OF MARSH FEVER.

A very curious paper was read before the French Academy of Sciences, on the 13th of November last, by M. H. Martinet, on the destruction of febrile emanations from marshes, and consequently the prevention of marsh fever. The remedy is no other than arsenical vapours! M. Martinet was led to make trial of this remedy by having read the following anecdote in a book by Dr. Stokes: "In certain parts of Cornwall, fever decimated the population: a foundry was established, and the fevers disappeared. The process of ore-roasting liberated fumes of arsenic, and the latter neutralized or destroyed the febrile poison." The above anecdote having struck the attention of M. Martinet, he did not lose sight of the matter involved, and soon came another fact to strengthen the theory of his adoption. The fact was this. M. Bury noticed that smelters of copper ore enjoyed protection from cholera; and that, generally, habitations situate near foundries were exempted from this terrible scourge. Now copper usually contains arsenic, as every chemist knows; and arsenic, being a volatile metal, flies off in the process of smelting. In support of M. Martinet's theory, we may advert to the fact, that arsenic has for some time been employed medicinally for the treatment of marsh fevers. We fear, nevertheless, that the theory claims too much, and we doubt the propriety of including marsh fever and cholera under one generalization. The reader who wishes to know more about the suggestion

of M. Martinet may consult 'The Comptes Rendus,' No. 20, (Nov. 1854), p. 974.

[Not long since we visited the Copper-Smelting works at Swansea, for the purpose of adding, if we could, to the facts already known respecting the peculiar ossific diseases to which horses and cattle are liable, in that locality, caused by the disengaged vapours. We ascertained that ophthalmia is not so prevalent an affection there as it has been stated to be; and, from what we saw, we were induced to refer the production of the singular state of the osseous tissue and joints rather to the *inhalation* of the vapours, than to their becoming deposited on the grass, and thus being taken into the system with the food. 1st—Because all around, and to a very great distance from the works, there is nothing to be seen but extreme barrenness. 2d—We believe the vapours to be of such a character, that only to a certain distance could they ordinarily be borne by the winds, and then falling, they would destroy all the vegetation on which they might rest.

Dr. Shæfhauetl brought these vapours in contact with steam, and subjected them to great pressure, by which he obtained a solid compound, in the form of beautiful crystalline leaves, consisting of—

Arsenious Acid	68·250
Sulphuric Acid	27·643
Protoxide of Iron	3·029
Oxide of Copper	0·420
Oxide of Nickel	0·656
Loss	0·002
	100·

We were informed of the exemption of the workmen from attacks of cholera during the time this disease prevailed in the neighbourhood, and which we felt disposed to attribute, not to the disengagement of arsenious acid, but rather to the sulphurous acid that accompanies it, and which acts as a disinfectant by decomposing the fetid binary compounds of hydrogen, especially sulphuretted hydrogen. If two volumes of this gas be mixed with one volume of sulphurous acid, they mutually decompose each other, forming water, and throwing down the sulphur; although Thompson says it is not sulphur, but a compound of that substance with oxygen and hydrogen, which he calls *hydro-sulphurous acid*. Or, should it be that the sulphurous acid becomes converted into the sulphuric, this would also effect its decomposition, and the results would be the production of water, sulphurous acid,

and the precipitation of sulphur. Either compound would, therefore, in a similar manner act as a deodorizer and disinfectant, and at the same time condense the ammoniacal gas, that is always given off from decomposing organic matters, especially from accumulations of dung and urine. For, although ammonia be not in itself very prejudicial or offensive, it nevertheless mingles with the fetid gases, and by its volatility becomes their carrier; they are thus diffused through the atmosphere, by which it is empoisoned and rendered productive of disease.

We have heard that £1000 have been offered for the discovery of a successful means of neutralizing these vapours; and that one firm,—Messrs. Vivian, of the Hafod works—has spent no less than the princely sum of £14,000 to obviate their deleterious effects; and still indelible proofs of their influence are to be seen.]

Extracts from British and Foreign Journals.

ON THE STRUCTURE OF THE MUCOUS MEMBRANE OF THE ALIMENTARY CANAL.

By Erasmus Wilson, Esq., F.R.S.

(*Continued from p.* 290.)

VILLOUS MUCOUS MEMBRANE.

The term "villous," derived from "villus," meaning wool, coarse hair, the nap of cloth, pile of velvet, &c., and itself derived from "vellus," a fleece of wool, seems aptly applied to the appearance of the mucous membrane of the small intestine. The nap is quite evident, particularly when the naked eye is aided by a magnifying lens, and the view is greatly assisted by immersing the membrane in water, and examining it in that fluid. When the mucous membrane of the ileum is viewed in this manner with a lens of low power, the fidelity of the comparison with the pile of velvet is very obvious, for not only is the "nap" apparent, but the pili also which compose the nap; these pili being the villi, which, by their abundance, constitute the villous surface. Pursuing, then, the idea suggested by the term "villous," we are led to its component element, which we find to be a pilous projection of the membrane, an enlarged papilla, a villus; the latter

term in this sense being synonymous with pilus (a hair), so that we might use indiscriminately the term villous or pilous.

Such appears to me to be the anatomical signification of the terms "villous" and "villus." We first apply the term as indicative of the vellus or fleece of the mucous membrane, "vellus" being derived from "velare," to clothe; and, secondly, we analyse the construction of the vellus, and find it to be composed of minute pili, to which we give the name villi, and from the latter we deduce the adjective villous. In this sense, therefore, villous not only applies to a fleecy nap developed on a surface, but also to the particular composition of that nap of pili or villi.

I am thus particular in my endeavours to fix the exact meaning of the term "villous" and "villi," because a large portion of the mucous membrane of the small intestine is constructed on a different principle to this, one in which there are no villi, but in their place the surface of the membrane is raised into laminated or lamellated folds, these folds or plaits having a gyrated or convoluted arrangement. Hence, the villous, or rather vellous, mucous membrane admits of a division into that which is composed of villi, the true villous, or simply the villous and the lamellated.

Fig. 3.

A portion of the mucous membrane, magnified nineteen times, showing conical villi. In the hollows between the villi are seen the apertures of simple follicles (*b*); and near the bottom of the figure is a zone of follicles (*a*), surrounding what has been described as a solitary gland. These villi measured $\frac{1}{60}$ of an inch in length, by $\frac{1}{60}$ in breadth at the base, and from $\frac{1}{125}$ to $\frac{1}{150}$ of an inch near the summit.

In the villous mucous membrane the villi are, for the most part, conical in shape with obtusely rounded points, and

slightly flattened, the base of the villus having an oval form. Such a villus as the one now described, divested of epithelium, measured $\frac{1}{60}$ of an inch in length, $\frac{1}{60}$ of an inch in greatest breadth at the base, and from $\frac{1}{125}$ to $\frac{1}{150}$ of an inch at the summit; and this may be taken as the average measurement of the villi. Some are smaller, and more or less cylindrical in form; one of these measured $\frac{1}{200}$ in diameter, and others are broader and flatter, and form a transition to the lamellated membrane. The length is the same in all.

In structure, each villus is composed of the transparent granular tissue of the corium enclosed in limitary membrane; a capillary plexus, with its afferent artery and efferent vein, a lacteal vessel, and probably a nervous loop. The capillary plexus occupies the surface of the villus lying immediately beneath the limitary membrane, while the artery and vein are situated in the interior substance of the villus, running sometimes together, and occupying the central axis or one side of the villus, but more frequently apart, in which case, and particularly in the flat villi, the artery ascends the villus on one side, while the vein descends on the other. In its course within the villus, the artery gives off branches, which form the capillary plexus with large open meshes of the surface of the villus.

The ground of the mucous membrane between the bases of the villi is of small extent in comparison with the surface occupied by the villi themselves, the latter appearing to be as closely placed together as is possible for a number of oval-shaped discs, which represent the bases of the villi. This ground surface, which nowhere approaches in extent to the diameter of a villus, is concave, rising on all sides into the slopes of the villi. In structure, it is composed of a capillary plexus, with large open meshes. The capillary plexus is continuous with that of the villi, and the large meshes are occupied by the openings of the crypts or simple follicles of the mucous membrane. In the centre of the area between the villi, there is a cluster of three, four, or five follicular openings; while around the base of each villus there is a more or less complete circle of such openings.

It follows from this description, that if a villus were cut off near its base, the latter would be seen to be surrounded by a circle or zone of follicular apertures; or if a villus remained undeveloped, the same appearance would be obvious. Now, this latter phenomenon does take place; certain of the villi are undeveloped, aborted villi; they have the oval shape of the base of a villus, with the circle or zone of follicular openings around their circumference, the central area being

perfectly flat, or slightly raised, according to the degree of arrest of development; an oval zone of these openings, such as I am now describing, measured $\frac{1}{60}$ of an inch in length by $\frac{1}{90}$ of an inch in breadth. The central area differs, then, in its degree of conical prominence, such prominence being sometimes wholly wanting; but whether such prominence exist or not, there is always the same arrangement of vessels as in a perfect villus, a central artery and vein, and a delicate capillary plexus, finer considerably than that of the villus, radiating from the centre to the circumference, and there being continuous with the intervillous plexus, the zone of crypts or simple follicles occupying the larger meshes of the intervillous plexus around the base of the aborted villus.

The structure which I am now describing, that is to say, a slightly convex disc, surrounded by a zone of simple follicles, has heretofore been considered as a gland of the small intestine, a sacculated follicle or gland without excretory aperture, as in fact the glandula solitaria of the small intestine. After close examination, I can find nothing to warrant such a conclusion.

The Lamellated Mucous Membrane I found upon and between the valvulæ conniventes of the jejunum; it was composed of lamellæ $\frac{1}{250}$ of an inch in breadth (divested of epithelium) and variously convoluted and intertwined. The lamellæ were of considerable length, and about equal in depth to the villi ($\frac{1}{60}$ of an inch), but so closely packed together that no ground surface was visible between them. I was therefore unable to determine the presence or absence of simple follicles.

Fig. 4.

A portion of the mucous membrane of the jejunum lying between the valvulæ conniventes, magnified nineteen times, and showing the lamellated and convoluted form of villi; the breadth of the lamellæ is $\frac{1}{250}$ of an inch.

GLANDS OF THE ALIMENTARY MUCOUS MEMBRANE.

The glands of the mucous membrane of the alimentary

canal are usually divided into three groups—tubular, saccular, and compound.

Tubular Glands.—The tubular glands are the simple crypts or follicles, mere inflections of the limitary membrane into the substance of the corium, terminated in *cul-de-sac* or in small dilatations or loculi.

The follicles of the stomach, the gastric or pepsiniferous follicles, are longer than those of the intestine, and loculated at the extremity. They open, as already described, into the floor of the alveoli, from six to twelve into each alveolus. Their apertures are oval in shape, and, divested of epithelium, measure in long diameter $\frac{1}{1200}$ of an inch.

The follicles of the small intestine, the crypts or simple follicles of Lieberkuhn, are simple cæcal pouches, terminating in *cul-de-sac*, without loculated extremities, and shorter than the gastric follicles. They are found most abundantly in the villous mucous membrane; namely, in the intervillous spaces, where they occur in small clusters—two, three, four, or five; around the bases of the villi, where they form circles or zones; around the aborted villia (the so-called solitary glands), where they also form circles or zones; and in the floor of the alveoli of the aggregated glands of Peyer.

Simple follicles have also been described as entering into the structure of the large intestine, the alveoli of the mucous membrane have been mistaken for the apertures of glandular crypts. The alveoli and the glands which they contain are, however, perfectly distinct from the follicles now under consideration, and different in structure. If simple follicles exist at all in the mucous membrane of the large intestine, they are most likely to be found at the bottom of the hollow cavities of the solitary glands, where I think I have detected them.

Simple tubular follicles or crypts are, therefore, found in three situations; namely, 1, In the stomach, under the name of gastric follicles; 2, In the villous mucous membrane of the small intestine; and 3, In the alveoli of Peyer's glands. Their presence in the lamellated mucous membrane of the small intestine I hold to be undetermined; and in the large intestine I hold them to be absent with the exception mentioned above.

Saccular Glands.—The so-called saccular glands, consisting of a lentil-shaped sacculus or capsule placed beneath the limitary membrane, and having no excretory aperture, I believe to have no existence. The recognised instances of these glands are the lenticular glands of the stomach, the glandulæ solitariæ of the small intestine, and the glandulæ

agminatæ of the same intestine. The first of these I have not examined; the second, namely, the glandulæ solitariæ of the small intestine, particularly of the ileum, are, as I have already described, aborted villi surrounded by a zone of simple follicles, and not glands; their whitish appearance, when contrasted with the neighbouring mucous membrane, being due to the less degree of vascularity of their area. The glandulæ agminatæ of Peyer, presently to be described, are not saccular glands; nor are the solitary glands of the large intestine.

Compound Glands.—The compound glands usually described are small lobulated glandular bodies, termed pharyngeal and œsophageal, in connection with the pharynx and œsophagus, and duodenal or Brunner's glands in connexion with the duodenum. In structure they resemble salivary glands, being composed of acini, efferent ducts, and an excretory duct. These are all the compound glands generally recognized; but I have now to call attention to another form of the compound gland more simple in structure and more superficial in position than those already mentioned, and approaching very closely in appearance and structure to the sebiparous glands of the skin; they are very probably the true muciparous glands of the alimentary canal.

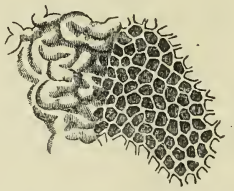
The muciparous glands are found both in the small and large intestine. In the latter they occupy the alveoli, and constitute the floor of those cavities. They are white, semi-transparent, obscurely lobulated, and provided with an excretory aperture. In a word, they correspond so completely with the sebiparous glands of the skin that the analogy between them is forced on the mind in regarding them; their whiteness and semi-transparency being due to their epithelial structure, as is the case with the sebiparous glands. Commonly each alveolus has its separate gland; but occasionally, and especially when the alveolus is longer than usual, there may be two glands and two excretory apertures. The gland fills the alveolus, rising almost to the level of its brim, and thereby rendering the cavity of the alveolus very shallow; and the excretory aperture is surrounded by a protuberant lip.

As I have before remarked, on those elevations of the mucous membrane of the large intestine constituting the solitary gland, the alveoli are deeper and smaller; so deep, in fact, that the floor is not seen: hence, probably, the supposition generally entertained with regard to them, that they are a mere aggregation of simple follicles.

The muciparous glands of the small intestine have hitherto

escaped observation, or have been confounded with irregular patches of aggregated glands. I have found them only in the lamellated mucous membrane, and principally on the valvulæ conniventes. In this portion of the membrane they seem to take the place of simple follicles, which latter appear to be wholly absent. They occur in patches as large as a lentil, but perfectly flat, and are identical in structure with the mucous membrane of the large intestine, consisting of a reticular framework and alveoli. The septa somewhat thicker than those of the large intestine, measure (divested of epithelium) between $\frac{1}{600}$ and $\frac{1}{450}$ of an inch in breadth, and contain from two to four rows of minute capillaries, which form a plexus with close meshes. The alveoli are polygonal, for the most part hexagonal in form, and somewhat larger than those

Fig. 5.



A portion of the free border of one of the valvulæ conniventes of the jejunum, magnified nineteen times, and showing an alveolar and glandular structure, not hitherto described. The mode of transition of the lamellated into the alveolar structure is seen. The alveoli measured $\frac{1}{200}$ of an inch by $\frac{1}{300}$, being as large as those of the stomach, and somewhat larger than those of the large intestine; the septa measured between $\frac{1}{600}$ and $\frac{1}{450}$ of an inch in width; the alveoli were shallow, and contained in their base a mucous gland with an excretory opening.

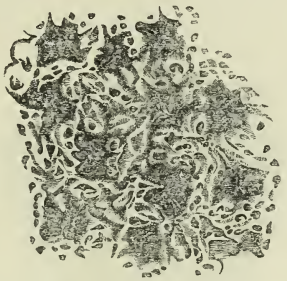
of the large intestine, measuring (divested of epithelium) between $\frac{1}{300}$ and $\frac{1}{200}$ of an inch in longest diameter. Each contains a muciparous gland, which forms its floor, and the gland is furnished with a central excretory opening; indeed, in every way, except in being somewhat coarser, this glandular structure is identical with that of the mucous membrane of the large intestine. Around the circumference of the glandular patch, the reticular structure is imperceptibly lost in the lamellæ of the lamellated membrane.

Peyer's Glands.—The surface structure of the glandulæ agminatæ, Peyer's glands, resembles that of the mucous membrane of the stomach, in being composed of a reticular framework with included alveoli; the floor of the alveoli being perforated by the apertures of numerous simple follicles. The raised portion of the network or septa measure (divested

of epithelium) between $\frac{1}{120}$ and $\frac{1}{70}$ of an inch in breadth; the alveoli are very variable in size, $\frac{1}{50}$ of an inch being a general average. An alveolus of small dimensions measured $\frac{1}{60}$ of an inch by $\frac{1}{75}$; while another measured $\frac{1}{45}$ by $\frac{1}{60}$.

The reticular framework has the appearance of a very delicate membrane puffed up to its proper elevation, and pierced with numerous small angular and oval openings, the

Fig. 6.



A portion of one of Peyer's glands, magnified nineteen times. The alveoli are deep, they measure $\frac{1}{45}$ by $\frac{1}{60}$ of an inch, and the septa between the alveoli measure from $\frac{1}{120}$ to $\frac{1}{70}$ of an inch. A vascular network and the openings of numerous simple follicles are seen in the floor of the alveoli: and the septa are marked by numerous circular and elongated sulci.

openings being the mouths of shallow pits, and resembling the depressions on some light material, such as muslin, produced by the process termed "quilting." These openings might, on a superficial observation, be taken for simple follicles; but I am inclined to think that such is not the case. The reticular framework presents on the surface a rich network of capillary vessels with small meshes.

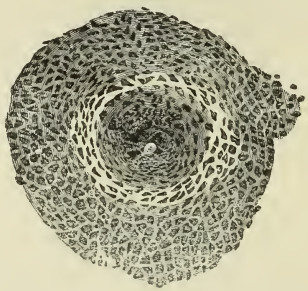
The alveoli have a general squareness of form, but are indented upon the sides more or less deeply, and hence are very irregular in outline. Their size is about $\frac{1}{50}$ of an inch in diameter, and they are slightly longer in one direction than in the other. They are sharply cut along the margin, and about $\frac{1}{300}$ of an inch in depth. The floor of the alveoli is somewhat raised in the centre, and from this raised part are given off ridges or spurs, which radiate towards the circumference, and become continuous with the walls of the cavity. This structure reminds us of the floor of the alveoli of the stomach, and, like it, the raised portion and the spurs consist of a plexus of fine capillary vessels. The spaces or foveolæ, between the spurs, from five to eight in number, are deeper than the rest of the floor, and in them are seen the apertures of follicles, two or three in each foveola: hence the entire

number of follicles opening into each alveolus would be from 16 to 24.

SOLITARY GLANDS OF THE LARGE INTESTINE.

The solitary gland of the large intestine, seen by the naked eye, has the appearance of a small circular opening in the mucous membrane, bordered by an elevated rim. With the microscope, the elevated rim and sloping sides of the opening are seen to be composed of a reticular framework and alveoli

Fig. 7.



A solitary gland of the large intestine, magnified nineteen times. The alveoli of this portion of the membrane are deep and large, measuring $\frac{1}{173}$ of an inch by $\frac{1}{250}$, and the septa narrow, $\frac{1}{900}$. The alveoli within the crater are smaller and the septa thicker. In the floor there is a vascular network, and the openings of simple follicles.

similar to the rest of the mucous membrane, excepting that the alveoli are more angular and deeper, and the septa thinner. The alveoli are so deep that their floor is not perceptible; they are larger than those of the rest of the membrane, measuring $\frac{1}{175}$ by $\frac{1}{250}$ of an inch; and the septa, measuring $\frac{1}{900}$ of an inch in breadth, contains only a single capillary. The alveolar structure is continued to the bottom of the crater of the gland, where I thought I could perceive the apertures of several follicles.

ON THE DIGESTION OF AMYLACEOUS SUBSTANCES.

By M. Blondlot.

In a lengthened memoir under this title, divided into three parts, and published in the *Annales de Chémie et de Physique*, for Feb. 1855, the author advances some novel views.

In the *first* part, he considers the constitution of fecula—

and states that "whatever may be the species of vegetable which has produced it, the feculent seed is a small, full body, formed of concentric superposed layers; and these layers are formed of extremely small granules united in a membranous form." He then asks—

"But what is the matter which unites these granules? To reply to this question, I must first make one general remark; it is that as the grain of fecula is a veritable organ, that is a living particle, it must contain some portion of nitrogenous matter; for, as has been well said, the presence of nitrogenous principles is as indispensable to the manifestation of life in plants as in animals. Experiment likewise proves distinctly, that all feculent grains contain nitrogen. To ascertain this, it is sufficient to place in a small glass tube closed at one end, a few centigrammes of any kind of fecula and a small piece of caustic potassa; then put into the upper part of the tube with the proper precautions, a small piece of reddened litmus paper, above which place a little cotton wool to delay the passing off of the gas, and on heating the tube with a spirit lamp so as to destroy the organic matter, the ammoniacal vapours which rise will immediately restore the blue colour of the test paper.

"M. Jacquelain considers that the matter in question is albuminous, but several circumstances lead me to think that it is gelatinous. But as far as our present investigation is concerned, this difference of opinion is unimportant. There is another peculiarity to which I wish to call attention.

"Iodine is known to be the re-agent, by means of which we can best ascertain the presence of the smallest traces of fecula wherever they may be. Now, I am of opinion, that the property of assuming a blue colour does not belong to the amylaceous substance, properly so called, or granules; but rather to the almost imperceptible trace of nitrogenous matter which envelopes and unites them.

"For the granules to disappear and become soluble they must be metamorphosed into glucose or dextrine, which may be effected under various influences which cannot intervene in the digestive process. There is, however, one which is an exception, I mean the saccharification of the fecula produced by the influence of certain nitrogenous matters, such as the saliva, the pancreatic juice, some kinds of mucus, the serum of the blood, &c., experiment having shown that these matters which have no action upon the fecula when not hydrated, may, in certain cases, convert a certain quantity of starch paste into sugar and dextrine. I must, however, observe, that even under the most favorable circumstances, only a very small proportion of matter undergoes this transformation, and that for this purpose, a neutral or alkaline reaction is a *sine qua non*, in condition which the digestive tube seldom fulfils, as I am about to show."

In the *second* part, M. Blondlot examines the theory of the conversion of amylaceous matters into sugar during the process of digestion, and observes that, according to several distinguished physiologists, aliments should be arranged in three distinct classes, namely: 1st, Albuminous substances, whose digestion is effected by the gastric juice; 2d, Fatty matters, which are formed into an emulsion by the bile and the pancreatic juice; 3d, Amylaceous substances digested by the saliva, either with or without the aid of the pancreatic

juice; the result being the transformation of fecula into dextrine and sugar, similar to that produced by diastase.

To this last division M. Blondlot raises some objections. He says:—

"We are now about to examine this doctrine in the most favorable circumstances, namely, when the fecula to be digested appears under the form of paste.

"If, as we have proved, the transformation of paste by animal substances cannot be effected in the presence of an acid re-action, the contents of the stomach being always acid, the transformation of which we speak can only be produced before the entrance of the aliments into that viscera, or after they have left it. Now, the time employed in mastication and deglutition is quite insufficient to produce a result of any importance. It is evident, moreover, that in the generality of animals, the mouth and œsophagus are chiefly places of transit and not organs of deposit, in which matters may, by a more prolonged stay, become subject to chemical modifications.

"What I have said of the saliva applies also, in great measure, to the pancreatic juice, seeing that at the moment of leaving the stomach, the chyme always possesses some acidity, which it generally loses by degrees as it passes through the intestine; so that supposing that this acidity disappears towards the end of the colon, which is far from being always the case, the pancreatic juice has only a small portion of matter to act upon, and that if there were then an accidental production of dextrine and glucose, it could only be in insignificant proportions.

"Therefore, admitting the most favorable state of the case, namely, the ingestion of the amylaceous matter in the state of fluid paste, the theory of saccharification will not bear a serious examination, there is greater reason to believe that it would be the same if we applied it to raw fecula, that is to say, in the state in which it is taken by all the zoological species.

"Here my task is easy; for I have only to quote the avowals of those who have the highest opinion of the power of the pretended agents. 'Raw fecula,' says M. Mialhe, 'is only very slowly and very imperfectly rendered soluble by the saliva. At the first moment of contact the action is almost imperceptible; but when starch is digested in fresh saliva for two or three days, care being taken to aid the re-action by a temperature raised to 45° or 50° C. (113° to 122° F.), the transformation of the fecula becomes evident.' Thus the saliva has positively no action on crude fecula for the first day or two of contact, namely, for a space of time far exceeding, not only the duration of the mastication, but even the entire time necessary for digestion. As for what occurs after that time at a temperature which exceeds that of the body, as the result, whatever it may be, can have no physiological application, we have no need to examine into it.

"Moreover, these negative results have been proved by M. Lassaigne's experiments, as well as my own, not only on the saliva, but likewise on the pancreatic juice. We have each ascertained that below 40° C. (104° F.) neither of these liquids caused the solution of fecula and its conversion into sugar.

"From the above it appears that no substance exists in the digestive tube capable of saccharifying fecula, and that it is necessary to seek elsewhere than in the saliva and pancreatic juice for the agent which produces the disaggregation."

In the *third* part, our author is desirous of proving that all

amylaceous matters are digested in the stomach by the action of the gastric juice, like other aliments. This portion we extract entire.

"Whether in the crude or hydrated state, fecula is more or less perfectly digested in passing through the digestive tube, at least, among warm-blooded animals. We can convince ourselves of this fact by examining the excrements of different animals fed upon simple or compound feculent substances, and seeking in them for the grains of starch remaining intact, and capable of assuming a blue colour with iodine. Now the result of this examination is, generally, that none are found, or, if any, in such small number that they appear to be there accidentally. Whence we must conclude that fecula, eaten even in the raw state, undergoes, during its passage through the gastro-intestinal tube, some modification which permits of its absoption. Let us see in what this modification consists.

"Feculent grains, of whatever description, as I mentioned before, are composed of concentric membranes, which themselves are formed of an infinite number of granules united by traces of nitrogenous matter. On the other hand, I have shown in my 'Treatise on Digestion,' that the gastric juice, which is entirely without action on non-nitrogenous principles, and consequently on the granules, properly so called, attacks and softens most of the nitrogenous principles of organic origin, under the influence of a suitable temperature. Accordingly it was only natural to think that, when the grains of fecula are subjected, in the stomach, to the action of the gastric juice, this fluid attacking the nitrogenous covering which unites the granules, these are disaggregated the more rapidly because the peristaltic action of the stomach concurs towards the same aim. Moreover, if, as I have said, the property of assuming a blue colour with iodine does not belong to the granules themselves, but to a thin covering in which they are enveloped, it is evident that these granules would lose the power of becoming blue the moment that the above-mentioned envelope has been removed or even modified by the gastric juice. This is indicated by the theory established *à priori;* let us now see what direct experiment will show us.

"For this purpose it is sufficient to examine with iodine and a microscope what happens to the fecula in traversing the different sections of the digestive tube. Having therefore fed various animals, fowls, pigeons, rabbits, goats, dogs, &c., either with pure fecula and grain in the raw state, bread or other analogous substances, I have proved the following facts:

"The acid matter of the stomach, suitably diluted with water, exhibited, in the microscope, one portion of the granules of the fecula, still intact and capable of assuming a blue coloration with iodine; other granules, likewise colorable with iodine, were swelled, deformed, exfoliated as if they had been subjected to the action of boiling water. Among these partially destroyed grains were seen likewise a great many amylaceous granules, precisely similar to those which had been separated in a Papin's digester, with this difference, that, whereas the latter became blue, the granules disaggregated by the gastric juice, were simply rendered yellow by iodine.

"In the upper portion of the small intestine we no longer found entire or exfoliated granules assuming a blue colour; but, on the contrary, the granules assuming a yellow colour were found by myriads. As we advanced toward the large intestines, the number of these granules gradually diminished, so that at the end of the digestive tube only a few were found which appeared to have escaped absorption.

"Moreover, MM. Sandras and Bouchardat themselves had already proved the existence of these granules, which they designated under the name of *globulines*, but to which they appear to assign no importance, because they could not play any part in their theory of saccharification.

"The preceding facts show, in the most evident manner, the explanations above given, relative to the disaggregation of fecula by the gastric juice, although the stomach may be the part of the digestive tube which presents the fewest granules which are disaggregated and capable of assuming a yellow colour with iodine. The same thing, therefore, happens to fecula which occurs to all other aliments, which are separated into portions in the course of digestion, and pass into the intestine in proportion as they have undergone in the stomach a sufficient attenuation.

"There is yet one other remark which we must not omit. It is that the nitrogenous matter uniting the granules of which fecula is formed, has this in common with many alimentary matters, especially with the substance of the bones, that, to be attacked by the gastric juice, it is necessary that the latter should possess all its power. Now we know that, for some reason hitherto unknown, this fluid loses a portion of its specific virtue when removed from the stomach. Moreover, we know that its powers are only developed at a temperature of 40° C. (104° F.) These two peculiarities explain why it is impossible to disaggregate fecula in what are called artificial digestions, and likewise while fecula passes unaltered through the digestive tube of cold-blooded animals, as I have proved by numerous experiments.

"To sum up, from the preceding facts and considerations, it results that, according to the above-mentioned principle, the digestion of fecula is affected in the stomach of warm-blooded animals in the same manner as that of other aliments, and consists in the disaggregation of the elementary granules constituting it: so that the latter, whose dimensions do not exceed those of the chymous molecules furnished either by fatty matters or proteïc substances, are found to be in a state of division sufficient to penetrate with them into the organism by means of the chyliferous system."

(*Condensed from the Chemist.*)

COMPARATIVE ANALYSIS OF THE BLOOD OF THE VENA PORTA AND HEPATIC VEINS, &c.

By M. C. G. Lehmann.

The results of the following analyses were obtained with dogs and horses submitted to various diets (care was always taken to place ligatures in a suitable manner on the vessels, in order to obtain without admixture the bloods to be examined chemically).

I shall not dwell upon the analytical processes which I followed; these are described in my '*Lehrbuch der Physiologische Chemie*' (1850, Leipzig). I shall only say that all the quantitative determinations of sugar were obtained by means of the

fermentation method, except in a case in which I employed, as a check, the method of estimation by the reduction of a salt of copper. I shall likewise pass over certain details concerning the composition of the blood of the vena porta and that of the hepatic veins, which are given in the first memoir which I published on this subject. I shall dwell only on the points which may serve for elucidating the formation of sugar in the liver.

1. *Sugar.*—The blood of the vena porta never contains the least traces of sugar in dogs which are fasting and in dogs fed with meat. The same animals fed with vegetable substances (cooked potatoes) evidently present sugar in the blood of the vena porta, but in so small a quantity that it cannot be estimated.

In horses fed with rye bran, chopped straw and hay, the blood of the vena porta contains very small proportions of saccharine matter. I found in one case 0·055 gr. in 100 of the dry alcoholic residue of the blood. In another case, the serum of the vena porta of a horse contained 0·0052 gr. per cent. of sugar.

The blood of the hepatic veins always contains a large proportion of sugar. In three dogs fed with meat, I found the following ciphers calculated on the dry alcoholic residue of the blood: 0·814 per cent., 0·799 per cent., and 0·946 per cent. In three other dogs, which had been kept fasting for two days, I found in the blood of the hepatic veins the following quantities of sugar: 0·764 per cent., 0·618 per cent., and 0·814 per cent. In two other dogs fed with cooked potatoes, the blood of the hepatic veins contained 0·981 per cent. of sugar in one, and 0·854 in the other.

In two horses submitted to a vegetable diet (bran, straw, and hay), the blood of the hepatic veins contained in one case, 0·635 gr. per cent. of sugar, and, in the other, 0·893 per cent.

The results of the foregoing analyses are given in the Table in the following page.

It will suffice to look at the comparative quantities of sugar contained in the blood of the vena porta which enters into the liver and that of the hepatic veins which issue from it, to see that the opinion as to the formation of sugar, in the liver, which was first enunciated by M. C. Bernard, is placed beyond doubt.

2. *Fibrine, albumen.*—The blood of the vena porta in horses and dogs contains fibrine which does not differ perceptibly, in its character and quantity, from the fibrine of the other veins. Whatever may be the nature of the diet, the blood of

the vena porta of dogs contains on the average more fibrine than that of horses.

Animals.	Diet.	Quantity of Sugar.	
		In the blood of the vena porta, entering into the liver.	In the blood of the hepatic veins on issuing from the liver.
Dog	Fasting for two days	—	0·764 gr. per cent.
,,	,,	—	0·638 ,,
,,	,,	—	0·804 ,,
,,	Fed with meat	—	0·814 ,,
,,	,,	—	0·799 ,,
,,	,,	—	0·946 ,,
,,	Fed with cooked potatoes	Inappreciable traces	0·981 ,,
,,	,,	,,	0·854 ,,
Horse	Fed with bran, hay, and straw	0·055 gr. per cent.	0·893 ,,
,,	,,	0·0052 ,,	0·635 ,,

The blood of the hepatic veins, carefully collected and without any admixture, does not contain fibrine. The few flocks which are sometimes obtained by beating, in horses, are almost entirely constituted of white globules, which are seen in very great abundance in the blood of the hepatic veins compared with the blood of the vena porta. The blood of the hepatic veins in dogs acts in the same manner with regard to fibrine—that is to say, this matter disappears almost entirely in the liver.

Very careful comparative analyses between the blood of the vena porta and that of the hepatic veins have proved to me, that a remarkable quantity of albumen disappears also in the liver, and the quantity disappearing is relatively greater in dogs than in horses.

On this remarkable fact, that fibrine disappears in the liver, I have established my opinion, already given in my first Memoir, that the sugar which is formed in the liver is produced at the expense of the fibrine.

3. *Fat and blood globules.*—The blood of the vena porta always contains much more fat than the blood of the hepatic veins. The serum of the blood of the vena porta in dogs fed with meat is generally richer in fat than that of horses. Nevertheless, we do not find more fat in the serum of the hepatic veins in dogs than in horses.

In horses, the globules of the blood of the vena porta contain more water and iron; on the contrary, they contain less globuline, extractive matters, and salts, than those of the

hepatic veins. In dogs, as in horses, the blood of the hepatic veins is much richer in blood-globules and extractive matters than that of the vena porta.

I have remarked, in both dogs and horses, that a considerable quantity of iron always disappears from the blood in traversing the liver. But the differences in the quantity of iron which is found in the blood which enters the liver and in that which issues from it, are greater in dogs than in horses. It results from this that a portion of the hæmatine of the blood disappears in the liver, and contributes probably to the formation of the colouring matter of the bile, which would also prove the complete analogy of bilifulvine with hæmatoïdine, as one of my pupils has just shown.

COMPARATIVE ANALYSIS OF THE BLOOD OF DIFFERENT VEINS WITH ARTERIAL BLOOD.

All these comparisons were made with blood always taken from the same horse.

The blood which issues from the liver by the hepatic veins is always by far the most saccharine blood of the whole body. Afterwards, this blood is mixed with that of the vena cava in order to reascend to the heart. I can here only confirm what M. C. Bernard said long ago—namely, that the blood of the vena cava inferior is that which always contains the greatest quantity of sugar next to the hepatic veins. I have found in the solid residue of the blood of the vena cava in horses, 0·346 gr. per cent., 0·211 gr. per cent., and 0·492 per cent. of sugar.

When the blood has traversed the lungs and has become arterial, we generally find no sugar. I have found none in the arterial blood of horses which had eaten starch and oats. In dogs and rabbits, we can only find sugar in the arterial blood, when the venous blood contains more than 0·3 gr. per cent. of sugar. This is what happens in all the conditions which cause sugar to pass into the urine; for example, after the puncture as made by M. Bernard, after the injection of sugar in large quantities into the veins or into the stomach, or, finally, in rabbits which have eaten considerable quantities of beetroots or carrots. But, in all these circumstances, it is always the hepatic veins which contain the greatest quantity of sugar, next the vena cava, &c.

The blood of the small veins, such as the cephalic vein, the digital vein, and the vena abdominalis externa of horses, always contains less blood-globules, more serum, and, consequently, more water, than arterial blood. But the larger veins,

and principally the vena cava inferior, contain a blood which is as concentrated as arterial blood, or which is perhaps even still more concentrated. All my experiments seem to show that a remarkable quantity of blood globules disappears in the general capillary vessels. The observation that the density of the blood of the vena cava inferior resembles that of the arterial blood, or even exceeds it, does not depend only on the expulsion of the water by the urinary secretion, but principally on the effluence of the blood of the hepatic vein; it is this which the analyses of the blood of a horse which had not drunk anything for 24 hours before being killed have proved to me in a striking manner. The comparison of all these analyses seems to prove, at the same time, that in the liver two functions operate separately — namely, the formation of sugar and globules of the blood, and that of the bile, as M. Bernard foresaw and established a long time ago.

The blood of the smaller veins contains more fibrine than arterial blood, and than that of the vena cava and the jugular vein. In the vena cava, I found half as much fibrine as in arterial blood.

Arterial blood always contains more mineral salts than venous blood.—*Chemist.*

[In this, and a former extracted article by M. L. Figuier, p. 291, we have given the theories of the existence of sugar in the liver, first demonstrated by M. C. Bernard. That chemist regards its origin as being the *fibrine* of the blood, which he found to disappear in the liver, and he regards sugar as a secretion proper to that organ. M. Figuier, on the other hand, contends that its source is the *glucose*, or grape-sugar, ascertained by him to exist in the blood of all animals, and believed by him to be derived from the food partaken of by them, even if they have been fed for a very long time exclusively on animal matters; and he considers it not surprising that its accumulation should take place in the hepatic organ, the function of which is to depurate the blood. This inquiry is doubtless one of great interest, nor less so is the paper "On the Digestion of Amylaceous Substances," by M. Blondlot, given in the present number.]

THE VETERINARIAN, JULY 1, 1855.

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

OUR EXCHANGE LIST.

We feel assured that our readers will not be less gratified than ourselves in knowing that, besides having effected an exchange with many of the leading scientific journals of the day in this country, it has been our good fortune to secure, by the same means, most of the veterinary periodicals published by the foreign schools, *viz.*, that of Alfort, of Lyons, of Brussels, of Vienna, of Milan, of Stuttgart, of Berlin, of Turin, and of Toulouse. We also exchange with the *New York Journal of Medicine.*

In addition to this, it will be equally gratifying to our readers to be informed that Mr. John Gamgee, M.R.C.V.S., has very kindly offered to give a monthly abstract from the foreign journals of all that is novel and interesting: an offer we have not hesitated at once to accept, knowing as we do, not only his familiarity with these different languages, but also the avidity with which his mind seizes on everything that is conducive to the onward march of veterinary science. Moreover, his long residence on the Continent, and his acquaintance with many of the Professors of the different veterinary schools there, all conduce to render him a most apt expositor of the contents of these periodicals, far above what could be hoped to be derived from a mere literal translation of the articles. We entertain, not only no doubt, but have the liveliest assurance of the advantages that the profession must derive from this arrangement.

Surely, from such sources as these, much valuable information will be obtained, and thus our most sanguine expectations become fully realised. We have already said that the state of its literature may be accepted as an index of the

condition of a profession; and with the bright prospect that now is opened up before us, we see much good to the profession looming in the distance.

But should it only awaken a spirit of emulation, even this will be laudable, and from it would be produced beneficial results, for we confess that we should not like to be found "nowhere" in the race; and each contributor to science will feel it to be his duty to aid in the common cause. We must then be up and doing, for our Continental brethren are men of scientific attainments, and watch what we are about with an observant and scrutinising eye. They look to the English veterinary surgeon for that which is practically useful, and are ready to adopt it if founded upon scientific principles, but not otherwise. As far as we are concerned, our humble efforts shall be made to promote that which we believe will prove in every way conducive to the best interests of the veterinary profession, and which must contribute to its high standing among the collateral sciences. We are perfectly contented to labour for the general good, and are convinced we shall not lack either support or encouragement. We have found only those chary of communicating their ideas who have but a few to offer. Like "the horse-leech, they contiually cry, 'Give! give!'" while they themselves do nothing. Encouraged as we are by our friends, we anticipate to be able from time to time to present to our readers, both at home and abroad, such an amount of valuable matter that our journal will become distinguished for its usefulness. We have no misgivings, and feel no despondency on this head. Our long intercourse with the profession, and our knowledge of those who have gone forth to practise it, assure us that all required is a determination to act in concert, and this we think we see already manifesting itself. We make no fresh appeal. Already we are in possession of those promises which enable us to speak confidently, and we can trust to our friends for the full performance of them.

When, too, we reflect that we have our friends scattered, as it were, almost all over the civilized globe, and can freely—yea, boldly, if it were necessary—address them, we do not

for a single moment doubt of our ultimate success. As yet we are inclined to think that they have not done what they might—perhaps what they ought to—have done. Possibly because they have had no incentive: but the information which we now communicate to them will, we are convinced, prove effective. Our field, so far from being exhausted, has hardly yet been entered upon. Fruit in abundance will reward the industrious cultivator, and rich will be his solace in retirement after he has endured the heat and burden of the day. Then, too, when he has passed into the "sere and yellow leaf of autumn," even long before the silver cord has become loosened, or the grasshopper a burden, will rise up those, animated by the same love of science, from an acquaintance with its principles which have been early inculcated; and being urged onwards by the energy of youth, fresh sources will be opened up of information and of knowledge, by which the community at large cannot fail to be benefited, and then the science of veterinary medicine will take its proud standing where its usefulness has long since placed it.

"Ars veterinaria post medicinam secundum est."

"Inquirer" is informed that there is no law which prevents a practitioner calling himself a Veterinary Surgeon, but there is a law which prohibits him designating himself a member of the Royal College of Veterinary Surgeons, this being a corporate body. We therefore suggest that every member of that body should append to his name the letters M.R.C.V.S.

Anxiously do we wait for the time when *all* who have been educated for the profession shall be thus titled; nor do we despair of seeing this, although we had hoped that but one feeling would ere this have prevailed among the members of the profession on this subject, since their common interests demand it, and it is with a community as with a kingdom—divided against itself it cannot stand. There are some things that it is worth while to make a pecuniary sacrifice for, and

professional unity is doubtless among them, since, were we a united body, we might obtain advantages which by disunion we lose. Let us then, by mutual concession, secure that which is so desirable for the general weal, and thus present a phalanx which our enemies will attempt in vain to break through. In numbers we are sufficiently great for this purpose, let us be equally strong in determination and purpose.

More than rumour has reached us that another effort is about to be made in the Council to effect this, in every sense, desirable object. May it be crowned with complete success, and let it not be said, "We looked for peace and no good came; for a time of union and behold discord."

Difficulties may, perhaps, present themselves, but these can be easily surmounted, while the good that must accrue is so obvious as to need no comment. And, being as a body, actuated by one spirit, and impelled by one motive—and that the noblest and the best—the impulse will be as that of the mighty winds on the waters of the ocean, irresistible.

Let none be led aside by false or groundless fears of a temporary loss being sustained; other expedients may be resorted to to compensate this, even if it should arise. And, above all, let no party of obstructives be formed to prevent the realisation of this object; or the profession may be aroused from its apathy and oblige its representatives in Council to adopt this measure. It would be well to remember, that a concession made with grace is doubly estimated.

We have already said that there are some things worth making a sacrifice for, but we are of opinion that ultimately the College would be a gainer even in the amount of its yearly income; while its standing in society, and the weight it would possess, could not fail to give it the preponderance, and thus more than counterbalance any little inconvenience which for a time might, perhaps, be experienced by the institution.

But is there not yet another view which may be taken of the subject. What if *both* the Colleges included in the Charter were to adopt the same course of procedure—each examining its own pupils, and giving to them certificates of having been

educated at their respective schools, and leaving it to them to determine whether or no they would afterwards present themselves before the Board of Examiners of the Royal College of Veterinary Surgeons, which as yet possesses no privileges or immunities? This question demands serious thought; but we sincerely hope that the good judgment of the Council will preclude all necessity for extreme measures being resorted to, and thus secure oneness in the body. Fain would we breathe

> "The prayer that in no generous heart can cease,
> And hymn to heaven its own strain,—love and peace,
> Far better this than glory's dubious wreath,
> Or foul breath of triumphant enmities."

We beg to direct the attention of our readers to a series of questions on breeding, in our present number, by Mr. Varnell. We consider them full of importance, and as "in the multitude of counsellors there is wisdom," so we hope to obtain from many of our contributors such answers as shall enable us to give proof both of the interest and practical usefulness of this inquiry.

It is not our intention to publish the separate answers we may receive, but to arrange and analyse them, and then to communicate to our readers the general result; which we anticipate will be of such a character as fully to bear out our estimation of the inquiries, and, at the same time, render the record one of great value to the profession, and an authority for the breeder of animals.

ROYAL COLLEGE OF VETERINARY SURGEONS.

The following gentlemen having passed their examinations before the Board of Examiners appointed under the Royal Charter of Incorporation, for Scotland, have received their diplomas and been admitted Members of the College.

April 20th.

Thomas Michie, Melbourne, Australia.
Peter Cairncross, Dundee, Scotland.
Job Cooper, Wetwang, Driffield, Yorkshire.

May 19th.

Benjamin Fawcett, Newcastle-upon-Tyne, Northumberland.
John Dollar, Kilsyth, Stirlingshire, Scotland.
Lawrence Copeland, Garstang, Lancashire.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

This very useful society, which has from the first manifested a warm interest in the advancement of veterinary science, and effectually lent its powerful aid to promote its objects, has lately issued its half-yearly report, which is highly favorable, and of which we give the following abstract, sincerely wishing to the society continued and increased prosperity, since of its national importance none can doubt.

After some statistical details as to members, state of its funds, &c., the report goes on to observe that—

"The continued indisposition of Mr. Pusey, and the consequent suspension of his long and invaluable labours to the society as the Chairman of the Journal Committee, have rendered some temporary arrangements in that department necessary. The Council have accordingly requested Mr. Thompson to act as the Chairman, and Mr. Wren Hoskyns and Mr. Dyke Acland as Vice-Chairmen, of the Journal Committee. The new number is now in progress, and will be published on the 1st of July. Prizes have been awarded to reports on the Farming of Buckinghamshire and Warwickshire, and also to essays on the Causes of Fertility and Barrenness in Soils, and Lameness in Sheep and Lambs: a paper in the latter class has been disqualified on account of

its delivery not having been made by the 1st of March; and the Prize in the class of Mildew in Wheat withheld in consequence of the want of sufficient merit in the competing essays; while adjudications have still to be reported in the five remaining classes. The following subjects for the essays of next year have already been adopted:

"1. Farming of Bedfordshire.

"2. On the production of turnips possessing good keeping qualities.

"3. Spring-feed crops: with special reference to early growth.

"4. The different mechanical modes of deepening the staple soil, in order to give it the full benefit of atmospheric influence.

"5. The chemical results superinduced in newly-deepened soil by atmospheric action.

"6. The construction and maintenance of farm roads, with special reference to clay lands.

"7. The roots of the wheat plant: the history of their growth and development.

"8. Essay and plans for the construction of labourers' cottages: with special reference to domestic convenience.

"9. Account of the different modes of bringing moorland into cultivation, based on practical experience; and specifying the methods pursued, the expense incurred, and the results as far as ascertained, regard being had to the subsoil, locality, and elevation.

"Two distinct and important investigations are in progress by the Consulting Chemist of the Society, namely: 1. On the chemical effects of the atmosphere on the soil and vegetation; 2. On the value to the farmer of different substances sold to him for manuring purposes. Professor Way has already, in the course of this session, delivered before the members two lectures: the first, On the relation between atmosphere and agriculture; and the second, On the chemical principles involved in the production of butter; for which he has received the cordial thanks of the Council. He has also consented to deliver a lecture, on the 13th of June, On the use of fish as manure; and Professor Simonds, as the Veterinary Inspector of the Society, has expressed his willingness to elucidate before the members, at a weekly council in the course of next month, the physiological conditions affecting the quantity and quality of milk secreted by the cow under different circumstances of feeding and management.

"The Governors of the Royal Veterinary College have made a most satisfactory report to the Council of the successful manner in which the special objects of the Society in reference to domesticated animals have been carried out in that establishment under the inspection of Professor Simonds."

It then proceeds to comment on the arrangements made for the forthcoming meeting at Carlisle, and similar meetings to be held in subsequent years at other places, and states that thus—

"After a circuit of twenty years, the Society will return to that part of the kingdom in which, at the city of Oxford, under the most favorable circumstances, it held its first meeting.

"The Council have viewed with much interest the progress of measures adopted by the government of France to stimulate and improve its agriculture. At the request of the French and English Foreign Departments, the Council have taken every means to make known in this country the inducements held out and the facilities afforded to the exhibitors of the United Kingdom, at the Agricultural Meeting to be held next month in Paris; and they have decided that six of their members shall form a deputation to be present on that occasion. The Council trust that this international gathering will be attended with the most favorable results to the agriculture as well as to the cordial understanding now so happily subsisting between the two nations.

"The Council have continued to be favoured by the Earl of Clarendon with copies of successive despatches received at the Foreign Office from Her Majesty's Ministers and Consuls abroad, reporting the result of their inquiries and researches connected with the occurrence of guano of the nitrates in tropical districts. Some of these communications have been of an important character, and have referred to discoveries of extensive deposits of those valuable manures, as well as to the occurrence of an unlimited supply of native carbonate of soda in South America. His Lordship has conveyed to the Council an assurance that whatever facilities or privileges are granted to other countries by the governments within whose territories these newly-discovered deposits occur, will be claimed by Her Majesty's government on behalf of the agricultural and commercial communities of the United Kingdom.

"By order of the Council,

"James Hudson, Secretary."

MISCELLANEA.

BRITISH INDUSTRIES.

By Professor Hunt.

The position which any nation occupies in the scale of civilisation is exactly determinable by the industry of its people. The constitution of the human mind—the constitution of the human body—is of that character to render activity necessary for health, and to make repose destructive to every energy. The mutual dependence of mind and body renders it essential that an equal burthen should be thrown upon each. There is a beautiful balance between the intellectual and physical forces, which if disturbed leads to irregularities, which are diseases. The mind we call *immaterial*, the body is essentially material; yet this material mass is quickened into motion by the influences of certain physical forces which hold a position—not well defined—between gross matter, and the "Spark of Life." Light, heat, electricity, and other forces which the eye of the philosopher sees, but which he has not yet grasped, are necessary agents to the *existence* of the organized mass we call man, but they are not the cause of that existence. An unknown *energy*—far beyond the reach of the most giant mind—which we call Life—is hidden behind the veil, and the physical agencies, like the lightnings around the sacred mount, hide the Divinity which crowns it. Yet are this gross organic mass, these physical forces, and the ethereal life, bound together in a wonderful system. To maintain the health of life, even in its highest developments of intellect, a change of form in some portion of the material constitution is necessary. The exercise of the mind in the development of a single thought compels a portion of human muscle to change its form—in common language to be destroyed; it is in fact resolved from its compound condition into its more simple elements. Every thought, therefore, according to its energy—its intensity—is dependent upon a chemical change. Thus a mind of excessive energy, with an intensification of power, wears out the body faster than the material elements can be supplied.

On the other hand, if the material elements required to restore the waste in our bodies be supplied in too great abundance, the machinery is clogged, the mind becomes

inactive, the power of appropriation and assimilation is reduced, and man becomes a sensual creation merely. Bodily efforts, the exertion of muscular force, the development of mechanical power, calling upon the system for an active restoration of the employed material, leaves but little for the mind to work upon, and consequently intellectual power and great bodily exertion are not compatible.

Nature performs all her works by a system of *constants*. The change of a constant quantity of matter is required to produce the development of a constant quantity of the spiritual energy. The development of an equivalent of mind requires the *consumption* of an equivalent of the material elements by which it is enchained. * * * *

Civilisation consists in producing the highest amount of vitality, the largest quantity of producing power, and the most perfect development of mind. A people—the most industrious will necessarily be the most virtuous and intellectual. It may be said that our over-laboured population do not answer to those conditions. Unfortunately, it is too true they do not, and it is because they are over-laboured. A great law is broken, and a great curse follows. Every sin carries its own punishment.

In a given time an overwrought population produces less than the same number of men and women who have laboured fairly; the condition of the first is wreck of mind and of body, that of the second is the maintenance of health and capabilities for progress. Industry, therefore, is giving mind and body an equal and a fair amount of labour, and civilisation depends upon the proper fulfilment of the conditions of human existence.

Man was placed on this planet with powers to "replenish the earth and subdue it, and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth." In chemical constitution the vegetable and the animal tribes differ but little from man; the vegetable has *life*, and is by its influence developed, the animal has life of a higher order, and under its exciting power pursues a more enlarged round of existence. Man, however, has more than this, and in the dignified possession of a soul, a world-embracing, a world-searching intelligence, he is enabled to exert his dominion over all things.

A beast may possess a remarkable power of instinct; we see the bird construct a wonderful nest, and the beaver build a remarkable cell, but their powers over nature are limited. Neither the bird nor the beaver ever constructed *a tool*. Man, on the contrary, is enabled to avail himself, not merely

of the *raw material* which nature gives him, but, observing the laws upon which nature herself works, detecting the mechanical powers by which the universe is regulated, and the physical powers unceasingly at work in creation, he compels them, as slaves, to do his bidding. Man manufactures levers and wedges, he makes machines, which no other animal ever did.

Man's supremacy entirely depends upon his so nicely adjusting the powers of mind and body, that he can make them equally available to the ends he aims at. The mental powers are exerted to discover the constitution of the earth, the creations on its surface, and the physical forces by which all these are regulated. This is science. Without science there can be no advance. Truths become known to us only through the researches of science; therefore the imperative necessity of so training the mind that it can search, and by seeking, find. Whatever may be the form of science, its ends are no more than this.

Having discovered a truth, we seek to apply it, and every advance of any human industry is but an application of a known truth.—*Art Journal.*

SECRETION OF MILK BY A COLT ELEVEN DAYS OLD.

The fact of infants now and then presenting the phenomena of a secretion of milk from the mammæ has been pretty often observed; and M. Billard, in his work, 'On Diseases of Children,' mentions this strange glandular activity. We perceive that lately in Belgium, according to the 'Journal de Médecine Vétérinaire,' M. Dayot saw a colt, eleven days old, which could be milked like a cow; but the flow of milk was stronger when the little animal drew milk from the mother: fluid of the same kind then flowed in abundance from the colt's own teats, each time the sucking aspiration was made.

ON ANTIDOTES TO POISONING BY COPPER.

Dr. Schrader, of Gottingen, having undertaken an experimental investigation into this subject, arrives at the following conclusions:—

1. Hydrated magnesia is just as little of an antidote as the alkaline carbonates, the hydrated oxide of copper that is

formed being gradually dissolved by the stomachal and intestinal acids. Magnesia may, however, retard the effects of the poison, although it cannot entirely counteract them.

2. The hydrated sulphuret of iron decomposes the salts of copper immediately, and the sulphuret of copper is wellnigh insoluble in the juices of the alimentary canal. How far the sulphuret of iron may act disadvantageously, by liberating sulphuretted hydrogen gas, further experience is required to show.

3. The reductive power of sugar takes place, at the temperature of our bodies, far too slowly to be available in acute copper poisoning. It may be useful, when taken abundantly in water, to excite or favour vomiting.

4. Of all pharmaceutical substances, the ferrocyanide of potass is the best. Large quantities may be taken without material disadvantage to the economy; the ferrocyanide of copper which is immediately produced, being very insoluble.

5. Milk and white of egg neutralize poisonous salts of copper, and have the advantage of being easily obtained. Care should be taken to evacuate as rapidly as possible the albuminates and caseats of copper thus produced.—*Buchner's Repertorium*, 1855, No. 2.

EXTRACT FROM LORD ASHBURTON'S SPEECH TO THE SCHOOL-MASTERS OF HANTS AND WILTS.

"I WOULD take you amid the high-priced stock of our farms, and show you that the medical attendance to which their care is too often intrusted, is as inferior to the instructed Veterinary practitioner, as was the surgeon-barber of Queen Elizabeth's time to Sir Astley Cooper or Sir Benj. Brodie of the present day."

April 23, 1855.

THE

VETERINARIAN.

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Communications and Cases.

ON THE ADMINISTRATION OF ARSENIC TO ANIMALS, AND TO THE HORSE IN PARTICULAR.

By William Camps, M.D.

In two late numbers of *The Veterinarian*, there have appeared, from different sources, articles on the administration of Arsenic or Arsenious Acid to Horses. In the number for March, of the present year, the communication on this subject bears the title "Cases of Poisoning with Arsenious Acid," by Mr. J. C. Truckle, of Salisbury; in that for June, the communication bears the title, "On Arsenious Acid," by Mr. H. Lepper, of Aylesbury. It is unnecessary, on the present occasion, to repeat what is therein stated, with reference to the results observed as following the administration of that powerful drug to these animals; but such of the readers of this Journal, as may be interested in this subject, will, we are persuaded, not consider it too much trouble to refer back to those numbers respectively. As bearing on the same subject, it may not be uninteresting to draw the attention of those whom it may concern, to a very remarkable communication relating to the administration of Arsenic to man and animals, which has somewhat lately appeared in a French scientific journal devoted to medical chemistry, pharmacy, and toxicology, the *Journal de Chemie Médicale*, edited, we believe, by the late celebrated chemist and toxicologist, M. Orfila; and from which the present contribution to the *Veterinarian* is taken, restricted, however, to that portion which relates to the administration of this drug to horses and to horned cattle. After directing attention to the alledged practice of Arsenic-eating, which it is affirmed is

pretty generally spread in the mountains of Austria, of Styria, and especially at Salzburg, in the Tyrol, among the chamois-hunters, the author, Dr. Tschudi remarks, that amongst animals, horses are those to which arsenic is most commonly given. The following is the process adopted :—Each groom has his own mode of giving it, but adheres rigorously to his method when once commenced; yet all agree on this one point, that the arsenic should be given to the horses only at the new moon. Some give it every day at this time, in doses of three or four grains. Others administer it during two days in succession, then omitting it during two days; increasing the dose on the following two days, and so on until the full of the moon. During the intervals, they administer to the horses an aloetic purge once a week. The grooms observe most scrupulously the rule to administer the arsenic to the horses only after having taken their food and drink. The vehicle in which they give the arsenic is a piece of plain bread. If the animal is in use whilst the drug is being administered, it is wrapped in a piece of linen, or it is scattered upon a piece of lard or bacon, which is also wrapped in linen, and fastened either to the bars of the manger or to the snaffle. It appears that a portion of the poisonous drug is eliminated with the excrement, for such fowls as eat of the grains of oats contained in the horse-dung of such as have been submitted to this arsenical treatment, have been observed to be killed by so doing. These grooms contend that arsenic is an infallible preservative against the colic, which horses are liable to that are fed upon rye, which grain, as is well-known, predisposes to that disorder.

The employment of arsenic in the case of horned cattle is less frequent; it is given only to oxen, and to calves designed to be fattened. In this case, too, the same lunar conditions are respected as were noticed above, and the arsenical powder is administered to the ox, in gruel mixed with chopped straw, and which has been infused in hot water. The effect is described as perfectly astonishing, as regards the increase in the size of the animal, although it does not gain proportionally in weight. On this account butchers will seldom buy, at sight, cattle fattened in this manner, for the real weight is considerably less than the apparent weight of the animal. It is scarcely necessary to remark, that this arsenical process is only put in force for animals destined for fattening, and never for those intended for the plough, or for draft of any kind. In Styria, as in Austria, there are cattle-breeders, who, on account of adopting this practice, are known by the name of *Hidribauer* or *Arsenic-men*.

Arsenic is also frequently given in small doses to pigs, especially at the commencement of their fattening; when a daily dose of sulphuret of antimony is administered. It has been noticed that the *purified* sulphuret of antimony (*antimonii sulphuretum nigrum lævigatum*), such as is prepared in the laboratories, produces no effect when given, whilst the sulphuret (*unpurified?*) sold by the druggists, produces the expected result. This fact may possibly depend on the circumstance, that the *unpurified* sulphuret of antimony, usually contains no inconsiderable quantity of the sulphuret of arsenic, whereas, by purification, this latter ingredient is removed.

At Vienna, the grooms and coachmen mix a good pinch of white arsenic with oatmeal, and wrap a piece the size of a pea in linen, and affix it to the bridle, when the horse is harnessed; when the saliva from the animal dissolves the drug gradually.

The glossy, smooth, and freshened aspect of valuable horses; and especially, the white foaming at the mouth, is caused very commonly by arsenic, which, as is well known, increases the salivary secretion. The drivers, in mountainous countries, very frequently introduce a dose of arsenic into the forage which they give to their horses, previously to undertaking a laborious ascent. The jockeys, too, frequently make use of small shot for short-winded animals that they intend taking to the market. It appears that the constant effect of this practice, an effect which lasts some days, is due entirely to the arsenic known to be contained in the shot. It is to be observed, that the exhibition of arsenic to animals is subjected to the same condition as the *arsenico-players*, or *arsenic-eaters* practise themselves; and it would not be uninteresting to know, if the beneficial effects of small doses of this poison, observed in the case of animals, has led the peasants in these countries to make the same experiments upon themselves; or *vice versâ*, if this practice of administering arsenic to animals, has been the consequence of observing its effects when administered to the human subject; and it would be further desirable to ascertain beyond doubt, whether intelligent, scientific men residing in these parts, where the so-called arsenic-eaters dwell, can confirm or deny these statements, advanced in the article from which these particulars are quoted.

We make the present communication—bearing as it does upon a most interesting, as well as upon a most important subject—exactly as it has come before our notice, and without in the least degree pledging ourselves to the accuracy of the

facts stated therein; but, at any rate, in many points of view the subject of the administration of so powerful a drug as arsenic to brute animals, and especially to that valuable one, the horse—to say nothing in this place of its administration to his master—man—is a subject well deserving the most careful and scientific investigation, as one of great practical interest to all concerned in the economy of the horse.

52, Park Street, Grosvenor Square;
June 19, 1855.

ON THE SECRETION OF MILK IN FOALS.

In our last number we recorded an instance of the mammary glands of a foal acting freely, especially when the little animal was withdrawing milk from its mother.

For the following communication we are obliged to Professor Spooner, who received it some time since:

Brandon, Suffolk; *June* 10, 1852.

Sir,—Rather a remarkable circumstance being observed in the case of a young foal in this neighbourhood, the owner has requested me to write you the particulars, partly as affording you, perhaps, information of a fact seldom occurring, and also for the sake of hearing your opinion in reference to the same.

The foal in question was observed, before it was a fortnight old, to be full in the bag, precisely like a full-aged mare; and the milk actually dropped from it. It did so yesterday when I saw it. Perhaps you will say whether this freak of nature is prejudicial to the healthiness of the foal; and whether such an occurrence has come under your notice before.

I remain, Sir,
Yours respectfully,
John Cock.

[Cases of this curious occurrence are registered in the scientific annals of the last century, but it has only attracted particular attention of late years. In Rainard's well-known treatise on the parturition of domesticated animals are some observations in point, which we translate.

"Lecoq has seen two fillies foaled with the mammæ larger than usual; the teats were also more developed. Having

tried to compress them, he caused milk to flow, and the half of a small glassful was obtained on milking each of them. This milk was examined six hours afterwards, and it appeared of good quality; it was white, had a sweet taste, analogous to that of the mare. This secretion ceased on the third day; the fillies showed no signs of disturbance in their health.

"M. Mazure, who was the first to observe this phenomenon, found the mammæ in a filly foal of the size of two fists. They were hard, hot, and painful; the skin tense and shining; the teats prominent. The milk extracted appeared to the sight and taste identical with that of the mother. The left gland was larger and hotter than the other, and furnished more milk. This engorgement of the glands interfered with the movements of the limbs. This condition of things, which was perceived two or three hours after parturition, was overcome by emollient lotions, repeated five or six times daily, and by frictions with a sedative ointment. But all did not go on so satisfactorily as in Lecoq's cases; as this secretion of milk was associated, in Mazure's case, with inflammation of the mammæ, ending in suppuration. A superficial abscess formed in the left mamma; it was opened, and about a glass and a half of a yellowish-white curdled liquid, like bad milk, was obtained. The cellular tissue which surrounded the mamma was destroyed; the gland separated from the skin became also detached from the abdominal walls, by destruction of its vessels, and it was therefore floating in a mass of puss. It was extracted on enlarging the external orifice, which had been formed for the exit of the pus. Fifteen days afterwards the skin was again united, and M. Mazure says, that, to his astonishment, milk still flowed from the teat. The supposed milk was no doubt nothing else than the pus secreted by the internal surface of the fibrous capsule, or of the skin which had not yet completely cicatrized."

A case precisely similar to the last one has been placed upon record by Mr. M. F. Wagstaffe; the subject was an infant twenty-five days old, both of whose breasts secreted milk, and subsequently became the seat of acute abscesses. (Birket's 'Diseases of the Breast,' 1850, pp. 12-14.)

In the *Comtes Rendus* of the French Academy of Sciences (vol. 37, 1853, p. 609), are the conclusions arrived at in an able memoir by M. Natalis Guillot, who founded it upon observations of secretions of milk from the mammary glands of thirty-nine male and thirty-four female infants. He has demonstrated that the phenomenon usually manifests itself from the seventh to the twelfth day after birth, and continues several days, the mammary glands being in the meanwhile

markedly tumefied. The milk is white, neutral, or of alkaline reaction when fresh, but becomes acid on exposure to the air. It resembles the milk of the adult female, *a*, in separation into cream and whey; *b*, in chemical constitution; *c*, in microscopic characters. It is, in point of fact, true milk; the cause and mode of its production is an interesting physiological theme, upon which we shall have a few considerations to submit to the thoughtful, so soon as they shall have been somewhat more matured in our own storehouse.]

CASE OF IDIOPATHIC TETANUS.

By R. Metherell, M.R.C.V.S., Spalding.

To the Editor of 'The Veterinarian.'

Gentlemen,—Having promised you a communication for a previous number of *The Veterinarian*, and not having performed my promise, it is incumbent on me to inform you, that illness alone has prevented me. I have now much pleasure in making an attempt, but have a few leisure moments only for that purpose.

I am no stranger to the high literary talents, the distinguished reputation, and the unwearied zeal of the present conductors of our Journal, and in such hands, it must, I feel assured, prove of great value to our profession, and become a medium through which the experience of others will be transmitted, and thus the body at large become materially benefited.

I herewith send you a brief sketch of a case of tetanus, and other cases shall follow for future numbers. With best wishes the success of *The Veterinarian*,

I am yours, &c.

The animal affected was a half-bred gelding, about eight years old, in good condition, and belonged to a fellmonger, whose premises seem to me to be (if my "olfactories" do not lead me wrong) always enveloped in a gaseous miasma, deleterious to the health of all living animals.

When called in, the usual symptoms presented themselves; namely, extreme rigidity of the muscles of the body, the ears and tail erect, protrusion of the membrana nictitans, the jaws closed within an inch, tremors, and power to move almost altogether lost.

The treatment I adopted proved successful; not that I know anything in it is new, or even important, or feel great confidence of equal success in future cases of a similar nature; yet from its attendant benefit I feel myself bound to record it.

It consisted in the exhibition of aperients, and blistering the forehead and poll, followed by the usual doses of belladonna; all the medicines, of course, being given in solution.

It is needless for me to enter further into the minutiæ of the treatment. It would only be filling your valuable pages with uninteresting and useless matter, as every member of the profession well knows that one undeviating course of treatment cannot be laid down, or indiscriminately adopted in all cases of the same class, with the same results.

I shall, however, be most happy to answer any question the *legalised section* of our profession may be desirous to ask, respecting this, or any other case published hereafter that may emanate from me.

DERMITIS PRODUCED BY THE PARASITES OF POULTRY.

By James Moon, M.R.C.V.S., Kingston.

Sir,—Some five or six years since I was consulted respecting two carriage-horses, that stood in a stable adjoining a hen-house, that were constantly rubbing themselves; in fact, they had to all appearance a confirmed disease of the skin. They were dressed, with the Lin. Picis Comp., several times, and afterwards with Ung. Hyd. Mit., but without any good effect. One night the coachman went into the stable with a light, when he found not only the horses covered, but the partitions of the stalls, with what he supposed to be small lice. This discovery at once unveiled the mystery; the hens were taken away, the place well fumigated with sulphur, and the horses washed, (which they had been once or twice before,) after which they very shortly recovered. No disease of the skin has been heard of in the same stable up to the present time. The other case happened last year to a brown cart mare. The irritation of the skin was so great that she would nearly rub the partition down between herself and the hens. She was dressed, I should say, at least a dozen times with Lin.

Picis Comp. cum Sulphur, then with a dilute solution of Acid. Sulph., but nothing did any good. The hens were removed, and her skin, also, soon became healthy. There were fourteen horses standing in the same stable, and it is singular that this mare was the only one affected. I could not in either of the cases detect any parasites on the animals in the daytime.

[A similar case to the above has been communicated to us by Mr. Henry Taylor, of Hull. "The horses stood in a stable, over which was a hen-roost, and from this not being properly floored, the dirt fell upon the animals' backs. The irritation of the skin was intense, and the horses were nearly denuded of hair from rubbing themselves." Mr. Taylor, some few weeks after the occurrence, forwarded to us some of the "droppings" from the roost, but we were unable to satisfy ourselves as to whether the cutaneous disease was caused by the parasites which affect or truly belong to poultry, or by the acari which frequently abound in dirty places, whether inhabited or not by these birds. From the fact observed by the coachman, in the case recorded by Mr. Moon, it would appear that the dirt acarus was the cause of the mischief. This point, however, is doubtful, and we hope to be able hereafter to throw some light upon it.]

SAVIN CAUSING THE DEATH OF A HORSE.

By Edwin Taylor, M.R.C.V.S., Bury St. Edmunds.

My dear Sirs,—Since you have undertaken the editorship of the *Veterinarian*, nothing has happened of interest sufficiently great to enable me to add my mite to its pages; but I have great pleasure now in doing so. One motive for my sending you this case is, that in all the veterinary works I have, and they go back for many years, I can find scarcely any similar cases recorded. I need not refer to those in the last number of your Journal. And, secondly, to prevent, if it be possible, the frequent practice among horsekeepers of giving the agent to their master's horses, which they do with the idea of getting them into condition.

The case is this. Last Thursday, June 14th, whilst driving through the parish of Bradfield, about five miles from Bury, I was stopped by Mr. Chickall, a farmer, who informed me that he had lost a horse very suddenly the night before. The history he gave me was as follows: the animal

was found in the evening to be in very great pain, for a short time only, not more than about twenty minutes or so; he then became, as he said, like a mad horse, jumping about everywhere, until at last he jumped off the ground with all four legs, and fell down quite dead. The owner at once said he believed that he had had something given to him, in short, that he had been poisoned, an opinion with which I concurred, and suggested that arsenic was the agent that might have caused his death.

He then wished me immediately to make an examination of the stomach, &c., upon cutting open which, the mucous coat I found was covered all over with an intensely red, inflammatory blush, and it was also much thickened, but quite whole, no ulceration having taken place. The cæcum and part of the colon were even more inflamed than the stomach. This viscus was about three parts full of a greenish-yellow fluid, not a particle of food being found in it. Upon emptying the contents into a pail, the odour was very powerful, and on the mucous coat of the stomach there was adherent a little greenish-yellow powder. Upon Mr. Chickall smelling the stomach and its contents, he said he thought it was savin, as he knew the smell thereof well, and also that he suspected one of his men had been in the habit of giving it to his horses for some time, for he had had as many as five or six different horses taken lately with violent abdominal pains, which, however, passed off again at the expiration of a short period, the horses having afterwards done their day's work tolerably well. One was thus attacked not longer than a fortnight ago; he was in great pain for a short time, threw himself down, and laid as if he were dead for five or ten minutes, then got up, and afterwards did his day's work. After this case, Mr. Chickall told the man that looked after the horses in that stable, that he would prosecute him if he could find out anything about the cause of his horses being thus taken, as the horses in the other stables were not similarly affected.

I took the stomach and its contents home for analysation, and obtained the assistance of Mr. Image, one of our surgeons here, who has had a great deal to do with cases of poisoning. We filtered the fluid from the stomach, and the residue was a powder, which, upon being compared with savin, and rubbed on the hand, emitted the same odour, and bore a great resemblance to this vegetable; although, from its having been exposed to the action of the stomach, it was much altered. The fluid was then tested for arsenic, but we could discover no metallic substance in it at all. We there-

fore came to the conclusion that it was a vegetable poison, and that most likely it was savin.

I have a case of fractured trachea, causing extensive emphysema all over the body, which I shall have much pleasure in sending you at some future time.

Believe me, yours truly, &c.

TÆNIA IN LAMBS.

By W. Cox, M.R.C.V.S., Ashbourne.

Dear Sirs,—The lambing season in this district has been rather an unfavorable one, and great losses have been sustained both among ewes and lambs, arising, no doubt, from two causes. First, the severity of the winter; secondly, improper or rather insufficient feeding. Sheep did well generally, until the severe weather commenced, after which good hay and turnips did not appear sufficient to keep them in condition, without the aid of corn. I very foolishly let my own ewes get out of condition the first month of the cold weather, for want of corn, although my land is of the very best quality, and they had plenty of good hay and some turnips. In consequence, thereof, I shared my neighbours' fate in the loss of lambs, arising from their being weakly, and the ewes short of milk; but I lost no sheep. Since the lambing season, what are left of the lambs are all doing well. This, however, is not the case generally, as a disease has appeared among the lambs of very many of my employers, and is destroying them by hundreds. The symptoms are, wasting in condition, loss of appetite, diarrhœa, or rather dysentery, and the sequela is generally death. The *post-mortem* examinations which I have made have proved to me that this disease is brought on by the existence and ravages of large quantities of tape-worms, which I have found inhabiting the intestines, more particularly the large ones, and which prey upon the aliment and mucous membrane of the bowels. The first cases I attended were in the latter end of May, at Mr. Crafer's, of Longford Park, a Norfolk gentleman; he had been administering several remedies for diarrhœa in lambs, which he had received out of Norfolk, but without any good resulting. Fourteen were already dead, and two more died soon after my arrival.

The *post-mortem* examination soon brought to light the enormous quantity of tape-worms already described.

The cause of these worms was not very apparent. Mr. Crafer has been at Longford many years, but his lambs have always been healthy heretofore, and his sheep have been kept as usual, during the last winter and spring, on hay and turnips.

In these, the first cases that I had attended, I came to the conclusion that the large quantities of turnips, first in a frozen, and afterwards in a decomposed state, had vitiated the ewes' milk, and produced these parasites in the lambs. But since then the lambs of other breeders have suffered, and are suffering from the same disease, some of whom have given them few turnips, or none. Pray then what is the cause? Is it produced in the lambs from the sheep being debilitated by the severe winter? or is it atmospherical? I have said I neglected my own sheep at first, but for nearly two months after I gave the ewes corn very freely, and my lambs are all doing well at present. I likewise know other instances where good corn was given to the sheep freely before lambing, with corresponding good keep, and the lambs are also doing well. Several farmers attribute the malady to the late cold spring; and one farmer says that it was one week in particular of cold and wet that produced it.

The treatment that suggests itself is—stop the cause, and the effect will cease—*i. e.*, wean the lambs and destroy the parasites. The following mixture has been found generally successful, if the lambs are not too much debilitated by the disease.

℞ Tinct. Assafœtidæ,
Ol. Terebinth., et
Ol. Lini, ãã partes equales.
Misce fiat mistura.

One table-spoonful to be given to a lamb of medium size every third day.

I have omitted to say that I have sent this for publication in *The Veterinarian*, if deemed by you sufficiently interesting. My next communication shall be on a new and generally successful mode of operating for hydrops uteri in our domestic animals, and which I have adopted now for several years past.

REPLY TO MR. LEPPER'S INQUIRIES RESPECTING THE POISONING OF SOME HORSES BY ARSENIC.

By J. C. Truckle, M.R.C.V.S.

I must apologise for not replying last month to the inquiries of Mr. Lepper, but matters of a private nature, as well as a pressure of business, prevented me. I am pleased to find that I have in any measure contributed to the interest of the profession; also, that I have excited a spirit of inquiry among some of my brethren. I beg leave to thank Mr. Lepper for his very pertinent inquiries, and nothing would afford me so much pleasure as to be able to answer them. But at present we are in the dark as to how the horses got the poison. The owner suspects a certain individual, and believes it to have been given by him maliciously. A reward has been offered, and a strict investigation is now being carried on. The owner's bailiff believes it will come to light before long. If so, I will, without fail, give you full particulars.

I am, Sirs,
Yours respectfully, &c.

ON PLEURO-PNEUMONIA IN CATTLE.

By C. Laycock, V.S., Selby, Yorkshire.

Gentlemen,—Having, for several years, received valuable information from your periodical, and contributed but little to its pages, I beg again to throw in my mite, if you think it worthy of your notice.

Living in a grazing district, and having had considerable experience in that fatal disease, pleuro-pneumonia, allow me to offer a few remarks on my mode of treatment generally, which perhaps may be of service to the junior members of the profession. It would be as well, perhaps, first to state the symptoms: the pulse is frequently from 70 to 80, and small, the artery having a double action; the respiration is from 30 to 40, and rather catching; the coat hard and dry; rumination ceased; frequent cough, with much pain, or rather a short grunt, particularly when the spine is pinched,

which appears to be very tender; the visible mucous membranes are injected, and on applying the ear to the chest, a particular wheezing sound is heard; the abdomen is often distended with gas, which is accompanied sometimes with diarrhœa, and the animal refuses all food.

Treatment.—If no appearance of diarrhœa be present, which rarely happens at the commencement, I first open the bowels by giving Mag. Sulph. et Pulv. Zingib., taking care not to purge the animal. I then apply a Tinct. Cantharides to both sides of the thorax, for two or three mornings successively, and after the bowels are opened, I give Ol. Tereb. once a day. If the patient refuse all food, I direct it to be drenched with linseed or oatmeal gruel, according to the state of the bowels, giving about two quarts three or four times a day, vary the diet, and offer it anything it will eat. I have had a great many live entirely upon gruel for three weeks, and afterwards recover. I cause the place to be well ventilated, and kept particularly clean in every respect, at the same time I endeavour to keep the animal warm and comfortable. Should the bowels become too much relaxed, I give Spt. Æth. Nit. cum Tinct. Opii. By adopting this mode of treatment, with care and attention, both of which are highly requisite, I have had a great many animals recover.

I am, Gentlemen,

Yours respectfully.

ON SPAYING OF HEIFERS.

By H. T. Copeman, V.S.

As the subject of spaying cows has attracted some little attention in this country, I have thought that the subjoined history of its effects would not be uninteresting. A part of this article has been sent by me to the New York *Spirit of the Times.*

A friend of mine, Mr. N. Wilcox, of Winfield, a few miles from this city, having determined to give the spaying of cows a full and fair trial, in June, 1849, I selected fifty from his dairy of about one hundred milking cows. The ages of the animals varied between four and twelve years. They were all in apparent good health, in fair condition, and had dropped their calves during the antecedent two months.

The operation was performed on the 7th and 8th of June. An aged cow, whose nervous system evidently received a

severe shock, died on the third day; and another (one of the best) became gradually more and more emaciated, and died on the forty-second day after the spaying. In several the side, around the incision, swelled considerably, and in a few the wounds suppurated freely. As the gross quantity of the milk given by the cows was all that had been determined previous to the spaying, the loss in any one instance could not be accurately ascertained, but the quantity became reduced nearly one half during the first two weeks succeeding the operation. Many of the cows were quite dry, while only a few yielded as much milk as formerly. By the 15th of July, ten did not give sufficient milk to pay for the drawing, and these were sold by Mr. Wilcox, to a neighbouring farmer.

The cows that dried up improved in condition, but still they made but middling beef, although the pasturage was very rich.

In November, Mr. Wilcox sold thirty more (all dry), to Mr. Brewster, of this city, who slaughtered them for sailors' beef.

Respecting the general management of these cows, every care was taken to retain them in milk, yet it was found impossible to do it profitably, except in ten of them. During the following summer, the best of these ten gave about two-thirds their usual quantity, and from the gradual diminution of this, nine out of the ten were doomed to the fate of their companions. As common sense would have indicated, the quality of the milk was in no way improved, as to its yield of cheese or butter. As you are aware, many cows continue in milk several years; and it is certainly very singular, that only one of the fifty continued to give milk two years after being spayed.

[We are indebted to Mr. Varnell for the above communication. The facts it contains are opposed to the experience of veterinary surgeons on the Continent, who are advocates for the operation being performed, on the ground that animals after it become increased in value, both for milking and feeding purposes.

Lately, a new method of operating through the walls of the vagina has been introduced by M. Pierre Charlier, of Rheims. While in Paris, we witnessed his performance of the operation, and it is our intention hereafter to return to the subject.]

CONTEMPORARY PROGRESS OF VETERINARY SCIENCE AND ART.

By John Gamgee, M.R.C.V.S.

The limited number of subjects treated of in this my first part of the Contemporary Progress of our Science and Art calls for some remarks. It is not a mere catalogue of disconnected facts which I have in view, in editing this department of the Journal, but the grouping of writings on special subjects to clear up doctrinal difficulties, and thereby to establish rules for guidance in the practical study and treatment of disease. It is the example of the bee, rather than that of the ant, which I strive to follow. A rich store of material is on hand for digest in future numbers. As intimated in the last month's introduction, time alone can enable my readers to judge correctly the scientific and practical merits of this project.

"Spina Ventosa of the Lower Jaw in Cattle."—Anacker states this disease begins by a small oblong swelling in the vicinity of the second or third molar; it appears as an exostosis. This spreads over the whole maxilla, and induces such an amount of mechanical impediment, and consequent pain, that the patients lose their appetite and dwindle almost to nothing. Sometimes a fistula opens into the mouth. Anacker is at a loss to explain why steers should be affected in preference to bulls, which, he says, is the case. A blister of cantharides in the early stages may cause it to subside, but it always returns. Surgical operations or caustics are useless. The animals must be destroyed before the disease has deteriorated their flesh (*'Mag. für die ges. Thierheil.,'* Jan., 1855).

(From cases I have observed in the North of England, and on the Continent, it would appear that the upper jaw is also frequently affected, the antrum being involved. Such tumours consist in a deposit of fibro-plastic, fatty, and granular matter in the osseous canals, leading to destruction of the bone, and development of scanty bony plates and spicula, which spread in all directions, and form an out-growing network to enclose the soft deposit. In some parts the bone is hypertrophied. A quantity of cheesy-looking matter of a yellow colour, probably transformed pus, is found in various parts. The whole is bound down by condensed cellular tissue and periosteum, atrophied muscle, and thickened skin, which rarely ulcerates, unless rubbed and irritated. M. Collignon, veterinary inspector of the slaughter-

house of Montmartre, has observed it three times in 300 oxen, and those then affected came from the marshy plains of La Rochelle. In the plains of Ferrara and Maremme of Tuscany the spina ventosa is very frequent; how many per cent. of the oxen become affected we cannot tell.

One word on the nomenclature of this disease. I have adhered to Anacker's title, spina ventosa, for the sake of convenience; others have described the disease as osteo-sarcoma, a term no less devoid of meaning, and equally misapplied to very various affections.)

"On the Vitulary Fever (Dropping after Calving) in our Domestic Quadrupeds, and especially in the Cow."—Pavese considers this disease as primarily consisting in an altered condition of the animal fluids, especially of the blood, produced by the absorption of residual portions of fœtal envelopes or fluids from the uterus, and which have therefore undergone decomposition; the vital powers are thus depressed by the effects of the vitiated blood on the nervous system, hence the adynamic symptoms and death. The method of treatment he adopts is as follows:—

℞ Secalis Corn. Pulv., ʒiij;
Corticis Peruv. Pulv., ʒviss;
Extracti Juniperi, q. s. M.

Having thoroughly incorporated the powdered substances with the extract, just enough of which is used for the purpose, he dissolves the whole in about a quart of an infusion of tanacetum or chamomile. This is administered immediately, and is repeated every twelve hours, prolonging the intervals, however, as the animals recover, and he completes the cure with the use of the infusion of tanacetum.*

From the beginning, Pavese makes use of lotions, fumigations, purging clysters, and infusions of the marsh-mallow per vaginam. He deprecates bloodletting. The Peruvian bark is used as an aromatic and tonic, and the ergot of rye to check the absorption of the putrid matters by the blood-vessels of the uterus, which is said to constitute the essential feature of the disease.—*Giorn. Vet., Turin*, Dec., 1854.

"Vitulary Fever in the Cow."—Köhne, in a memoir on this all-important disease, views it as a paralysis of the ganglionic system of nerves, which, in its further progress, involves the spinal cord and brain. The paralysis of

* The *tanacetum vulgare*, or tansy, is a fragrant way-side plant, possessing aromatic and anthelmintic properties. It is nearly allied to the chamomile, and is a good substitute for it.

the ganglionic system first affects the splanchnic nerves, probably beginning with the posterior mesenteric plexus, the spermatic and hypogastric, and extends itself rapidly to the pulmonary and cardiac plexuses, shortly to the whole sympathetic system. This is the primary stage when there is an arrest of the secretions of the body; secondarily, the spinal cord and brain become involved, and death necessarily ensues.

The treatment adopted by Köhne mainly consists in the administration of croton oil as a purgative and the nux vomica as a nervine tonic. His formula for the administration of the latter drug is:

℞ Nucis Vomic., ʒj—ʒjss;*
Antim. Pot. Tart., ʒss;
Sodæ Sulphatis, ʒxvi;
Sodii Chlor., ʒiv.

The whole to be dissolved in a gallon of water, made to simmer on the fire for a quarter of an hour, and half a pint to be administered every one or two hours. There are secondary injunctions laid down which would occur to a practitioner according to the state of the patient.—*Mag. fur die ges. Thierheil.*, Jan., 1855.

(Köhne's memoir is a most valuable one, though it leaves open the question as to whether he has completely proved his doctrinal explanation of the morbid phenomena. Friend, in 1838, said, "I consider the cause is disease of the nervous system, the effect loss of power in the muscular system." . . . "The practice which I recommend is to employ very strong counter-irritants, in order to combat with the cause, and to administer powerful stimulants and purgatives to counteract the effects." Thus far, Köhne and Friend are agreed, though they express themselves very dif-

* The dose of nux vomica recommended here is from half a drachm to two scruples. It may be expedient to vary the doses; but authorities are at variance respecting how much nux vomica can safely be administered. Dun recommends drachm doses for horse or cattle. The general impression is that ruminants are not very susceptible to its action. Hertwig gives a wide margin as the dose for cattle,—from ʒss to ʒss. Tabourin goes as far as six drachms; but both he and Hertwig are agreed that the decoction—Köhne's mode of administering it—is far more active than the drug in powder.

There is a strange fact connected with the action of the nux vomica that we may mention here. Tabourin says that in the reports of the Lyons Veterinary College for 1812, at pages 12 and 13, he finds that about an ounce of nux vomica suffices to destroy a sheep in half an hour, whilst eight ounces are required to produce marked symptoms of poisoning in the goat. Hertwig offers us convincing proof of the verity of this assertion by having administered to a goat in successive doses, augmenting daily, 440 grains of the vomica nut in eleven days, without the manifestation of poisonous symptoms.

ferently. But Friend's statement in 1839, based on his original memoir that it is an inflammatory affection of the spine, hence the name he applied to it of *Parturiens Medullitis*, has certainly not stood the test of experience. Professor Simonds discovered, on various occasions, apoplexy and congestion of the brain and spinal cord, hence he suggested the name Parturient Apoplexy. Most English veterinarians are acquainted with Mr. Simonds' views on the subject. Bragard, of Grenoble, Coenraets, of Puers, and Devleeshouwer, of Londerzeel, in Belgium, assert, on very good grounds, that they have met with apoplectic effusions or congestions of the brain and its meninges. M. Festal, again, comes in support of Mr. Simonds' views, but he recommends copious bloodletting, which the latter, and other authorities, discard as prejudicial. Some authorities who, like Köhne, have not met with the extravasations of blood, have looked on the affection as a febrile one, hence the terms *Essential* and *Putrid Fevers*, adopted respectively by Fischer and Pavese. Köhne considers it purely a paralysis. Fischer having, like Köhne and others, found the omasum full of dry aliment, and, besides this, ecchymoses on the uterus and peritoneum, thought the disease partook of the nature of typhus. Inflammation of the uterus and peritoneum, as occurring together after calving, have been confounded under the same head with dropping after calving. Rainard gives us the following well marked differential symptoms :

Inflammation of Womb and Peritoneum.	*Vitulary Fever.*
1. Extreme sensibility of abdomen on pressure, tympanitis. Subsequently effusion and dull sound on percussion.	Nothing special with regard to the abdomen.
2. The head carried round, and eyes staring, on the abdomen, the seat of the disease.	Head depressed, resting by the chin on the litter.
3. Although the strength is lost it is not so much. Motion and sensibility retained to near the last.	Sudden and rapid loss of power. Loss of motion and sensation from the time the cow has dropped.
4. Plaintive cries, anxious look, frequent attempts to move so as to relieve the pain.	Lying on the sternum and belly, or on the side; motionless, no moans, no movements.
5. Heat of body, thirst.	Rapidly getting cold. Absence of thirst.

Hering still holds to a form of inflammatory vitulary fever, the essential feature of which is metritis, and considers there are two forms of dropping after calving, the inflammatory and paralytic. Most men separate the former now-a-days, and consider it quite distinctly. Simonds and Rainard are both for this. Rainard, however, describes two forms of vitulary fever. The one discussed above, and which we understand to be parturient apoplexy, and another which is in reality parturient apoplexy, only not limited to the nervous centres, but pervading the other viscera of the body, and associated with carbuncles. This, Rainard holds to be a blood affection, partaking of most of the characters of vitulary fever. Indeed, it is allied to that class of diseases called carbuncular, by veterinary writers on the Continent, which I have observed here as well as there, and on which I shall, when an opportunity offers itself, discant at length.

To sum up, then, we may say that several diseases have been observed after calving bearing certain, if not all characters in common. They are, firstly, true paralysis, the organic lesions of which are unknown, if any exist. Secondly, parturient apoplexy, confined to the nervous centres. Thirdly, parturient apoplexy, associated with congestion of the viscera generally, and with the so-called carbuncles. Fourthly, a fever of a putrid type. Fifthly, a distinct disease, metro-peritonitis or inflammation of the womb and peritoneum.

I think I have brought the matter pretty well up to the knowledge of the present day. It remains for future investigators, and we need expert pathological anatomists, to clear the mystery in which this interesting subject is involved. Certain it is, that those authors above quoted, who insist upon attributing to all cases of this disease the anatomical characters which they have observed in a comparatively few, incur the danger which always attends too rapid generalization. This would be a matter of comparatively little practical importance if the theoretical opinions as to the pathology of the disease were not made the basis of its treatment. These are essentially experimental matters, and it is much to be desired, that all who have opportunities will observe with rigorous fidelity, note down with equal accuracy, and publish without prejudice, facts illustrating the pathology and treatment of this important malady.)

16, Upper Woburn Place;
July, 1855.

Extracts from British and Foreign Journals.

THE NATURAL SOURCE AND PHYSIOLOGICAL ACTION OF THE WOORARA POISON.

At a recent meeting of the Medical Society of London, a paper was read by Dr. Cogswell, on the Woorara poison of the Indians. He remarked that previous to 1852, when he published a series of experiments on the subject, only a few scattered instances were known of the power possessed by a numerous section of the class of dynamic poisons of paralysing the part to which they are immediately applied. Opium and hydrocyanic acid had been observed to paralyse the hind leg of the frog; aconite and the viper's poison to cause numbness of the tongue, and ticunas instantaneously to stop the peristaltic motion of the bowel of a guinea-pig. The propriety with which the last effect was attributed by Messrs. Morgan and Addison to paralysis appearing doubtful, and the author being also desirous of including the ticunas among the substances whose local action had been investigated, he had procured some of this poison for examination. There was much obscurity connected with the name, the natural source and physiological action of the South American arrow poison. It was severally called urare, curare, woorara, woorali, and ticunas. The first was supposed by Humboldt and Sir R. Schomburgh to be the term employed by Raleigh; but, though the poison itself was mentioned in Raleigh's 'First Voyage to Guiana,' the word "ourari" only occurred in the Appendix to the account of the Second Voyage, which was performed by Captain Keymis, and there only as one of the names of poisoned herbs. "Curare" was the name employed by Humboldt himself, and was preferred on the Continent; but the author was unacquainted with its origin. "Woorara," was used familiarly by Bancroft, in 1769, who said the poison was so called from the name of a twining plant which furnished its chief ingredient; and, as it was adopted by Brodie, and had become current in our language, it was thought to deserve the preference. "Woorali" was a corruption of woorara by one of the Indian tribes. "Ticunas" was simply the name of a tribe on the Amazon, which prepared the poison, and need not be retained, except (as with other drugs) to indicate a particular manufacture, as the Macusi or Wapisiana Woorara of the Orinoco, the Lamas or Ticunas Woorara of the Amazon, &c.

As regarded the natural source, the colonists of Demerara believed a chief active ingredient to be the poison of snakes; and two American writers had lately advocated the same opinion. The physiological action, as generally described, agreed with that view. Professor Taylor, however, alleged, that the poison undoubtedly contained strychnia; and Schomburgh thought he had traced it to a plant called the Strychnos toxifera, and mentions two experiments in which the extract had proved fatal, but without describing the symptoms. The author had tried on animals the seed and extracts of the bark and wood, prepared from specimens obtained at public institutions, but found no effect from them. The specimens of the wood, however, had not been authenticated by the authorities. Experiments were then described to show that the effects of Woorara are the opposite to those of strychnia. It was the common belief, also, that woorara might be swallowed with impunity; and Sir B. Brodie quoted Fontana to this purport; but the latter had found it fatal when given internally, though a larger quantity was necessary than if applied to a wound, and the author's experiments confirmed this result. Applied to the bowel, the poison did not immediately cause paralysis, but local constriction, like the other dynamic poisons; while in the author's experience all had a preliminary irritant effect, whatever the nature of their specific action. Introduced beneath the skin of the frog's leg, it paralysed the limb, like opium and the other poisons mentioned in the author's previous publication. The paper concludes with the following summary:—

1. The term "Woorara" appears to have been longer distinctly employed to designate the Indian arrow-poison than any of the other names, except, perhaps, "curara," with the origin of which the author is not acquainted.

2. Woorara has a generic meaning like opium, sarsaparilla, &c.; while "ticunas" is only the proper name of one of the native tribes which prepare the poison. Ticunas, however, in common with "macusi" and other Indian names, may be used specifically to distinguish particular manufactures, according to the practice with other drugs.

3. The physiological action of woorara is opposed to the view that it owes its chief ingredient to a plant of the genus *Strychnos*.

4. In order to determine the point as to whether or not the poison is derived from the *Strychnos Toxifera*, it is necessary to obtain authentic specimens of the bark and wood in sufficient quantity to enable the question to be thoroughly investigated.

5. Woorara is a poison when swallowed, contrary to what is commonly believed on that subject.

6. It acts primarily as a stimulant.

7. It acts secondarily, or, as it may be termed specifically, as a sedative, paralysing the functions of the nervous system, and this both locally when it is immediately applied to the body, and constitutionally after it enters the circulation.

Mr. Dendy asked whether, in the cases mentioned by the author, in which death followed the administration of the poison by the mouth, there was any abrasion which might account for the fatal result.

Dr. Glover believed that the different names mentioned by the author were only varieties of the same word, all referring to the same poison. He thought the views of the colonists as to its being composite were correct. Probably snake poison was one of the ingredients; and it might have more to do with the preservation of the poison than the addition of any new properties. The poison was an antidote to strychnia; and as the effects of strychnia were similar to those of tetanus, he would suggest, whether the poison might not be used with advantage in cases of tetanus. With regard to prussic acid, he had applied the vapour of that poison to his eye, and it produced great vascularity, which, however, was soon removed. The sensation produced by prussic acid was that of extreme heat and inexpressible acridity. In every case he had seen of poisoning by prussic acid, he had found the stomach congested. In animals he had found somewhat of the same congestion, but not to the same extent as in the human subject.

The Chairman, Dr. Snow, said that prussic acid vapour, when inhaled, felt warm and pungent; and dilute prussic acid, when applied to the skin, produced heat and redness. He believed every narcotic was more or less irritating.

Dr. Gibb said that the Rev. Mr. Brett, a traveller in British Guiana, mentioned a poison which he said was prepared from the expressed juice of the *Strychnos toxifera*, and stated that the natives not only poisoned their arrows with it, but kept it under their nails, with which they could cause death by scratching, or dipping their fingers into any fluid and poisoning it.

The Chairman said he had killed two guinea-pigs with an arrow that had been in England twenty-five years; one died in five minutes and the other in half an hour. It was a remarkable circumstance, that sensibility and consciousness remained to the last; the animals, however, soon lost their muscular power, and were in a kind of paralysis agitans.

Generally, consciousness was lost first, and muscular power last.

Dr. Crisp said it was a question how long a serpent's poison would retain its virulence; and he was about to test that point by some poison which he took from a rattlesnake three years ago. He did not think that experiments with the poison upon reptiles were altogether satisfactory; as those animals were not, he believed, so susceptible to animal poison as mammals. He had introduced by puncture the poison of a viper into the mouth of a common snake, a frog, and a toad, without any effect; and he had also caused a hornet to sting a frog, a toad, and a common lizard, without producing any apparent result.

Dr. Richardson said, that in the experiments of Mr. Walton and others, the poison had produced profound insensibility. The heart, also, continued to beat after respiration had ceased. The experiments had led him to think of the possibility of obtaining a new anæsthetic which should not paralyse the heart. Dr. Richardson than mentioned a case in which he administered a teaspoonful of prussic acid to a dog with paralysed limbs, in order to kill it, on which the animal for the first time began to walk about. He gave it the entire contents of an once bottle, but did not succeed in killing it. The dog was afterwards hanged, and, on examination, was found to present no unusual appearance to account for the occurrence.

Mr. Dendy thought the opinion that the Woorara poison was often swallowed with impunity received some corroboration from the fact, that the Indians constantly ate the game killed by the poisoned arrows. He agreed with Dr. Crisp in thinking that experiments with animal poison were not satisfactorily performed on cold-blooded animals.

Mr. Rogers Harrison said, he had seen death occur from hydrocyanic acid long before any irritation could ensue. He mentioned the effects of the cocculus indicus used by poachers in order to bring fish to the surface of ponds. The fish were evidently first paralysed by the poison, and were easily caught; but, if they were put into fresh water, they would recover.

The author, in replying, said, he did not know whether there was any abrasion in the cases mentioned by Mr. Dendy. He did not lay much stress on the circumstance, that the Indians ate the game killed by the poisoned arrows, seeing that the poison must be very much diffused, and the process of cooking might probably destroy its effects.—*Medical Times.*

USE OF HORSEFLESH FOR FOOD.

In the present year, M. Geoffroy St. Hilaire has devoted a part of his course in the Museum of Natural History in Paris to the consideration of applied zoology. Among the questions treated of, has been that of the consumption of horseflesh. Almost all our auxiliary animals at the same time furnish food; and this is easily understood; man, in multiplying these animals, creates at the same time a great mass of power and a large quantity of alimentary material; and he is led to avail himself of the latter when the former fails or becomes useless.

Why, then, does not the horse, a large animal, and the most extensively multiplied of our auxiliary quadrupeds, also furnish food? Like all herbivora, the horse produces an eatable flesh, rich in nitrogen, wholesome, and far from disagreeable to the taste.

Baron de Tott relates, that having been sent as an ambassador from the king of France to the Khan of Tartary, he was in the latter country entertained with an excellent meal of horseflesh. [The use of horseflesh as an article of food by the Tartars is a well-known fact.]

M. Huzard, a veterinary surgeon, relates that in 1789, the Parisians ate horseflesh during three months, and that the public health did not suffer in the least.

Baron Larrey, the celebrated military surgeon, says that horseflesh is very convenient as food for man; it seemed to him especially nutritious. He often saw it used, and with the greatest advantage, by the soldiers and the wounded of the French army. During the seige of Alexandria in Egypt, in order to overcome the repugnance of the soldiers to this article of diet, he killed his own horses, and used them as food.

MM. Cadet, Parmentier, Pariset, and Parent-Duchatelet, have also reported favorably on the qualities of horseflesh.

Our repugnance to horseflesh arises simply from our long having ceased to use it. Anciently, both the horse and the ass were employed as articles of food. The use of horseflesh was at one time general among the inhabitants of the north and west of Europe. The reason for its disuse is thus given by M. Geoffroy St. Hilaire.

The worshippers of Odin used the horse in sacrifice. When the animal was sacrificed, the flesh was served up on the tables of the priests and of all classes of the population. The eating of horseflesh was thus connected with the rites of

the Odin religion, and was a great obstacle to the establishment of Christianity among the people of the north: for, whenever a Scandinavian, even though converted, ate horseflesh, his mind reverted to the recollection of his former faith. Hence, at an early period, the popes prohibited the use of this article of food. In the eighth century, Pope Gregory III wrote to St. Boniface, archbishop of Mayence, to "abolish the custom by all possible means, and impose a proper penance on all eaters of horseflesh. They are unclean, and the act is execrable." His successor, Pope Zacharias, renewed the interdiction.

Now that the motive of the prohibition issued by the popes has disappeared for many years, the use of horseflesh is being gradually resumed; and it is remarkable, that it is first resumed by those who were the latest to abandon it. Denmark leads the way: in that country, horseflesh is sold publicly under the inspection of the government. For some years, Belgium has followed the example: and recently the Austrian government has authorised the public sale of this article of food.

It is to be hoped that France will not be the last country to throw off old prejudices. A wholesome, nutritious, economical article of food is lost in France by millions: and at the same time there exist millions of individuals insufficiently fed, and physically and morally deteriorated. The use of this article of food would regenerate them, and give to the state a class of robust and intelligent servants. If Ireland had been put in possession of this article of food, that country would perhaps not have offered the spectacle of one entire people torn by famine from their ancestral soil.

In conclusion, M. Geoffroy St. Hiliare observed that at first horseflesh must be regarded as food for the poor: it is in this character that its utility will be first shown. The rich will use it if they please; and they ought to make use of it for the sake of example, and to prevent the poor from imagining that the use of horseflesh is one of the sad privileges of misery. (*Gazette Médicale de Paris*, 10th March, 1855; and *Journal of Public Health*.)

ON THE HYDATID IN THE BRAIN OF SHEEP.

The *Cœnurus Cerebralis* (hydatid of the brain) is one of the entozoa which most interests the veterinary surgeon. This creature belongs to the order originally designated cystic

worms, but at the present time it is considered as nothing more than the *larva* of the *tænia serrata*. It is met with in the brain of the sheep, ox, and pig; sometimes, also, in that of the horse, and the human subject. Its presence produces the disease known by the term *vertigo*. In making investigations upon the mode of the development of this entozoon, MM. Küchenmeister and Haubner have thrown much light upon the etiology of one of the most interesting and serious diseases. The experiments which they instituted at the veterinary school of Dresden, have, at their request, been repeated at Giessen, Berlin, Vienna, and several other towns in Germany, and everywhere they have been these experiments have been attended with the same result.

By causing sheep to eat the fecundated or terminal segments of the *tænia serrata*, these animals at the end of one or two weeks have presented symptoms of cerebral congestion, and which has quickly terminated fatally in many instances by inducing encephalitis. On the contrary, if the animals pass through this congestive stage of disease, then there takes place the formation of an hydatid in the cavity of the skull, and soon afterwards the symptoms of vertigo will be observed.

On making a *post-mortem* examination of these subjects of experiment, vesicles, varying both in number and size, are found in the cranial cavity. These vesicles, or young hydatids, which may either occupy the surface or the substance of the brain itself, are always found near to a blood-vessel. They are at first surrounded with exudated matter, and are always found at the extremity of a more or less tortuous and minute canal. This perhaps is the road or passage which the hydatid followed before becoming fixed. Similar vesicles are also found in the tissues of the liver, diaphragm, heart, lungs, muscles, &c. These, however, are met with in a desiccated state, and often enclosed in a capsular envelope, the hydatid embryos having died from not being situated in the nervous centres; the only part of the body, at least in the sheep, where they can fully develope themselves.

MM. Röll and Gürlt have found that the tapeworms which have been passed from the intestines of the dog for some days have been better, and more generally developed into hydatids, than tænia which are fresh. The former of these veterinary surgeons has even allowed them to become putrid, when covered with mould, and has thus obtained more complete and speedy results.

How is it (ask the editors of the Lyons Journal) that these entozoons, on being expelled from the intestinal tube, are

enabled to find their way into the general organism? Is it by perforating the tissues by means of the hooklets with which their heads are furnished? or are they received, in some ill-understood manner, into the course of the circulation, and thus carried into the different regions of the body?—*Journal de Médecine Vétérinaire.*

REMARKS ON SOME OF THE ENTOZOA BY M. ZANGGER.

M. Zangger, Professor of the Veterinary School at Zurich, has devoted much time to the study of entozoa affecting our domesticated animals. He has examined in particular the hydatids and tapeworms with a view to throw more light upon the modern discoveries which have been made respecting them. In his memoir, he gives the history of these parasites, and the effects each has, in particular, upon the animal economy; he also dwells upon their mode of development, and especially studies their metamorphoses, as they have been described by German naturalists. The researches of the Swiss professor, however, are not limited to a simple description of these creatures and their effects, for he proposes a remedy, in order to render his work more useful to society. We shall extract from this memoir that which has particular reference to preventive treatment; but in order that our readers may comprehend more fully what M. Zangger proposes, we shall first repeat the opinion of investigators into this important subject.

According to such persons, the hydatids do not form a separate class of worms, but are the larvæ of the tapeworm.

The long-necked hydatid, and also the round or headless hydatid appear to be nothing more than the larvæ of tæniæ in an imperfect state. Their duration, however, in this form has not as yet been determined.

The *cysticercus pisiformis* which is met with in the liver, omentum, and mesentery of the rabbit, being swallowed by the dog, is changed into the *tænia serrata*, which, according to M. Siebold, is nothing more than the *tænia solium* of the human subject.

The *cysticercus cellulosa** of the pig, the *cysticercus tenuicollis* of the ox, and the *cœnurus cerebralis*† of the sheep are also said to produce the *tænia serrata* in the body of the dog, and the *tænia solium* in the human subject. The *cysticercus fasciolaris* of rats, produces the *tænia crassicollis* in the intestines

* It is this cysticercus which is the cause of the measled flesh of the pig.

† The hydatid of the brain of the sheep and other animals.

of the cat; and, lastly, the *echinococcus veterinarum* of sheep and oxen causes a small tænia in the dog, which has as yet only been studied by Siebold, and which this helminothologist designates the *tænia Echinococcus*.

We now come to the second series of experiments.

In order to develop the *cysticercus fasciolaris* in the liver of the rat, it is only necessary to make the animal swallow the fecundated segments, or only the ova of the *tænia crassicollis* of the cat. By giving the same parts of the *tænia serrata* of the dog, or the *tænia solium* of the human subject, to rabbits, the *cysticercus pisiformis* will be produced in the liver of these animals. In sheep, however, the *cœnurus cerebralis* will be developed. Thus the same tænia produces, according to the animals, different hydatids, agreeably to the species of animal, and the parts of the body in which the creature may chance to be located.

The fruitful segments of a tænia are frequently eliminated with the excrements of the animals which are affected with it; and, according to M. Küll's experiments, the ova of the worm which are contained within them do not die at the time these segments pass into putrid fermentation. Herbivorous animals, under such circumstances, will often find them in the pastures and stagnant waters, and being taken in with their food, the eggs will undergo progressive development, and thus lead to the production of hydatids.* The cooking process to which the food of man is subjected, preserves him in a great measure from this disease. It has, however, been observed, that butchers and pork-dealers are often affected with tapeworms.

With a view to lessen the frequency of giddiness and other diseases, M. Zangger proposes the following measures of hygiene.

1st. To diminish the number of dogs by increasing the tax upon these animals.

2d. To make known to the owners of dogs affected with tæniæ, the accidents to which they expose their animals, and even society itself.

3d. To give the animals, when at pasture, pure water, that they may not suffer from thirst, and thus seek it in stagnant pools, ditches, &c.

4th. Not to make use of excrements of the human subject,

* This mode of the development of hydatids will sufficiently explain the frequency of giddiness in sheep, which are at all times accompanied by dogs. We may also ask whether these ruminants, in which, according to M. Hering, giddiness is sometimes epizootic, and dependent upon locality, meet with the germs of the hydatids in such pastures?

or the carnivora, as a manure in fields where alimentary grasses are grown, and especially if the plants are in a forward state.

5th. To well cleanse these grasses before giving them to the animals, if taken from fields thus manured.

6th. To prevent the use of the flesh of animals affected with worms, by making known to butchers and inspectors of cattle, the accidents to which the use of this food exposes them.

7th. Not to allow this meat to be eaten, unless perfectly cooked.

8th. Not to give it raw to dogs.

[In continuation of this subject, we append from the pages of 'The Annals of Natural History,' the following translation:]

ON THE TRANSMISSION AND METAMORPHOSES OF THE INTESTINAL WORMS. BY MM. MILNE-EDWARDS AND VALENCIENNES.

On the 30th April, 1855, M. Milne-Edwards communicated to the Academy of Sciences of Paris the results of some experiments made by M. Van Beneden, in the presence of MM. Valenciennes, De Quatrefages, Haime, and himself, in illustration of his views upon this interesting subject. The object of these experiments was to prove the transformation of the *cysticercus pisiformis* of the rabbit into the *tænia serrata* when introduced into the intestines of the dog; and they appear to have been perfectly satisfactory to all the members of the commission with the exception of M. Valenciennes, whose observations upon these phenomena follow those of M. Milne-Edwards.

The *tænia serrata* is exceedingly common in adult dogs, but is not found in these animals when very young. In his first experiment, M. Van Beneden used two newly-born puppies, and brought them up under exactly the same conditions, except that to one of them a certain number of *cysticerci* were administered in his food, whilst these worms were carefnlly kept from the second. The *cysticerci* were administered at three different times; viz., on the 12th and 23d of March, and on the 21st April. These dogs were killed and opened on the 25th April, when the animal which had eaten no *cysticerci* was quite free from the *tænia serrata*, although the lower part of its intestines contained a single

worm of a different species, the *tænia cucumerina*. The other dog, to which the *cysticerci* had been administered, contained three bundles of worms, which were regarded as the *tænia serrata* by M. Van Beneden and the majority of the other observers. The bundle which was furthest from the stomach, and which was considered as proceeding from the first administration of *cysticerci*, was composed of tæniæ which had nearly arrived at the adult state; the other two packets were less advanced, that nearest the stomach being the smallest, and regarded as produced from the *cysticerci* last administered. The same results were obtained from another similar experiment; but as this had been going on for a much longer period (the first injection of *cysticerci* having taken place on the 18th December), the tæniæ situated at the greatest distance from the stomach were not only larger than in the previous experiment, but had the generative organs well developed. In all these cases the number of tæniæ found in the intestines was less than that of the *cysticerci* swallowed; thus, the first dog had received thirty-two, and the second seventy of the cystic worms; but the former contained only seventeen, and the latter twenty-five tæniæ.

M. Van Beneden informed M. Milne-Edwards that he has repeated these experiments no less than thirteen times, and always with equally decisive results. Similar experiments have also been performed by Küchenmeister, Von Siebold,* and Leuckart, and always with the same success.

The objections raised by M. Valenciennes to the deduction drawn by M. Van Beneden and other authors, from the observation of the above facts, namely that the *cysticercus pisiformis* of the rabbit is the larval form of the *tænia serrata* of the dog, repose principally upon the question of the specific identity of the parasite produced by the administration of the *cysticerci* to the last-mentioned animal with the *tænia serrata*, a worm which is so common, that, M. Valenciennes states, it may almost be predicted with certainty, that on opening a dog of four months old and upwards, this parasite will be met with. Previous experiments had proved to M. Valenciennes that the administration of the *cysticercus pisiformis* to dogs "gives rise to a flattened riband, composed of numerous narrow articulations, and presenting at the first glance exactly the appearance of a tænioid worm, like the *tænia serrata*." M. Valenciennes' observations agree closely with those of Von Siebold; but he states that the tænioid worms produced from the *cysticercus pisiformis* in his experiments never possessed generative organs, and the articulations never

* Annals, N. S., No. 60, Dec. 1852, p. 431.

exhibited the genital pores situated on tubercles of the true *tænia serrata*."* In the case of the second dog referred to by M. Milne-Edwards, in which adult tæniæ furnished with generative organs were found, M. Valenciennes states, that out of the twenty-five specimens of the supposed *tænia serrata* there were only two in which the generative organs were developed; these he admits to have belonged to that species, but adds, that as the dog was greatly infested with worms of other species, he is by no means convinced that the two specimens of *tænia serrata* furnished with generative organs were produced from the *cysticerci* administered. He also remarks, in opposition to the opinion of Van Beneden and others, that the *cysticerci* are the larval forms of tænioid worms; that notwithstanding the abundance of the *tænia serrata* in the intestines of dogs, even in towns, their opportunities of devouring the entrails of rabbits, the only situation in which the *cysticercus pisiformis* has been found, are exceedingly rare; whilst, with regard to the *cysticercus fasciolaris* of the rat, which is stated by Küchenmeister and Siebold to give rise to the *tænia crassicollis* of the cat, he observes that the cystic worm in question is of very rare occurrence, although the *tænia* said to be produced from it is to be found in almost every cat.—*Comptes Rendus*, 30th April, 1855, and *Annals of Natural History*.

DESTRUCTION OF AN ELEPHANT.

The large elephant, 120 years of age, late the property of Mr. Wombwell, being incapable of locomotion from diseased feet, the present proprietor gave directions for its destruction in the easiest manner possible. Accordingly, Mr. E. Price, veterinary surgeon, and Mr. Flewitt, chymist, of Birmingham, on Friday last proceeded to carry his wishes into effect. In ten minutes from the application of chloroform the animal became totally insensible; prussic acid was then administered without effect, and two large doses of strychnine without producing any perceptible feeling of pain. Not succeeding in these endeavours, a continuous application of chloroform was made, in the hope that the animal might sink under it, but, after three hours' perseverance in this course, no difference of respiration being observed, the administration was stopped, and in one hour and a half all effects of it had passed away. The only known means of destruction left were the knife and the bullet. The latter was first tried (the animal again being chloroformed) and wounded a branch of the carotid artery, from which blood flowed in a tolerably sized jet. The opening was then enlarged by a knife, and the artery fully divided. In a few minutes the huge animal ceased to live, having died without a struggle or evidencing the slightest feeling of pain.

* It is to be observed, however, that M. Valenciennes does not inform us of the length of time over which his experiments extended.

THE VETERINARIAN, AUGUST 1, 1855.

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

THE FRENCH AGRICULTURAL EXHIBITION.

DID we need any apology for occupying our pages with particulars relating to the "International Exhibition of Cattle," lately held in the French capital, we have it in the fact that the science of agriculture, and especially in all which relates to the breeding and rearing of animals, is so intimately united with the practice of veterinary medicine, that their disjunction would materially injure our national prosperity. Nor is this the less true if we pass the limits of our own "sea-girt Isle," and view those sciences in their world-wide extension. Everywhere we find that to the one belongs the production of living wealth, and to the other the preservation of these animated riches. They are branches of the same tree, and their union is as natural; therefore together must they be cultivated, so as to be productive of real and lasting good.

Besides these considerations, we deem it but right to lend our humble aid to keep up the union which now happily exists between the two countries. Governments may co-operate, but weak will be their effects unless the people fraternise. We have been eye-witnesses to the fact, that feelings of cordial friendship rule the actions of our neighbours and allies towards us, and as Englishmen we are proud to show the same noble bond binds us to them. Only here and there is a barrier that can stem the torrent of despotism which threatens to overrun Europe, and engulf our liberties, and enslave our consciences. That these or similar considerations have had their influence with the government of France in setting the example of an international exhibition of agricultural products cannot be doubted; and the success which has attended their efforts marks the wisdom of the act.

Under such circumstances it was to be expected that the Royal Agricultural Society of England would be selected to assist by its presence at the inauguration, and accordingly it was requested to send a deputation to Paris. The invitation was officially made through the Consul-General, and couched in the following terms:

London; *April* 28, 1855.

Sir,—I have the honour to inform you that the Minister of Agriculture, Commerce, and Public Works, has just informed me that it would afford him the highest gratification if the Royal Agricultural Society of England would send a deputation to France, in order to represent it at the General Agricultural Concours, which is to take place at Paris. His Excellence wishes me to assure the Royal Society, that such a step would meet with the greatest sympathy from the government.

I beg, sir, that you will kindly take notice of the communication I have now the honour to address to you at the next meeting of the Council. I have the more pleasure in being the interpreter of the government of his Imperial Majesty, as knowing the favorable disposition of the Royal Society, and I have no doubt of the kind reception that the invitation of M. Rouher will meet with from its members.

Accept sir, the repeated assurances of the highest esteem of your very obedient servant,

Edward Herbet,
Consul-General of France

To James Hudson, Esq., Secretary to the Royal Agricultural Society of England, &c., &c., &c.

In accordance with this polite request the Council appointed a deputation consisting of Mr. Miles, M.P. (President), Mr. Garrett, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Hudson (Secretary), Mr. Jonas, Mr. Milward, Professor Simonds, and Professor Way.

The Consul-General having also communicated to the Council the request of the Minister of Agriculture and Commerce, that they would kindly undertake to name two jurors to

act on the part of this country, in the classes of Short-horned and other Cattle, and those of Pigs and Sheep; the Council resolved, that Mr. Milward, of Thurgarton Priory, should be requested to act as a juror in the former, and Mr. Fisher Hobbs in the latter, of those classes.

It being decided that the exhibition should be held from the 1st to the 9th of June, the deputation proceeded to Paris on Monday the 4th, and were received with the greatest consideration and kindness by Mons. E. Rouher, the Minister of Agriculture, Commerce, and Public Works, by all the functionaries connected with the agricultural department of the state, the Commissioners of the Cattle Exhibition, and also by the British ambassador. Preliminary matters being arranged, the deputation attended the Cattle Show on Tuesday and Wednesday, and were agreeably surprised to find that so many animals of a very superior description had been brought together by the French breeders.

The show-yard itself presented a very gay appearance. The taste displayed in the arrangements—the combining of trees, flowers, and fountains for effect—the number of well-dressed individuals—with the commingling of colours of the bright tints of the ladies' summer dresses—the rows of trees, partially shading the yard from the bright sunshine—presented a picture which will not soon be effaced from the memory of those, especially of strangers, who witnessed the Exhibition.

The number of lots exhibited was about 1200, and as some of these comprised several animals, the total number of animals exhibited could not fall far short of 2000.

The interest appeared to be pretty equally divided between the breeds indigenous to France, and those which had been brought from the mountains of Switzerland, or from the fertile plains of England. The strangers, previously unacquainted with the native breeds of cattle of the country, seemed generally to be much struck with the merits of many of the animals exhibited, while those more familiar with them appeared to scrutinise them with delight.

The most beautiful specimens of French cattle were doubt-

less the Charolais; a breed inhabiting the province of La Nievre, having been imported there, it is said, about thirty years since from the valleys lying at the foot of the mountains near to Lyons. By some persons these cattle are supposed to have a Roman origin. They are white in colour, and bear so great a resemblance to our Durhams as to be easily mistaken for them by a casual observer. In one particular they even excel the Durhams, namely, in their milking properties; and there are several agriculturists who entertain the opinion that we may yet have to import the Charolais cattle to cross with our allied breeds, to impart this wanting property to them. The merits of the various breeds, foreign and domestic, are well described by a writer in the *North British Agriculturist.*

"Of the Dutch cattle," he says, "there were few animals of even ordinary merit exhibited. Better specimens are frequently to be seen in Smithfield market. Those who have supposed that the shorthorn came originally from Holland, were certainly not acquainted with the breeds of cattle which are to be found in that and adjoining countries.

"FRIBOURG.

"This breed, which extends over several of the Swiss Cantons, is characterised by a bulkiness of frame, with a thickness of bone, which appears surprising. Colour, brown or black, with large patches of white, face and back generally white. Some of them bear a likeness to the old herd of cows in Scotland, with white faces. Burns, in the 'Cottar's Saturday Night,' so describes his father's cow. It is a curious fact, and one we have not seen observed, that the Swiss bear a most striking likeness to the rural population of Scotland. In personal appearance, and in expression of countenance, the resemblance was so remarkable, that we could not divest ourselves of the impression, when in the showyard, that we must have met the same individuals in Scotland, in markets, and elsewhere, who had charge of the Fribourg and Schwitz cattle. The history of the countries is nearly similar, and both have had to fight out their own position. Are they sprung from the same stock, or has their

training produced this striking resemblance? The Fribourg cattle are larger than any native breed of the United Kingdom, not very level on top, but evidently good milkers. They have a mildness and gentleness in their expression, which speaks in unmistakeable language that they are upon very intimate terms with their owners.

"SCHWITZ.

"This remarkable breed, as milk-producers, are generally alike in colour, being of a dark dun brown, with the under parts of a lighter colour approaching to fawn or yellow. The price asked by the owners for both of these Swiss breeds was fully double what they would have realised in our markets, that is, if valued as ordinary dairy cows. This breed, like the Fribourg, has eyes so expressive, that those who do not place cows very high in the scale of animated nature, would do well to study. 'Ox-eyed Juno' can be understood when looking at the mild eye of the Schwitz cow.

"ENGLISH BREEDS.

"The Durhams (shorthorns) were arranged in various classes, foreign and native exhibitors being classed separately. Several very superior animals were shown. The first-prize bulls, cows, and heifers, were fine specimens of the breed. The majority of the animals exhibited had previously successfully competed at local shows, and were also good specimens of the Durham. Some animals, however, were entered more with the view of effecting a sale, than from the hope of their being successful as prize-takers.

DURHAMS—MALES.

CLASS 1.—Males under two years.

There were 7 competitors.

1st Prize—Gained by the Marquis de Talhouet. Breeder, Mr. R. Stratton, Wiltshire.

2d Prize—Mr. Stewart Marjoribanks. Breeder, the exhibitor.

3d Prize—Mr. Boutton-Leveque. Breeder, Mr. Towneley.

Class 2.—Males above two years.

There were 16 competitors.

1st Prize—Lord Feversham. Breeder, the late Earl Ducie.

2d Prize—Mr. Crisp. Breeder, the exhibitor.

3d Prize—Lord Talbot. Breeder, Mr. Crisp.

4th Prize—R. Stratton. Breeder, the exhibitor.

5th Prize—Prince Albert. Breeder, Mr. Fawkes, Yorkshire.

In the first-prize bull, the four middle placed incisors had been replaced by the permanent teeth; he was entered as being twenty-six months old, and which, no doubt, was correct. Some thought he was older. The girth and length of the three bulls were:

1st Prize—age 26 months—Girth, 7 feet 10 inches.
Length, 5 „ 8 „

2d Prize—age 41 months—Girth, 8 „ 4 „
Length, 5 „ 8 „

3d Prize—age 84 months—Girth, 8 „ 9 „
Length, 5 „ 10 „

The latter is the first-prize bull of 1853, at Lewes, Perth, &c.

DURHAMS—FEMALES.

Females under two years.

There were 7 competitors.

1st Prize—T. Ball, Ireland.

2d Prize—Comte d'Aspremont, Belgium. Breeder, Mr. Emmerson, Yorkshire.

3d Prize—Prince Albert.

Females above two years.

There were 16 competitors.

1st Prize—R. Stratton, Wiltshire. Bred by the exhibitor.

2d Prize—T. Ball, Ireland. Breeder, Mr. John Turner, Ireland.

3d Prize—Marquis de Talhouet. Breeder, Mr. Stratton.

4th Prize—Mr. Cartwright, Northamptonshire. Breeder, Mr. Topham.

"In the class of females above 2 years old, T. Ball exhi-

bited the best animal, but the judges, after deciding in her favour, found her disqualified from competing, they finding, by inquiring from the care-takers, that she had produced a live calf in March last, but was allowed to become dry.

"Of Durhams pure, bred in France, there were 18 competitors in the male class, and 11 competitors in the female class. There were also some very superior animals, bulls and cows, exhibited as extra stock, from the Imperial breeding establishment in Mayenne.

"HEREFORD CATTLE.

"Of the Herefords, the quality of the stock was superior to any previous exhibition that we have attended; all the prize animals being most extraordinary specimens as to quality of flesh, and generally of full sizes. Lord Berwick obtained the first prize for bulls, and *mention très honorable* for another animal. The second prize was won by Mr. E. Price, and the third by Vicomte de Curzay. The prizes for cows were obtained by Messrs. Perry and Walker.

"DEVONS, SUSSEX, etc.

"All very superior in both breeds.

"The first-prize bull belonged to Mr. Turner, and the second to Mr. Farthing. Of the cows the first prize was considered by some judges to be inferior to the second prize. First prize to Prince Albert, the second to Mr. Farthing, and *mention honorable* of Mr. Turner's heifers. The Emperor, Napoleon III, purchased these heifers from Mr. G. Turner: they were got by the first-prize bull. Price said to have been handsome. Two Sussex cows in this class were sold for beef, at £25 each; and another very large animal sold for about £40.

"AYRSHIRE, ALDERNEY, SCOTCH, etc.

"The first prize was awarded to Lord Talbot—Polled Angus bull, got by Mr. Watson's (of Keillor) celebrated bull 'Jock.' The second prize was given to Mr. F. Bella. There was an indifferent show of Ayrshires: the number of cows consider-

able. The first prize was a beautiful specimen, but rather undersized, the property of the Marquis de Vogue; the others exhibited did not produce a favorable impression as to the Ayrshire breed.

"The Emperor exhibited three Ayrshires as extra stock. One of these, a heifer, was a beautiful creature, and would be difficult to beat even if exhibited in Ayrshire. Several of the Imperial establishment had cattle as extra stock; the most of these were crosses between the Devon or Ayrshire with native breeds.

"SHEEP.

"There were no sheep belonging to France which possessed any real merit with the exception of the Merinos, and of these there were several splendid specimens. Besides the great superiority of their wool, several of these animals, at sixteen months old, surpassed in weight of carcass many of our large breeds of sheep.

"The show of Leicesters and Cotswolds was good.

"*All the prize Leicester sheep had dun faces and legs, some of them spotted*, and could with no great stretch of fancy be classed as a cross between Leicester and Down sheep. The Cotswolds were remarkably fine animals. The flock of Mr. B. Browne, Gloucestershire, who furnished the majority of those taking prizes, should be examined by those desirous of becoming acquainted with this valuable breed.

"Of the Southdowns the exhibition was superb as regards the tups; the ewes were not so well brought out. The whole of the tups exhibited by Messrs. Jonas Webb, Ellman, and Rigden, were creditable to their breeders. Mr. Jonas Webb sold about fifty to be forwarded from England, and at very high figures. The Emperor, who visited the show-yard on the afternoon of Thursday, conversed for a few minutes with Mr. Webb, admiring the symmetry of the prize tup. His Majesty asked Mr. Webb if the wool of the Southdown was as fine as the animal was beautiful. Upon Mr. Webb assuring him as to the superior quality of the wool, his Majesty next questioned Mr. Webb as to the quality of the mutton. Mr.

Webb's reply was, that if his Majesty would be pleased to accept a haunch of mutton at Christmas, he would be happy to send him one, so as to enable him to judge as to the quality. His Majesty, in answer, said, he would be happy to accept the present.

"Mr. Webb afterwards, through the Minister of Agriculture, made a present of the prize tup, valued at 300 guineas, to the Emperor, which his Majesty was pleased to accept.

"The exhibition of goats was interesting from the curious breeds congregated. Of these, one pair from Mont Blanc, had horns fully three feet long, and thick in proportion; the points are turned backward, or the animal could not carry its own weapons of defence—formidable enough if the animal is naturally courageous. The beautiful goats from Cashmere, as well as some others, attracted many admirers.

"The competition among the pigs was well sustained. Some disappointment was felt that a sow was disqualified, from the idea that she was overfat for breeding.

"The native breeds of pigs are not only offensively ugly, but are often positively dangerous. The French are becoming every day more impressed with the value of the improved English breed of pigs. Mr. Crisp, of Gedgrave (Woodbridge), sold his boar for fifty pounds.

"In poultry there was little competition. The best pens were easily selected. The great proportion of those which received prizes were good specimens of the respective breeds. The geese were all inferior. The Rouen ducks very fine. Of fancy pheasants there were several pens, and also of fancy geese. The display of pigeons was meagre as to numbers, and some were curiously classed, the common carrier pigeon being marked as the carrier pigeon of Ireland. Of rabbits there was also little deserving of commendation."

The number of persons who visited the show-yard on the first three days of the week was so great as often to prevent a sight being obtained of the prize animals without great difficulty. On the fourth day (Thursday,) the yard was thrown open to the public, free of expense, and the number

was so increased that no examination of any animal could be made.

The distribution of the prizes took place on the Thursday, in a pavilion erected especially for the occasion. This *salle* was splendidly decorated with the national ensign, and upon each supporter to the roof, the French, British, and Turkish flags were elegantly as well as complimentally grouped. The Minister of Agriculture arrived about two o'clock, and took his seat upon a raised dais at one side of the pavilion. On his right sat M. Monny, Principal of the Agricultural Department; and on his left, M. Lefebvre de Saint Marie, Inspector-General of Agriculture and Chief Commissioner of the Exhibition. Seats were likewise placed for the several members of the Commission, the foreign deputations, jurors, &c. The body of the pavilion was filled with the successful competitors, their friends and servants. Many elegantly dressed ladies were also present.

His Excellency the Minister of Agriculture opened the meeting with the following address.

"Gentlemen,—We shall to day celebrate our sixth anniversary of the *concours* of breeding animals. The first took place in 1850, and in a very limited manner.

By a decree of the 14th of June of that year an appeal was made to the French breeders. Some distinctions were made between the different departments of France, but none between the different breeds of animals. Two thirds of our provinces did not cooperate in that agricultural gathering.

This will not cause any surprise when it is remembered that the agitations produced by discontent then prevailed; the time had not arrived when a firm and devoted hand should revive the prosperity of the country. In 1851, three country meetings were held at Aurillac, Saint-Lô, and Toulouse, for the purpose of taking the necessary steps preparatory to the general *concours* at Versailles.

In 1852, the exposition considerably increased, the number of country meetings then amounted to seven. The animals were classed according to their breed, at the general meeting at Versailles; a greater number of medals were given

and the prizes raised to higher sums. The country strengthened, and confiding in the talented and energetic guidance of a beloved sovereign, received with eagerness the invitation addressed to it.

Each year has since been marked by an improvement. In 1853, meetings took place in the eight agricultural departments into which France is divided.

The prizes were again increased. Some special arrangements were made by which the animals that had been the most remarkable at the meetings of the departments were brought together at the general meeting; and thus there reassembled at Orleans, 421 animals from all parts of the country.

In 1854, the females of the bovine race, sheep, and pigs, were admitted, and some special prizes were given to poultry.

Lastly—Conformably to the wish expressed by the jury at Orleans, a general meeting was definitely fixed for Paris.

Happy and fortunate innovation, which with respect to France gives to this exposition its most complete development!

This year, gentlemen, a bold attempt has been made, and I hope you will agree with me that it has been crowned with success. The agricultural meeting has now become universal. To this appeal of France, addressed to persons of all countries who could usefully assist its object, England, Switzerland, Holland, and other countries, have nobly responded. Our neighbours! our rivals! and I thank them with gratitude, are associated with us in this noble act, and actuated by the same sentiments of sympathy and great liberality.

The pages of our catalogue are enriched with the names both of the noblest and most devoted protectors of agriculture, and the humblest cultivators. Visitors of all ranks of society have been eager to attend, and this meeting has become the most useful, the most complete, and the most experimental, which has ever been opened to agricultural zoology.

In one place, on the same day, sixteen hundred and eighty-four of the finest animals of the European breeds are found assembled together.

We have been enabled both to study and admire, in their most perfect types, the short-horned Durham breed, which fatten so readily, and are well adapted for crossing with some of our indigenous breeds, which have always been so numerous at our meetings.

The Hereford breed, which improves every day with respect to their aptitude to fatten.

The Devon, which, notwithstanding its diminished height, weighs so much, and whose flesh is so savoury.

The good milking breeds of Ayrshire and Alderney.

The Dutch, which, besides being excellent milkers, are good for slaughtering.

The Fribourg and Schwitz, so well represented at this meeting, are fine animals, and owe much to the rich pastures and vivifying air of the Alps.

From this comparative study, a law arises, namely, that the three qualities of furnishing food, milk, and undergoing labour, are rarely combined. The predominance of one of these qualities generally negatives the other two. Their union is, however, partially seen in some of our French breeds, those of Salers, Aubrac, and Parthenny, but it is usually attendant on cross breeding. We find, also, an analogous mixture of properties in the Courtoise, Limousine, and Agenaise breeds, as well as in the Charolais, which work, and yet fatten quickly.

I am anxious not to omit in this enumeration, those animals possessing special qualities; the Norman and Flemish breeds, which give abundance of milk and excellent meat, with regard to both quality and quantity; and, lastly, that beautiful Bretony breed, which, from its small size, might be taken for an animal of luxury, and which is the blessing of poor countries, yielding the largest amount of milk from the poorest food.

Time, the interests of breeding, the character of each country, and the public wealth, will determine the predominance of this or that quality, or their union, and the manner in which the improvements should be made. It would be improper in me to point out the course to be fol-

lowed, but all of us should carry from this place the conviction that rapid improvements and incessant progress are being made.

This conviction you have also received from the examination of the auxilliary species of the bovine race, namely, sheep.

You are convinced that if one would sacrifice to the claims of slaughtering the quality of the wool, excellent results would be obtained, either by increasing amongst us the best breeds of sheep, and in the place of the Merinos, having the Cotswold, and more particularly the Southdown, whose flesh is so firm, and of so fine a flavour; or by crossing some of our breeds with the Disley, and especially by improving some of our good old breeds, such as the Ardennes, Sologne, and Berry. You have lastly seen the possibility of obtaining cheap provision for the poor, by giving attention to the porcine race.

By encouraging especially the small English breed, which requires so little food, and yet are so rich in flesh, and are of such admirable precocity—by which each labourer's family may be supplied with better food, and almost without expense. Thus one of the most important problems of our time would be solved—"the production of good and cheap food."

At present, this question appears to be far from being settled; but let us not make ourselves uneasy on account of *temporary* dearness; these temporary sufferings must lead to permanent advantages.

Increased prices encourage production; from scarcity comes a day of abundance. After some fluctuations the level will be obtained, and the price fixed in such a manner as to satisfy the legitimate interests of the producer and the consumer. Then great benefits will be obtained. The food of the public will be improved. Agriculture will increase in power—the crops will be more abundant—she will gain that vital strength which multiplies of itself. The earth will become more fruitful; the country more animated.

I have said enough, gentlemen, on the characters and results of this meeting, which will in a few minutes receive the high honour of a visit from our sovereign.

Nevertheless, I wish to express to the gentlemen—the judges, my profound gratitude for the great impartiality and judgment they have shown in the accomplishment of their difficult task. I wish to express my sincere thanks to the Commissioner General, for the ability and care he has shown in this exposition. Lastly, I wish to express my pleasure in having obtained, through permission of the Emperor, the authority to lay down, from this time, for the years 1856 and 1857, some improved regulations for future meetings, and for future success. Next year this place will be opened to all products of agriculture, as well as implements. Let us not regret, gentlemen, having been this year deprived of these advantages, since they are brought together in a neighbouring palace. Let us, on the contrary, congratulate ourselves that it has been given to France, to invite civilised nations to the triple fête of Agriculture, Industry, and the Arts. Let us be contented that she has been able to display with so much power, the splendours of peace, at a time when she sustains the weight of a great war. That she has been able to give this brilliant evidence of her preference for a peaceful grandeur, even at the hour her military force is consecrated to the defence of the helpless and oppressed. Let us be proud to see her engaged in this great intellectual combat, and opening with *eclat* a peaceful tournament, in which Europe disputes the finest palms which the genius of science and arts can distribute; while her fleet, united with that of our generous ally, assails the shores of the Baltic, and rules in the two seas which wash the Crimea; while her noble sons, united with those of Great Britain, Piedmont, and Turkey, march courageously to the conquest, the only guarantee of peace, and from those distant shores, watered by their glorious blood, send to the heart of the anxious and triumphant country cries of devotion and victory."

After the delivery of this address, which was frequently interrupted by signs of approbation from the assembly, the prizes were announced. During the distribution, which occupied upwards of two hours, an excellent military band enlivened the proceedings by playing national airs. When

the name of Prince Albert was announced as a successful competitor, cheers burst from all parts of the salle; after which the band played "God save the Queen," the whole company standing.

The list of prizes was read over by MM. Tisserant, and upon the names of the different successful competitors being pronounced, they walked to the dais at which the Minister was seated, and received their ticket entitling them to the prize. The first name called was that of Lord Feversham: it was received with cheers. The names of the rest of the English, Dutch, and Swiss prize-takers were also received in the same kind manner. Mr. Jonas Webb was called upon so often that his reception towards the close was quite enthusiastic. A special medal of large size is to be struck for this true representative of the English farmer. One very young lady, of a pretty blonde complexion, was also loudly cheered on her ascending the dais to receive a prize. The same compliment was conferred on a Dutch farmer, who presented himself wearing a chain around his neck, to which was suspended some dozen medals, which he had obtained by the superiority of his cattle. The most interesting part of the ceremony was, however, that when the servants received their prizes. The honest blunt English shepherds approached the dais for their medals amid loud cheering. The medals are of silver, and beautifully carved, having upon one side the likeness of the Emperor, &c.

The total value of the prizes was considerable. There were, for male cattle, prizes of from 1000 francs to 600 francs, and for females from 700 francs to 400 francs. For sheep, for males, from 600 francs to 400 francs, and for females smaller premiums. Besides several classes of prizes for pigs, there were for poultry prizes of 100 francs down to 20 francs. In all, about three hundred prizes were awarded, besides the *mention honorable*. Of the successful competitors from England and Scotland, there were nearly sixty. They carried off nearly all the premiums for Durhams, Herefords, and Devons; the same for the Leicester, Cotswold, and a considerable proportion of the Southdown sheep. For pigs

they also obtained most of the prizes, and the same as to the poultry.

The whole outlay of the French government is estimated as amounting to 300,000 francs; the great proportion of which was expended in premiums.

After these proceedings had terminated, the Emperor entered the showyard, and was received by the Minister of Agriculture and other officials, and the members of the deputation, in the anteroom connected with the pavilion, and subsequently to their introduction, they accompanied his Majesty through the yard. His Majesty remained about an hour, going through the different rows of sheds, and looking at the different animals, as his attention was directed to them. Almost at the same time the Emperor left the showyard, the Empress entered, remaining in the carriage, which was open, and which was driven slowly through between the different rows of sheds. Her Majesty chatted familiarly with one or two ladies whom she recognized in the crowd, and shook hands with an elderly person in the most affable manner. The reception of her Majesty was most cordial, as was also that of the Emperor. Her Majesty returned the expressions of esteem by a gentle inclination of the head. The Emperor was more reserved, only occasionally taking off his hat and bowing to the people, except when the hearty cheers of the English met his ears on his departure.

The demand for the purchase of the English stock was, upon the whole, very satisfactory; and fair prices were given for good animals for breeding. Indeed it may be questioned if there were ever as many animals sold at any meeting of the National Societies in the United Kingdom, and at such good prices. The shorthorns were in most demand. Mr. T. Ball, Ireland, sold the three heifers he exhibited at the average price of £120 each, the best being sold for £160. Nearly all the Herefords and Devons were disposed of. The best ram of the Cotswold breed was sold to a French nobleman for £30; the first three prize ewes for £20 each, they returning into Kent. Tups of average quality brought from £10 to £20. Several of the best Leicester sheep were not sold,

partly from the high price asked, and partly because some were not for sale. Mr. Crisp obtained £50 for his South-down ram, and £10 each for twenty ewes.

The prices asked for the Fribourg and Schwitz cattle were fully equal to that demanded for shorthorns. As much as £68 was refused for an indifferent bull of the Fribourg breed, and he was again taken back to Geneva. Two cows from the same district were purchased by a small proprietor within six miles of Paris for £31 each, and these were considered a bargain. Higher prices were refused for cows of the Schwitz breed, and many of these were taken back to Switzerland, a distance of about 600 miles; and this these cows had accomplished on foot, shod, of course, but they were active, and not apparently injured by the journey. They are structurally well adapted for travelling.

The pigs were in great demand, scarcely one animal returning to England. The first-prize boar, of the small breed, was sold for £45. The same price was obtained for the first-prize sow. Mr. G. Jesty, Woodlands, Surrey, sold a sow for £19, and an indifferent boar pig for £8.

Of the attention bestowed upon foreign exhibitors and other gentlemen connected with the deputations from the three national societies in the United Kingdom, it is impossible to speak in too high terms. Fêted night after night by such gentlemen as the Count de Grouchy and the Minister of Agriculture; invited by the Prefect of the Seine to a dress ball of the grandest description, and by the French noblesse to their country residences to view their estates; met in public and in private with the urbanity and politeness for which the French are conspicuous—there are few who participated in all this who will forget their visit to the French International Agricultural Exhibition of 1855.

Indeed, the English deputation felt it impossible to leave Paris, after the cordial reception they had experienced, without expressing, in an address to his Majesty the Emperor, their heartfelt thanks for the honour done them; and as several members of the Royal Societies of Agriculture of Scotland and Ireland were present at the meeting convened

for this purpose, it was determined to present a joint address to the Throne, commemorative of the event, and conveying the sentiments of all upon the success of the exhibition.

The address was couched in the following words:

"*To his Imperial Majesty, Napoleon III, Emperor of the French.*

"May it please your Majesty:

"We, the members of the deputations, appointed by the three Royal Agricultural Societies of the United Kingdom of Great Britain and Ireland, to represent the respective societies at the recent Exhibition of Animals in the city of Paris, beg leave humbly to approach your Majesty with sentiments of the most profound respect, and to assure your Majesty that we have assisted with the deepest gratification at the inauguration of this first international meeting held under the Imperial auspices.

"The liberal prizes offered, the urbanity displayed by his Excellency the Minister of Agriculture, Commerce, and Public Works in their distribution, and the excellent address delivered on that occasion, have given universal satisfaction, and cannot but have the best effect in stimulating the different individuals who have been recipients of the Imperial bounty to greater exertions, and must lead eventually to the due acknowledgment and appreciation of the peculiar excellences appertaining to the agricultural products of each individual nation.

"We have humbly to thank your Majesty for the gracious reception accorded to us, and to assure your Majesty that the alliance now subsisting between the Empire of France and the United Kingdom of Great Britain and Ireland, is to us a source of the liveliest satisfaction, as affording to the world the best guarantee for the furtherance of liberty and good government, and the advancement of civilization.

"In humbly taking our leave of your Majesty, we sincerely pray the Almighty that your Majesty may be long spared to reign over a happy and contented people.

"WILLIAM MILES,

"President of the Royal Agricultural Society of England, and Chairman of the United Deputation."

The address was left in the care of the British Ambassador for presentation to the Emperor, it being found impossible for the deputation to remain in Paris until the necessary forms were gone through for them personally to present it; and thus ended their visit to the French capital.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, May 13, 1855.

Present—Messrs. Braby, Cherry, Dickens, Ernes, Field, Gabriel Professor Morton (Treasurer), Jex, Pritchard, Robinson, Stockley, Silvester, Turner Wilkinson, and Withers; Professors Spooner and Simonds.

On the motion of *Prof. Spooner*, seconded by *Mr. Gabriel*, Mr. Field took the chair.

The minutes of the previous meeting were read and confirmed.

Prof. Spooner proposed the election of Mr. Stockley as president for the ensuing year.

Mr. Ernes seconded the motion.

Mr. Silvester suggested that Mr. Field should be re-elected, in consideration of the admirable manner in which he had discharged the duties of his office during the past year.

Mr. Gabriel proposed the election of Mr. James Turner.

Mr. Robinson seconded the nomination.

A ballot was then taken, and the votes were as follows:—

Mr. Stockley	7
Mr. Turner	7
Mr. Field	1

The President said he had voted for Mr. Turner, and he declined giving any casting vote, whether he had the power to do so or not.

A discussion then took place as to whether, the votes for Mr. Turner and Mr. Stockley being equal, the election should be decided by lot, or by another ballot; it being suggested that, in the latter case, the gentleman who voted for Mr. Field (Mr. Silvester, as was understood) should vote for Mr. Stockley or Mr. Turner.

Mr. Silvester, believing that such a method would only be informal, said he should decline to vote at all, but he would, in order to overcome the difficulty, propose the re-election of Mr. Field.

Prof. Spooner concurred in the suggestion, and seconded the nomination.

Another ballot was accordingly taken, the result of which was:

Mr. Field	11
Mr. Stockley	2
Mr. Turner	2

Mr. Field was accordingly elected. In returning thanks, he said he should endeavour to fulfil the duties of his office as efficiently as he could, and, he hoped, to the satisfaction of the Council.

The following gentlemen were then elected Vice-Presidents for the ensuing year: Messrs. Walton Mayer, H. Hallen, W. Cheeseman, R. Bowles, J. Hargrave, and J. Fryer.

Mr. Gabriel was unanimously re-elected Secretary.

Mr. Wilkinson gave notice of motion respecting the Scotch portion of the Board of Examiners.

SPECIAL MEETING OF THE COUNCIL, May 25, 1855.

Present—The President; Messrs. Cherry, Cheeseman, Ernes, Hallen, Jex, Mayer, Peech, Robinson, Silvester, Wilkinson, Withers; Professors Spooner, Simonds, and Morton; Assistant-Professor Varnell; and the Secretary.

The President in the Chair.

On the motion of *Mr. Mayer*, seconded by *Mr. Gabriel*, Messrs. Braby, Ernes, Jex, Simonds, and Wilkinson, were elected as the Finance Committee.

On the motion of *Mr. Silvester*, seconded by *Mr. Robinson*, the members of the House Committee, consisting of Messrs. Field, Spooner, Morton, and Ernes, were re-elected.

The members of the Registration Committee, consisting of Messrs. Simonds, Morton, and Wilkinson, were, on the motion of *Mr. Field*, seconded by *Mr. Withers*, re-elected.

A conversation followed as to the reappointment of the Exemption Bill Committee, when it was decided on the motion of *Mr. Mayer*, seconded by *Mr. Cherry*, that as no immediate steps were likely to be taken, the whole Council should constitute a Committee for the ensuing year.

On the motion of the *President*, seconded by *Mr. Wilkinson*, Mr. Gabriel was unanimously re-elected Registrar for the ensuing year.

The question of the allowance to the Secretary was then brought forward, and after a lengthened conversation on the

subject, in which every one present took part, it was closed by Professor Spooner remarking that all present were agreed that the Secretary was entitled to be much better paid than he now was if the state of the funds permitted it, and that as soon as they did, a more liberal allowance should be granted to him. It was then decided, on the motion of *Mr. Robinson*, seconded by *Mr. Mayer*, that the allowance to the Secretary be the same as last year, namely £60.

It was moved by *Mr. Ernes*, and seconded by *Mr. Cherry*, that £20 be allowed for the petty cash account for the ensuing year.

Notices of motion relative to the Board of Examiners were given by *Professor Spooner*, and *Mr. Mayer*.

Messrs. Silvester, Jex, and the Secretary, were named by the President as the Committee of Supervision for this and the preceding Meetings, and the proceedings terminated.

The following notices of motions are suspended for the required period of three months, in the Council Room.

By *Mr. Wilkinson* :—

To reform the Edinburgh Moiety of the Board of Examination.

In Bye-Law No. 27, to leave out the figures £10 10*s*., and substitute £7 as the fee of Admission.

That the Board of Examination, which has existed under the authority of the Highland Agricultural Society, shall have a (retrospective) legality conferred upon it, in order that Veterinary Surgeons holding the Diploma of that Board may become Members of the Royal College of Veterinary Surgeons, under certain conditions.

By *Professor Spooner* :—

That the Bye-Laws 29 and 30 be altered to the following effect: that the Board of Examiners, instead of being divided into four sections, as at present, be divided into three only; *a*. Chemistry and Materia Medica; *b*. Anatomy and Physiology; *c*. Pathology of the Horse, Cattle, &c.

That each student, instead of being examined by each section for a quarter of an hour, have his examination extended to not less then twenty minutes.

By *Mr. Mayer* :—

That Bye-Law 24 be altered to "The Principal Veterinary Surgeon to the Army, and the Senior Veterinary Surgeon to the Ordnance shall be ex-officio members of the Examining Board for England and for Scotland.

That Bye-Law 29 be altered to "The Court shall form themselves into four divisions,—one on Chemistry, Materia Medica, Veterinary Medicine, and Pharmacy; one on the

Anatomy, Physiology of the Horse, Ox, Sheep, Pig, Dog, and other domesticated animals; one on the Pathology and Treatment of the Horse, the principles of shoeing, and the practical duties of the Profession; one on the Pathology of the Ox, and other domesticated animals; and that the time occupied at each table by the examiners be not less than twenty minutes.

THOMAS JEX,
F. R. SILVESTER,
E. N. GABRIEL.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

RUSSIAN CATTLE DISEASE.

AT a meeting of the Council held, on the 27th June, attention was called to the circumstance that Lord Berners had stated to the Council at their previous week's meeting, that he had seen a notice in the *Press* of that week, of a cattle-pest in Russia of so virulent a character, that the Prussian government had interdicted the importation of cattle, hides, fat, wool, hair, and even of herdsmen, from that empire into the Prussian dominions. Lord Berners had, on the previous evening, named this report to the Earl of Clarendon in the House of Lords, when his lordship at once expressed his willingness to render every service in his power in reference to a subject of so much importance to the agricultural interest of this country, and stated his intention of at once instituting the requisite inquiries by despatches to be conveyed on the following morning by a special messenger to Berlin. The Earl of Clarendon requested Lord Berners to assure the Council of the Royal Agricultural Society of England, that on this subject, and on all others which came within the control of his department at the Foreign-office, it would at all times give him the greatest satisfaction to receive and endeavour to carry out their wishes. The following communications have already been made to the Council in reference to this cattle-plague.

"Lord Wodehouse presents his compliments to the Secretary to the Royal Agricultural Society of England, and is directed by the Earl of Clarendon to acquaint him, for the information of the President and Trustees, that his lordship's attention having on Tuesday last been called by Lord Berners to an article in the *Press*, stating that the cattle-plague had

broken out in Russia, and that severe precautionary measures had in consequence been taken in Prussia, he instructed her Majesty's Minister at Berlin to inquire and report upon the subject. Lord Bloomfield states in reply, by the telegraph, that Baron Manteuffel, the Prussian minister of state, expressed his belief that measures of precaution against infected cattle had been taken by local Prussian authorities on the Russian frontier, but his Excellency was not informed as to details, and would make inquiry.

FOREIGN OFFICE; *June* 22, 1855."

"FOREIGN OFFICE; *June* 26, 1855.

"Sir,—With reference to my note of the 22d inst., I am directed by the Earl of Clarendon to transmit to you, for the information of the President and Trustees of the Royal Agricultural Society, copy of a despatch from her Majesty's minister at Berlin, containing information relative to the precautionary measures established in Prussia, in consequence of the malady lately broken out in that country amongst the cattle.

"I am, Sir,
Your most obedient humble servant,
"WODEHOUSE.

"The Secretary to the Royal Agricultural Society."

(Copy.)

"BERLIN; *June* 23, 1855.

"My Lord,—In consequence of the prevalence of disease among cattle in Russia and Poland, the Prussian local authorities on that frontier have felt themselves called upon to put in vigour certain precautionary measures to prevent the spread of this malady, which they are authorised to do by the Prussian law of March 27, 1836, of which I inclose to your lordship herewith a copy in original, with a translation of the 3d article, which empowers the local provincial authorities, in cases where the disease may appear within three miles or less of the frontier, to prohibit the importation of all species of horned cattle, as well as of any articles likely to carry infection, and I am informed that this measure has been lately resorted to by the Prussian local authorities on the whole line of the frontier. I understand from Baron Manteuffel that no case of disease has yet made its appearance in this country.

"I have, &c.,
(Signed) "BLOOMFIELD.

"To the Earl of Clarendon."

(Copy.)

"The above measures are to be more strictly observed if the murrain has broken out in the vicinity of the frontiers. If an infected place in a foreign country is only three miles or less from the frontier, then it is positively forbidden along a certain extent of frontier, to be marked out by the provincial authorities, and in any case along the extent that lies so near to the place infected, to admit—

(*a*) Horned cattle, sheep, swine, goats, dogs, and poultry, fresh skins of bullocks and of other animals, horns, and unmelted tallow, beef, dung, winter fodder, and stable implements of any kind.

(*b*) Also raw wool, dry hides, and the hair of animals (bristles excepted) are excluded, if there is reason to believe that they come from an infected place.

(*c*) Only to allow such persons to pass without molestation who, according to their circumstances, cannot be supposed either to have been in any infected place at all, or, even if they have been there, in any way to have come in immediate contact with infected cattle. All persons, on the contrary, who, according to their circumstances, may be supposed to be occupied and to have intercourse with cattle, such as cattle and leather dealers, butchers, tanners, skinners, are refused admission; or they must, when very cogent reasons are brought forward for their admission, previously submit to a careful purification, to take place under the superintendence of the police. The provincial authorities are moreover empowered to enforce the application of these measures, even when the infected places lie *five* miles beyond the frontiers.

"This must, in every case, happen when a brisk and accelerated trade in the above-named articles takes place by means of turnpike roads or communication by water between the infected places and the inland, or when the contagion in the interior of the foreign country has spread itself to a great extent. In cases of this kind, and especially when the spreading of the contagion in the foreign country propagation makes rapid progress, or when other dangerous circumstances happen, then these measures are to be enforced, even when the disease prevails at a distance of more than five miles."

The Council expressed their deep sense of Lord Clarendon's warm and effective interest in promoting the objects of the Society, and the welfare of the agricultural community.

At a subsequent meeting of the Society it was favoured

with the following further communications from the Foreign Office:

"FOREIGN OFFICE; *July*, 6, 1855.

"Sir,—With reference to my letter of the 26th ultimo, respecting the precautionary measures adopted by the Prussian authorities on the Polish frontier against the spread of the cattle-disease stated to be prevalent in Russia, I am directed by the Earl of Clarendon to transmit to you, to be laid before the president and trustees of the Royal Agricultural Society, a copy of a despatch* from her Majesty's minister at Berlin, inclosing a report from the British vice-consul at Memel on the same subject.

I am, Sir,

Your most obedient, humble servant,

WODEHOUSE.

The Secretary to the Royal Agricultural Society, &c."

(Copy.)

No. 272.

"My Lord,—With reference to my despatch, No. 246, of 23d inst., relating to the prohibition of importation of cattle, &c., from Russia across the Prussian frontier, I have the honour to forward to your lordship herewith a copy of a report on this subject from Her Majesty's vice-consul at Memel, from which your lordship will perceive that there are doubts as to the existence of disease among cattle in the provinces adjacent to the district in which Mr. Hertslet resides, and that other motives may possibly have led interested parties to cause the importation of cattle into Prussia to be forbidden.

I have, &c.,

(Signed) BLOOMFIELD.

"The Earl of Clarendon."

Extract from Mr. Vice-Consul Hertslet to Lord Bloomfield, dated

"MEMEL; *June*, 27, 1855.

"The export of cattle from Russia meets with no obstacles from the Russian side, but merely from the Prussian authorities. Live cattle are compelled to go through a three weeks' quarantine at the borders, although the butchers have produced bills of health from the Russian authorities of the 'Hauptman's Gericht' of Hasenpotf in Courland, and al-

* Lord Bloomfield's, No. 272, June 30, 1855.

though it is a well-known fact that no cattle disease of any sort has been prevalent at any places near the borders for many years. There is a report that some disease had appeared at Johannisberg, the border town opposite the Prussian Stallapahnen; but this is not believed. I am informed that a Prussian official is about to proceed to Courland to make the necessary inquiries.

According to official information, the murrain (cattle-plague) continues to advance from Russia towards the Prussian frontier. The government has therefore, according to the instructions in sec. 3 of the Order 27th March, 1836, resolved as follows:

[These instructions were printed in the previous report on the Russian Cattle Disease.]

In order that these regulations may be duly observed, it is only allowed to cross the frontier in this district at the custom stations of Nimmersatt, Bajohren, Langallen; and Paschkenkrug.

The Provincial Counsellor,
(Signed) DIECKMANN.

"MEMEL, 28*th May*, 1855."

Veterinary Jurisprudence.

NORTHAMPTON.

(*Before Mr. Justice* COLERIDGE *and a Special Jury.*)

HEWITT *v.* BATTAMS.

Mr. Serjeant Miller and Mr. Field were counsel for the plaintiff; Mr. Mellor, Q.C., and Mr. O'Brien for the defendant.

This cause excited a good deal of interest among the sporting men of this neighbourhood.

The plaintiff is an attorney at Northampton, and also a man of some experience in the buying and selling of horses, in which respect he was at least equalled by the defendant, a large farmer residing at Carlton, in Bedfordshire. It appeared that in the middle of December last the plaintiff, wanting to buy a hunter for his son, went to Snelson, in Bedfordshire, to see a gray horse belonging to the defendant, but did not succeed on that occasion, as the defendant's son had him out hunting on that day. An appointment, however, was made to meet at Wellingborough station on a subsequent day; and on that day the defendant's son rode the horse over to Wellingborough; and both the

plaintiff and his son were so well pleased with his paces, that, after some little negotiation, they agreed to give £100 for him, the defendant warranting him sound. On that occasion he was ridden both by the plaintiff's son and the defendant's son, and they both took him over a fence. The plaintiff and his son observed that the horse "dropped," but they supposed, and the defendant's son said, that it must be carelessness. They also called attention to a swelling above the knee of the off fore leg, but young Mr. Battams explained that he had been "thorned," but that it was of no consequence. The horse was accordingly sent to Northampton, and was ridden out for a couple of miles on the following day, the 19th of December. On the 22d he was taken out hunting, and ridden eight miles to cover; but the running was not severe. On the 26th he was again taken out, and again on the 1st of January. On the latter day he fell in taking a fence, having, as his rider, Mr. Hewitt, jun., supposed, crossed his legs; but he came down on his near side, and did not, at all events at the time, appear to have hurt himself, for he got up immediately, and carried Mr. Hewitt throughout the day's run. In the evening, however, Mr. Hewitt observed that there was a slight stiffness in the off fore leg, and, the horse afterwards becoming decidedly lame, Mr. Garrett, the veterinary surgeon, was called in, and pronounced him to be unsound. Thereupon the defendant was requested to take him back; but, that having been declined, he was afterwards put up to auction, and sold for £49 7*s*. The present action upon the warranty was then commenced to recover the difference of price and expenses; and for the purposes of the trial the horse had been submitted to the judgment of many eminent veterinary surgeons, who were examined as witnesses on each side. The two chief points of dispute were these:—The plaintiff's witnesses stated that the horse had corns on both feet, and particularly on the off fore foot a bad corn, which must have been there at the time of the sale. The defendant's witnesses, to the number of nine, swore that they had often seen the horse's feet, and that it had no corns. The plaintiff's witnesses also attributed the lameness to the swelling above the knee noticed at the time of the sale; while the defendant's witnesses deposed that the injury which had occasioned that swelling had been completely cured, and that the lameness arose from the fall which the horse met with on the 1st of January. Mr. Mavor, gave strong evidence on this point. He had observed on the off fore leg below the knee symptoms of the recent formation *of a splint*, and he explained that, although

ultimately a splint might not interfere with the action of the horse, it would in the process of formation occasion lameness. It might be produced by a blow or a strain, causing at first heat and tenderness, and consequent lameness for a time; and he was of opinion that in this way the lameness was to be attributed to the fall on the 1st of January. The previous history of the horse during the period when it was in the defendant's possession was proved in considerable detail, and it appeared certainly that in the spring of 1853, from being "thorned," or some other cause, he fell very lame, and underwent a good deal of medical treatment, but that he recovered, and went through the following hunting season very cleverly, and had continued to do his work well up to the time of the sale. Since the sale by auction the defendant had got possession of him again, and the plaintiff had called upon the defendant to produce him for the inspection of the jury, but this had not been done, and the case therefore depended entirely upon the conflicting evidence of the medical and other witnesses.

The learned *Judge* summed up the evidence on both sides as it bore upon each of the two alleged causes of unsoundness, but intimated his opinion that the defendant's case ought not to be prejudiced by the non-production of the horse, as probably an inspection by the jury would not enable them to decide the case so satisfactorily as if they were guided by the evidence of experienced and competent witnesses.

The trial occupied the whole day, and the jury having retired to consider their verdict, and remained in deliberation some time, conveyed to the learned judge an intimation that they were not likely to agree.

His Lordship informed them that unless they could agree they must remain there all night. They were ultimately discharged without giving a verdict.—*Times.*

STUBLEY *v.* WOOLEY.

Communicated by Mr. R. Metherell, M.R.C.V.S., Spalding.

This case was recently tried in County Court at Spalding. The plaintiff purchased of defendant, in the market, a cow, which he (defendant) verbally warranted "all right." On driving her home, the plaintiff noticed her to cough several times, and found afterwards that she was a delicate feeder. Being consulted, I certified to the existence of a chronic

pulmonary affection. This led to a trial for the difference between the original purchase and the price obtained by the re-sale of the animal by auction, and which amounted to about six pounds.

The defence set up was, "that the animal *was sound*," and "that the return of neat stock after being purchased *was not customary*."

His Honour said that a warranty had been given by defendant, that the unsoundness of the animal had been clearly and satisfactorily proved by plaintiff's veterinary surgeon, and that the second plea of the defence was fallacious. A warranty on the sale of a beast, sheep, or other animal, though not so commonly given as with horses, is occasionally; and it constitutes equal protection to purchasers from imposition and fraud.

The jury found a verdict for *Plaintiff*.

ARMY APPOINTMENTS.

Mr. William Partridge has been gazetted as Veterinary Surgeon to the 17th Light Dragoons in the place of Mr. W. Gavin, deceased.

Messrs. Christopher Sanderson, and Henry William Sparrow, are also gazetted as Veterinary Surgeons to the Royal Artillery.

Messrs. Henry Dawson, Thornton Hart, and D. S. Hinge, are appointed to Depôts.

Mr. Thomas Walton Mayer having been selected by the government to proceed to Hungary to purchase horses for the army, is to have "the local rank of Veterinary Surgeon" as attached to "the Turkish Contingent." Also, Mr. Samuel Thomas Goddard, vice G. H. Morton, whose appointment has been cancelled.

OBITUARY.

Died, June 23d, 1855, at Henham, Essex, in the forty-second year of his age, Mr. John Titchmarsh, M.R.C.V.S.

Mr. Titchmarsh obtained his diploma at the Royal Veterinary College in 1833, and succeeded to his father's business, which had been established many years, conducting it in such a manner as to merit and obtain the respect and esteem of his employers. The immediate cause of his death was *phthisis pulmonalis*, brought on by exposure to the night air during the past inclement winter. He was not married, but he has left many to regret his loss, being a sincere friend, and very charitable to the poor in his neighbourhood.

THE

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Communications and Cases.

THOUGHTS ON THE HISTORY OF THE DISCOVERY OF THE BLOOD'S CIRCULATION,

In a Letter to the Editors of the 'Veterinarian.'

From Joseph Sampson Gamgee,
Assistant-Surgeon to the Royal Free Hospital; President of the Medical Society of University College.

Gentlemen,—The numerous and heavy duties which have prevented the publication of my announced work on the 'History of the Discovery of the Blood Circulation,' still force me to sacrifice this one of the most favorite objects of my predilection. But I gladly obey your call to embody in the epistolary form some reflections in point; for while I shall thus be relieved of the manacles which fetter the didactic writer, I shall in addressing you enjoy the satisfaction of submitting to the thoughtful, material for reflection, on one of the most interesting topics in the whole history of learning.

It is more than probable that if any assembly of medical men were questioned as to Harvey's claims to be considered the discoverer of the blood's circulation, the individuals would be singularly few, who could give any better reason than that they had traditionally learned to venerate him as possessing those claims beyond dispute. It is the evidence for this tradition that I have undertaken to examine.

Now, that the voice of the masses has decreed immortal Harvey's memory, and ranked him with Copernicus, Columbus, Newton, Galileo, and the few others who, by the discovery of great facts and truths, have rendered themselves dear to men throughout all time, it savours of arrogance to question the justice of the universal verdict.

Let judgment be suspended.

It would be interesting to narrate the strange notions of the blood's movements entertained by the Platonic and Aristotelian school, which flourished in the Attic metropolis; to trace their slow yet decided progress in the Alexandrian school under Erasistratus; but the time required for the narrative of such antiquarian research is not at my disposal. A like reason prevents me dwelling upon the teaching of the elder Pliny, and of the Galenic school, which flourished for so many centuries under the Ægis of its great founder's name, with but immaterial innovation.

Idle would it be to attempt to follow up the narrative in mediæval darkness, and little more profitable to watch the twinkling of resuscitating light in the thirteenth century, coëtaneously with the foundation of the first university,—that of Bologna. I shall at once pass on to the middle of the sixteenth century, when the great work of Vesalius appeared.

By denying the existence of any communication through the septum, between the two sides of the adult heart, that great anatomist removed one great source of error; but it is undeniable that many inaccuracies pervaded his notions of the blood's flow, and that he had no perception of its constant motion in a circle. To Michael Servetus, famed in the theological world as the fortunate eluder of the flames of the Inquisition, the unhappy prey to the fury of the Genevan fanatics, appears due the merit of first suggesting the pulmonary circulation. Its demonstration was fully completed a few years afterwards, viz., in 1559, in the work 'De Re Anatomica,' of Realdus Columbus, from Cremona; so perfect, indeed, that Harvey has scarcely added anything to it. But some gross anatomical errors hid from the view of Columbus the blood's circuitous track through the systemic vessels, that circle in particular, which Harvey is reputed to have discovered; but the passage in the work of Carlo Ruini, of which I append a translation, proves that not only was the pulmonary circle perfectly known, but the systemic, to a great extent, understood, in the year 1598, the year of Ruini's publication, and of Harvey's passage from the halls of Cambridge to devote the vigour of his youth to the study of medicine in the University of Padua.

To my friend Ercolani, of Turin, is due the merit of first calling attention to Ruini's extensive knowledge of the blood's circulation. I cannot agree with him, however, in the wholesale detraction from Harvey's merit. Truly less belongs to our great ancestor than the common

voice has decreed his rightful heritage; but he did enough to command respect as one of the most illustrious experimental philosophers of any age and country. What precisely are Harvey's claims, what those of Fra Paolo Sarpi, Caesalpinus, and others, who have been undeservedly raised to the position of his rivals, I must leave for consideration in a work which I trust will not be much longer delayed.

I would gladly indulge in lengthy comment on the very great merits of Ruini's work, but I must be satisfied with congratulating your profession upon having ranked among its members a man so distinguished as he was, and ever must be regarded, for the originality of his mind, and pre-eminently for its philosophical mould.

Pardon this sketch, no one regrets its incompleteness more than does

Your grateful and obliged servant.

Speaking of the heart's functions, at page 108 of the second book of his 'Anatomy of the Horse,'* Ruini says:—"The function of the ventricles is, of the right one, to dispose of the blood that the spirits of life may be generated and the lungs nourished; of the left, to receive this blood, already disposed, and convert a portion into the spirits which give life, and send the remainder with the spirits to all parts of the body. In either ventricle are two mouths or foramina; by those of the right, the blood enters from the vena cava, and goes out by the arterial (pulmonary) vein; and by those of the left ventricle, the blood, with the air prepared in the lungs, enters by the venal (pulmonary) artery, and being made all spirituous, and most perfect in the left ventricle, goes, guided by the great artery (aorta), to all parts of the body, except the lungs, to participate to them (to the parts of the body) that heat which life imparts to it. At each of the openings of the heart are three little membranes, called by the Greeks 'Hostioli;' some of these open towards the interior, others to the exterior; at the first opening in the right ventricle, for the great vein or cava is a slender membrane which surrounds the orifice all round, and which, extending into the ventricle, divides into three parts, each part terminating as if in the point of a triangle; a little above the middle of the ventricle, and from each of the points, arise certain nervous filaments (he means the tendinous cords), which go to insert themselves in the walls of the ventricle towards its lower part, on the membrane, or attached to the

* 'Anatomia del Cavallo, Infermità e suoi Rimedii,' del Sig. Carlo Ruini, Senator Bolognese, in Venetia, 1599.

filaments of the membranes, and to the heart's substance. These membranes were there placed by nature that on opening, as the heart dilates, they should let the blood enter from the great vein (vena cava) into the right ventricle, and when the heart contracts, by closing the aperture, prevent that the blood entered therein by the great vein should not return from the arterial vein, and re-enter the great vein. The membrane which is at the second opening of the right ventricle, where is attached the arterial vein, is not simple, but divided into three distinct ones. . . . . .

. . These three membranes allow the blood to flow through the arterial vein to the lungs, and prevent that the blood should regurgitate into the left ventricle when this dilates. Almost in the same manner as with the first aperture in the right ventricle, is another membrane at the corresponding opening in the left ventricle, from which arises the venal artery, except that it is not divided into three parts but only in two; they are very wide above, and pointed below, their apices coming further down in the left than what is seen in the right ventricle, and the membranes are large and stronger in the left than in the right. The one membrane occupies the right side of the ventricle, and the other the left. Their office is when the heart dilates to allow the blood and the spirits to enter the left ventricle from the venal artery, and when the heart contracts to prevent that blood returning into the venal artery. To the three membranes of the second orifice of the right ventricle correspond the three which are placed at the mouth of the second hole of the left ventricle, to which is attached the great artery; the great artery being larger than the arterial vein. These membranes, when the heart contracts, on opening, allow the vital spirit with the blood to flow out, and go with impetus into the great artery; and when the heart dilates, they prevent, by closing the aperture, that the spirit and the blood re-enter the ventricle."

CASE OF DIFFUSED TUBERCULAR DEPOSITIONS.

By T. Stanley, M.R.C.V.S., Edmonton.

Dear Sir,—On the 22d of February last, I was requested by a gentleman, living in Hertfordshire, to see an aged brown gelding, used for hunting, which had a deep-seated abscess near the anus, and also a large malignant tumour on the top of the upper third of his tail.

The history given me of the case was, that three months previously, an enlargement, supposed to be a small wart, was sloughed off by ligature, and afterwards the tumour presented itself, accompanied with much discharge.

On Friday, April 6th, spontaneous bleeding from the tumour took place, and on the following Tuesday, the 10th, the veterinary surgeon that had attended him was sent for, and he recommended the horse to be sent to my infirmary at Edmonton. The bleeding had then ceased. It was thought the horse had lost about three parts of a pailful of blood.

On the 12th, I removed the tumour, while the animal was under the influence of chloroform, and for the first fortnight the wound appeared to be doing well, but afterwards the granulations became unhealthy. I therefore applied the actual cautery over the surface of the wound, and subsequently antiseptic poultices were resorted to. From the state of the wound, I found it necessary to vary the excitants, using both the sulphate and the chloride of zinc, also the nitrate of silver and nitric acid, and again and again applying the actual cautery, without obtaining the desired effect. My report to the owner was therefore unsatisfactory.

On June 4th, he came and saw the horse, which he found to be in good condition, and expressed himself satisfied on that head. I, however, told him I considered the disease constitutional and incurable, but he wished me to keep him under treatment still longer. On the 20th, I received a note from him, stating that should I think proper to return the brown horse, to send needful directions as to what was to be done to his coachman, as he was going from home for some days. As the distance was fifteen miles, I had the horse gently exercised, after which the animal appeared greatly distressed, and the system began to sympathise. Several indurated swellings likewise made their appearance about the back, loins, and hind quarter, and also œdematous swellings about the chest and sheath. The *vis a tergo* of the blood in the jugular veins was rapid, and the pulse 48, but I could not feel the action of the apex of the heart against the ribs. The animal never showed symptoms of the acute stage of disease of the lungs; but on the 25th, I wrote to the owner, stating that the action of the heart and lungs was so embarrassed, that I feared suffocation would take place, and if the horse were not destroyed, he would soon die. I therefore wished him (the owner) to come and see the state the animal was in. To prolong life till I received an answer, I tapped the chest, and drew from it twenty-two quarts of fluid, quite clear, and

free from lymph. On July 3d, the reply to my note was—if the horse was not dead, to have him killed immediately.

On July 5th he was destroyed, and on opening the abdomen there were several enlargements found to exist on the peritoneum, and the liver was also quite studded with them. The diseased viscera of the chest, which I sent to you, weighed 43lb. I beg to add, that your remarks upon them will much oblige,

Dear Sir,

Your obedient servant.

PROFESSOR SPOONER.

[We have been favoured with the following description of the diseased viscera:

"The morbid parts sent to the College by Mr. Stanley had become partially decomposed before they were examined. Nevertheless, we were enabled to make out the changes that had taken place tolerably well.

"The pleura pulmonalis, as well as that portion of the membrane which covers the fibrous pericardial sac—which was very much thickened —was covered with fibrous tumours of various sizes; occupying as much space in the thorax as the heart itself. These tumours, especially those around the base of the heart, were clustered together something like bunches of grapes; many of them, however, were as large as small apples. Those connected with the pleura covering the lungs, were found not to involve the structure of the lungs, but to be simply adherent to the serous membrane and its subcellular tissue.

"The bronchial lymphatic glands were much enlarged from external as well as interstitial deposit.

"On making a section of these tumours, their character, as viewed by the naked eye, was perceived to be fibro-cellular. The microscope developed large nucleated cells, of an irregular ovoid in form, with only a very few elongated nucleated cells.

"I am doubtful of the disease being cancerous in its nature. Still there are some features about it which make it rather suspicious; such as the striated appearance of the cut surfaces of the tumours; the unhealthy state that the one on the tail assumed when it was interfered with by an operation; the character of the cells as seen microscopically; and likewise, the disposition of the tumours to form in so many parts of his body. There can, however, be no doubt of the disease having been constitutional in its nature."]

DESTRUCTION OF AN ELEPHANT.

By E. Price, M.R.C.V.S., Birmingham.

Gentlemen,—The destruction of an elephant by artificial means being a novelty, I make no apology for forwarding to you the following detailed statement, which I hope will be of sufficient interest to secure a place in your columns.

I may premise that the animal, so long known to the "fair-going folk" as Wombwell's, was upwards of 120 years old, and having an incurable disease in its feet, it was unable to walk; in fact, upon its recent removal from Aston Crop Gardens to the Sherborne Road, a distance extending perhaps a little more than three miles, the time occupied was from twelve o'clock at night until after ten the following morning, and although she was occasionally upon her feet afterwards, yet, on Sunday, the 15th instant, the animal laid down, and appeared unable again to rise. Under these circumstances, communication having been made to Mr. Edmonds, the proprietor, and he, knowing the total impossibility of moving her by carriage from her great weight, being upwards of three tons, independent of the probability of her suffering pain, wisely determined to have her destroyed, in the most unobjectionable manner possible. Instructions having been given me to carry these wishes into effect, I asked the opinion of Mr. Flewitt, chemist, of this town, and, after due deliberation, it was determined to attempt the destruction of the animal by poison. It should be borne in mind that the destruction of the elephants both in London and Liverpool was at last effected by shooting them, but not without considerable danger and trouble, as well as pain to the animals; upwards of one hundred bullets being discharged into the carcase of the animal, and, in one instance, after the attempts at poison had failed.

However, the modern introduction of chloroform induced me to hope that I might accomplish my object by the direct introduction of prussic acid into the stomach; therefore, on Tuesday, the 17th instant, Mr. Flewitt and myself, accompanied by Mr. Rice, surgeon, of Moor Street (who kindly gave me his assistance), proceeded at three o'clock to carry our intentions into effect. A sponge was saturated with two ounces of chloroform, and applied by the keeper to the animal's trunk, and, after the lapse of five minutes, renewed; in nine minutes, the animal became insensible, being unaware of the presence of her keeper, and not answering to the

usual means used to arouse her. The pupil of the eye was dilated, and unaffected by the application of a lighted taper, the respiration only telling of her existence. After letting her remain some minutes, and resorting to a third and a fourth application of the chloroform, I proceeded to inject into the stomach six fluid ounces of hydrocyanic or prussic acid, of Scheele's strength. This, with the assistance of the keeper, and a syringe with a long flexible tube, was easily accomplished. The animal was then permitted to remain for three-quarters of an hour, and it lay without exhibiting the least sign of pain or feeling; perhaps the only difference was a little more labour in the breathing. After the end of the time above stated, the keeper, with a few slaps of his hand, and the aid of his voice, roused her, and in a very few minutes she appeared very little the worse for what had been given her. On the keeper asking her to have some ale, she replied by the familiar snort peculiar to these tame animals; and drank a quart with as much relish as usual, and more than I could have imagined after such a dose of poison. I then determined to give her two drachms of strychnine; one, perhaps, of the most powerful and speedy poisons with which we are acquainted, and acting in a manner different from prussic acid. Accordingly, it was made into a ball, with linseed meal and honey, and given to her by the keeper; in fact, she ate it without making any trouble about it. During nearly two hours, I could not perceive that it produced the slightest effect upon the beast, although at one time some rather more frequent and extended action of the legs led me to anticipate a successful termination to my efforts. In this, however, I was disappointed, as at the end of two hours not the slightest difference was discernible. I then determined to give a larger dose of strychnine, and administered a ball containing one ounce of that poison. This being made as before, she ate it, and the result proved as fruitless as the former one. I now consulted Mr. Rice and Mr. Flewitt as to what other means offered any chance of success (without our having to seek the aid of the bullet), so as to rid the animal of her existence; the most deadly and active poisons, carefully administered, not having produced the slightest effect; when, however, it was determined to make another attempt. Accordingly, I proceeded to make a continuous application of chloroform, in the anticipation that the animal would sink under its influence, such having been the case with a bear, I think, at the London Zoological Gardens. At three o'clock the next day, Wednesday, the animal having been during the interval in her usual state, the sponge was again

saturated with two ounces of chloroform, and carefully covered with oil-silk, to prevent any evaporation, and produce its full effects speedily, and applied to the trunk. As yesterday, insensibility was produced in nine minutes, and we continued to keep the sponge supplied with two ounces of chloroform every ten minutes, until thirty ounces had been consumed. During that time, nearly three hours, there was the most perfect insensibility to pain or feeling, as the sequel will show, and which continued for about an hour and a half, a much longer period than after the first exhibition; which, perhaps, may be accounted for by a much larger quantity having been used, and a much longer time employed. This having failed, I determined to destroy her by some other means, and, after much consideration, I resolved on dividing the carotid artery, but, at the suggestion of some gentlemen present, one attempt to destroy life with a gun was made. At six o'clock on Thursday morning, this intention was carried out. The animal having again been put under the influence of chloroform, and still lying in the same position, on its left side, Mr. Benjamin Johnson stepped on the body of the animal, and discharged a rifle, loaded with a bullet, in an upward and slanting direction, under the animal's right ear, about three inches from the angle of the jaw. Instantly, a jet of blood, about twelve inches high, and the thickness of a goose quill, issued from the orifice, showing, to my great satisfaction, that the bullet had penetrated a branch of the carotid artery. In a short time, the orifice in the artery slipped from beneath that in the skin, therefore, an enlargement was made, and my former intention carried out, by fully dividing the carotid artery, when a large gush of blood followed, and in the short space of twenty-eight minutes the animal ceased to exist. During this time there was not the slightest suffering or consciousness; the only movement made was putting the head and body a little back, which was something like moving a small mountain; and thus terminated the poor elephant's life. I subsequently made a cursory examination of the body, but as I was not aware at what time the *post-mortem* would be commenced, I could not gratify my wish of tracing the course of the ball through the soft parts. It was found lodged in the bones at the base of the skull; but it never could have caused the death of the animal, neither do I think a ball from any ordinary gun would enter the brain case of so old an elephant. The only method I should hereafter pursue, as offering the greatest facility of destroying life, would be, as in this instance, first to apply chloroform, and then dissect down to, and divide the carotid

artery at once. I would observe that whoever should have the next animal of this description to destroy, must take care to be well provided with knives, the toughness of the skin and integuments defying ordinary ones, and almost ordinary strength. I am also most fully convinced of the great advantage of using chloroform in all operations upon animals. I may add, that the whole of the viscera appeared healthy; the feet only were diseased, and could they have been cured, there is no knowing to what age the animal might have lived.

[We doubt not that our readers will be gratified by the above account, it being far more satisfactory than the brief notice we were enabled to give of the transaction in our last number, which was copied from the daily press.

The editor of the *Pharmaceutical Journal* remarks that "the tenacity of life in this case is in remarkable contrast to the nervous susceptibility of the elephant in the Regent's Park. That animal was so alarmed at the thunderstorm on the 14th July, that she trembled with fear, refused her food, was attacked with diarrhœa, and died in rather more than twenty-four hours. She had previously been in good health.]

A COMMUNICATION

From C. DICKENS, Member of the Council of the Royal College of Veterinary Surgeons, Kimbolton.

GENTLEMEN,—There is no portion of a periodical more anticipated, read with greater interest, or extensively criticised, than its "Leader;" hence, some remarks which have lately appeared in yours, upon the appointment of veterinary examiners, have produced a communication from Mr. Gamgee; and we must take it as highly complimentary that one so rapidly advancing in the higher branch of human medicine, should not altogether have forsaken the lower one; that with all his adoration for his new love, he does not forget his old one, nay, still feels an interest in her welfare, and acknowledges with gratitude the favours he received during the days of his youth at her hands.

That gentleman and yourselves differ as to the mode of electing veterinary examiners, but agree in conclusion that the power is entirely vested in the Council, as elected by the body of the Profession. Would it not have been a more convenient mode for that gentleman to have attended our annual

meeting, since any observations there advanced might have elicited the opinions of some members then present, and who have neither time nor inclination for writing?

Your Council, as now formed, certainly is equalised as much as possible, so far as regards its representatives; the College sending to that Board its four excellent preceptors, the army its principal, the senior V. S. of the Ordnance, and two others; of the remaining sixteen, eight are metropolitan practitioners, and eight from the provinces, all of whom are of *some standing* and estimation in their several localities.

Further, if I may borrow the language of one of you, the body corporate have an opportunity annually of throwing some *new blood* into the system, or by re-election of giving proof that the old is not *vitiated*.

Of the efficiency of the gentleman lately elected as an examiner, surely none can doubt. His extensive practice must have given him opportunities of knowing the requisites essential for the aspirant to veterinary science to be possessed of ere he is sent forth under the sanction of the Board; in short, "the right man is put in the right place."

Although I am sure it was penned in a kindly spirit, there is one observation in your leader for July which I would rather not have seen. "You hope that no party of obstructives will be formed." Surely, gentlemen, you have upon reconsideration, a better opinion of the members composing the Council of the Royal College of Veterinary Surgeons than to suppose any of them capable of lending themselves to party purposes. They may differ in opinion as to the best mode of serving the profession as a body, but I hope, and firmly believe, that, individually and collectively, they have only one object in view, namely, its welfare.

As I am upon the subject of examinations, I cannot resist stating an opinion I have long held, and one in which many very eminent members of our art I know fully coincide, viz., *the necessity of a preliminary examination prior to admission to our chartered schools*. Its adoption might prevent *some* persons from entering our profession, but depend upon it a greater number would seek the Temple of Science ultimately, and it would do more towards inducing a better class of men to come amongst us than all our annual displays, even when countenanced by royalty, as in a recent case so highly complimentary to our esteemed President.

I am, Gentlemen,

Yours very truly.

ON DOCKING.

By Mr. T. Jex, M.R.C.V.S., V.S. 1st Life Guards.

To the Editors of 'The Veterinarian.'

Gentlemen,—In your Journal I have lately observed communications from several members of the profession on the operation of "Docking or Amputation of the Tail." I most certainly do agree with them that it is high time the searing iron should be discarded from among the instruments of the legalised veterinary surgeon, and a more humane and scientific method adopted of performing this oftentimes barbarous operation. I am happy to find that it is gradually going out of fashion, and, like most other things, it has had its day. People, I trust, are getting more sensible, and are contented to leave the animal a useful and ornamental appendage, instead of depriving him of that which nature gave him for an important office.

When I first entered the army, now some years ago, it was the practice to "dock" all the remount horses. These animals being young, many were of a nervous and vicious temperament, and often they became much worse after this operation had been performed; and for a length of time were dangerous whenever their tails were interfered with. I was frequently disgusted with the cruel method I had to carry out, and felt for the poor animal whenever the hot iron was applied; I therefore came to the determination of discontinuing it, and trying a more humane and simple mode, and which succeeded beyond my expectation. The plan adopted was this:—After the removal of the tail I applied a small quantity of the Pulvis Resinæ Com., laid on a pledget of tow, to the bleeding end, and tied a ligature of twine around the hair close up to the stump. In a short time the hemorrhage subsided, and in no instance had I any ill effects from it. The next day I removed the ligature, and allowed the tow to come away by itself. The wound soon healed, and I had the gratification of knowing my patient had been saved the torture of the hot iron.

I have witnessed very many sad accidents arising from this operation being performed in the old way; and I remember once seeing the life of an eminent member of the profession placed in jeopardy from the animal plunging and kicking the moment he applied the iron. I am happy to say that for some years past I have not been called upon to perform this

operation, and I hope during my service never to see it resorted to again. I trust, for the sake of humanity, the members of the profession will take this simple and easy method I have described into consideration, and always bear in mind that whenever we are called upon to perform any operation it is our duty to lessen the sufferings of our patients, and to do all in our power to save an unfortunate animal from unnecessary torture. Apologising for thus occupying your pages,

I remain, Gentlemen,

Your most obedient servant.

Hyde Park Barracks; *July* 12, 1855.

ACCUMULATION OF SERO-PURULENT MATTER IN THE UTERUS OF A HEIFER: EVACUATED SEVEN TIMES.

By W. A. Cartwright, M.R.C.V.S., Whitchurch, Salop.

On the 30th July, 1854, I was called in to attend a two year old heifer, the property of Mr. Ralph Burgess, of this town, cheesefactor.

Symptoms.—The animal is continually elevating her tail, strains very much, and tries to force something down from either the anus or the vagina. I introduced my hand up the rectum and detected a tumour in the situation of the uterus, half the size of one's head. On passing my hand up the vagina I could feel the enlarged uterus. The os uteri was not in the least dilated. She now forced the os uteri and surrounding parts into sight, which were rather inflamed, but otherwise in a normal state. Thinking it might be an impregnated uterus, I did not consider it advisable to puncture the uterus through the os uteri. I therefore bled her, and ordered aperient and sedative medicines to allay the spasm and irritation. In a day or two after this she got better, and did not strain so much, and she continued so for a fortnight or three weeks, but afterwards she relapsed into her former state. To be left alone for awhile.

September 11th.—Finding her to be no better, I again introduced my hand up the rectum, and found the uterus was as large again as when I first saw her. The os uteri was not in the least dilated,but the parts around it were much inflamed. Seeing no amendment in her, I was determined to puncture

the uterus through the os uteri. I therefore forced my fore-finger through it, but, on withdrawing it, the os uteri contracted and nothing escaped. I then again introduced my finger, and on withdrawing it I pushed a female catheter into the orifice, and immediately there came out, in a very free stream, about two gallons of a sero-purulent fluid, of a cream colour, and having a very offensive odour. The parts about the vagina were then occasionally bathed with cold water, and the next morning she was turned out to grass. In a few days after, the straining had in a great measure ceased.

19th.—This day I was passing, and saw her in the field straining a good deal. I had her fetched up, and again examined her. She is thinner in condition. Passing my hand up the rectum I found the uterus a good deal distended, but not to the extent as when I tapped it. The tumour was flatter, but quite as long, and I could distinctly feel the horns of the uterus. I then again, and in the same way as I had done before, tapped the uterus, and a similar fluid issued to the amount of a gallon. I could not detect the least indication of the remains of any fœtus. Animal to be turned out again.

October 7th.—I again saw her in the field, with her tail stretched straight out behind her. Had her fetched up. She is improved in condition. No swelling appears about the anus or vulva until she begins to strain.

Mr. Tunnah, the bailiff, considers that she has very much improved in condition, and she has not strained so much as usual of late. On passing my hand up the rectum, I however, found the uterus very much distended, and again evacuated it, when about six quarts of fluid, similar to what came away before, escaped. She was then turned out into the field.

October 21st.—Saw her again. She was neither straining or erecting her tail, but feeding, and looking well, being also improved in condition. Thinking it advisable (if any fluid should be in it) to tap the uterus before it had attained so great a size as to produce straining and irritation, I had her brought up, and on passing my hand up the rectum I found the uterus to be distended, but not so much as before. I then passed the catheter through the os uteri, and there escaped about three quarts of a similar fluid to the former. She was afterwards turned out.

November 15th.—Tapped her again, and removed about a gallon of the like fluid. I now injected into the uterus ʒi of Solut. Calx Chlor., in about half a pint of water. It made her strain for a time, but this soon subsided.

December 9th.—She has been going on very well since I

saw her last, improving in condition, and has not strained so much. Latterly she has been observed to be in æstrum. This day I thought proper to tap her although there was nothing to indicate a great accumulation of fluid, yet I drew away about five quarts, though I think it was not so offensive as before.

28th.—I understand she has been straining a good deal lately, and this day I was sent for. Her general appearance is good, but she has not improved in condition so much as expected, considering she has been put up to be stall-fed. The vulva is well contracted, and there is not the least swelling about it or the anus. On putting my hand up the rectum I found the uterus was very much distended, but I could not detect the existence of any fœtal bones. On introducing my finger into the os uteri I found it was more thickened than formerly. I then introduced the catheter and I drew off about six quarts of fluid; but this time I found it very much altered in colour, being a light brown, and it evidently contained small masses of coagulated pus, and its smell was more offensive. Gave a solution of opium to allay the straining. Soon after this the animal, being in good condition, was sold to the butcher, and, I am sorry to say, I had not an opportunity of making a *post-mortem* examination of so rare a case.

Observations.—I cannot at all say what could be the cause of this disease. She never had a calf. A bull was in the stock but he was not diseased. One can hardly fancy abscesses had existed and burst so often in the uterus. The probability is that the lining membrane was in a diseased and ulcerated state, and secreted the sero-purulent matter.

MEMOIRS OF A VETERINARY SURGEON.

PATHOLOGY OF LAMINITIS.

By T. Greaves, M.R.C.V.S., Manchester.

(*Continued from p.* 383.)

I now approach the most important part of my subject; and, from the positions I have advanced in my former papers, it will be observed that I class this disease under two heads: the first I shall designate passive or undeveloped laminitis, and the other active or developed laminitis.

PASSIVE LAMINITIS.

The portentous phenomena attending the premonitory indications of this stage of disease are deserving our most serious consideration. An observant practitioner will be able to discern Nature speaking to us by them, and we ought to listen to her. They are her emissaries, choosing where to migrate, yet governed by definite laws. The theory of similarity of structure inducing similarity of disease is a plausible one, and full of interest; but if it were practically true in all its bearings, we must frequently have, as an unavoidable consequence, the laminæ of the hind feet attacked as well as those of the fore feet: if not at the same time, they must, of necessity, become so soon after, as they are subject to such inordinate labour; but this scarcely ever occurs, although composed of precisely the same kind of tissue; neither does the originally lame foot become affected with laminitis, consequent on similarity of tissue, although it is weakened and predisposed from recent inflammation during the time that disease is prevailing in the opposite one. There is also another view that rather militates against it, viz., the unquestionably strong constitutional differences we meet with. In pleurisy, for instance, there is extreme susceptibility to the influence of any purgative agent, but in laminitis we have the most obstinate and sluggish state of the bowels present. In all cases during the earliest appreciable deviation from health, the treatment must, of necessity, partake of a general character, as no constitutional tendency can be known by us to exist, and this is beautifully demonstrated in *humour*. The very earliest signs discernible are languor, followed by rigors, then disturbance of the respiration, and the pulse ranging about 70, and usually hard. These symptoms all show themselves within half an hour. But what I want to impress on the mind of my readers is, that this is only humour in embryo; it is just arriving at a climax, having been gradually assuming this state for weeks. Up to this moment there is not the slightest indication of any stiffness, tenderness, or tumefaction, but if left alone this will show itself in a remarkably short space of time. Bleed now promptly, and you will prevent the further development of the disease, for when energetic measures are resorted to at the onset of an attack, nature seems as if conscious of our interference. The enemy recedes reluctantly, and disputes every inch of ground that we dispossess him of. If we will only narrowly observe, we shall see at times the whole

system fairly shudder again, as if from internal workings. There is at that moment a great natural conflict being carried on. For twelve hours after the animal occasionally breaks out in perspiration, and the breathing becomes hurried. The enemy relinquishes his positions only by degrees, after having had his forces decimated. The disease as yet can only produce a very slight effect upon the lymphatics, which become perceptibly tender, but this soon disappears. Here is the gist of the whole question. We do not radically expel the disease; for after a while, a few months it may be, it acquires new strength, and again assumes the offensive. But to revert to laminitis. The moment the fact of its existence becomes recognisable from any of the indications named in my former paper, I would act promptly. And here allow me to remark that the practitioner is pardonable if his anxiety induces him to take as a precautionary measure that step which the after symptoms prove was unnecessary; for remember, not only his own conscience, but his profession, and even his employer, will more readily acquit him for having made an unnecessary move to prevent a formidable attack, than if, by the neglect or omission of one point in treatment, he had allowed the enemy a ready and an undisputed entrance; for at that interesting crisis the wave of life sometimes flows on tremulously and uncertain, and during that short period of unconsciousness the condition determining the result is imperceptible and almost unascertainable; and therefore, in order to avert it from settling in the laminæ, the first step I take is the careful removal of the shoes, and then see that the horn is supplied with a sufficient amount of moisture. If the animal were in good condition, I would bleed from the neck to an extent that will make an impression upon the vascular system, and administer a gentle purgative, but never aloes alone, always combine it with some carminative; feed on mashes, and place the animal in a cool loose box having a soft moist floor; for we always find the sensitive sole at the toe, as well as the sensitive laminæ at the same part, to be the earliest and chiefly affected. This treatment followed up with entire change of diet, and easy work, for some time afterwards, will, in all probability, if not entirely remove the disease, so far weaken its influence as in all probability to put far off the evil day. But if, on the contrary, as it sometimes does happen, the disease continues to make head, despite all we can do to prevent it, that tenderness and lameness, or in other words *active* laminitis shows itself, we shall find it necessary to concentrate all our preventive

forces; for interstitious deposit will take place almost immediately. Professor Barlow states, that exudation takes place in from eight to ten hours, and rudimental horn is formed in four or five days, and in some cases in twenty-four hours. I fully believe in this ascertained fact, and it is often here that the dreaded contract is signed, signed too for life.

ACTIVE LAMINITIS.

That great and eminently distinguished veterinary writer, the late Mr. W. Percivall, when treating on this subject, says, "There may be, and no doubt are, other morbid conditions from which the animal suffers most acutely for a time; but there is no one in which his pain, while it is poignant in the extreme, is apt to be so protracted as in laminitis." Further on, when describing the symptoms, he says, "Day and night, night and day, is but one continued scene of loud and sad complaint, the patient being found either lying and groaning and kicking about in torment, or else standing and breathing hard, and quick, and oppressively, looking most imploringly, and pawing or shifting his feet without intermission." Such, then, being the description of our patient; in this desperate state what can be done for him? In the answer to this question we find doctors disagree. Some authors say bleed him at the toe; others say, by no means, but rather take blood from the coronet. Again, others say, bleed in the plate vein, and others prefer the neck; but they all say bleed, and bleed freely. Some practitioners take off the shoes, and thin the soles; others say, on no account whatever thin the soles, for we want all the horn we can have in the front portion of the sole to keep up the coffin bone. Some steep the feet in hot water and apply hot poultices; others say by no means do this, but rather use cold water and cold poultices. Some say physic at once and effectually; others contend and say, you really must avoid active purgatives. Some say insert a frog-seton; others say no, that only increases the irritation. Some say let the animal stand on bog, or exhausted bark, or clay; others again say no, but rather let him stand with the fore feet on level flag-stones without any moisture. Now I shall not attempt to define the why or wherefore that all this contradiction exists, but content myself by simply stating such to be the case.

In the remarks I am about to make on the treatment of acute laminitis, I would in the first place ask,—What would be thought of the engineer or architect, who, being requested to

examine and repair a bridge or house-wall, the foundation of which was settling or sinking, commenced tinkering and pottering about the foundation and foundation-stones themselves, without providing for contingences, and wholly heedless about the superincumbent weight above? Would not the man be looked upon as a most indiscreet and injudicious person? Would any one be surprised if the bridge or house came down about his ears, and he was found buried in the ruins? Yet we find many considerate and thoughtful practitioners, whilst they are most careful about the exact weight of the poultice not exceeding a few ounces, to be at the same time wholly regardless about the tearing and breaking stress from the mighty weight of the superstructure, this pressing with a force in some cases equal to 20lb. upon every square inch of laminæ, or half a ton, upon these highly organized and now extremely vascular and sensitive tissues of the fore feet.

In treating cases of acute laminitis, the great importance, nay, the absolute necessity, of removing, as speedily as possible, the superincumbent weight, as a first or primary act in the way of treatment, must be obvious to every reflecting mind. Mr. Gabriel says his great anxiety is to get in his frog setons; now my great anxiety is to remove, as speedily as possible, the chief cause of the animal's intense suffering; and *this done*, you may then bleed, insert frog-seton, foment, poultice, or do whatever else you deem requisite.

SLINGING.

So great is the importance I attach to slinging, in this disease, that I esteem it the "sheet anchor." The advantages to be gained from it are greater than from all the other modes of treatment put together, since these, without slinging, are in by far the majority of cases utterly unavailing. I am now speaking of acute laminitis in heavy draught horses, and so thoroughly satisfied am I of it, from opportunities I have had of observing, that I now look upon all other remedies as secondary to this. I consider slings as essential in acute laminitis, as the tracheotomy-tube in cases where immediate suffocation is threatened from a temporary plugging up of the larynx, occasioned by acute inflammation and swelling of the lining membrane. Where would be the wisdom of employing the most efficacious means at our command, knowing that they could only reduce the inflammatory affection in twenty-four or forty-eight hours, while the patient, to the greatest earthly certainty, could not survive

more than half an hour or an hour? By introducing the tube you not only keep alive your patient, but you set at rest the membrane and tissues so intensely irritated, and by so doing you are enabled readily to reduce, by other treatment, the swelling and inflammation. Exactly, and upon the same principle, do I advocate the use of slings. Remove the great cause of the intense suffering, namely, *the weight*, and you have then a most favorable opportunity afforded you to restore your patient to health. Only suppose a case of inflamed lungs, and the animal compelled to remain in an impure and heated atmosphere; or conceive him hurried to and fro in order to distress the breathing as much as possible, and this continued! The analogy holds good with laminitis. So long as the weight is tearing away at the sensitive laminæ, like the lungs, in the one case, so the laminæ, in the other, are not allowed a moment's quietude. What chance, I would ask, would such a case have of recovering? We have all seen a poor distressed patient, brought out of a close and heated stable, with his respiration highly laboured, allowed to inhale the cool refreshing air, and we have witnessed the almost magical effects it has produced. We have seen the relieved and grateful creature by his looks thank us for so doing; and I have experienced a similar pleasing gratification in a case of protracted laminitis. In a valuable cart-horse, where the coffin-bones had commenced sinking, there was distressed breathing present, and continual perspiration from pain, which had existed for weeks, but when placed in the slings he became almost instantly relieved; and then other ameliorating treatment being afterwards resorted to, such as standing without shoes upon a quantity of cow-dung and litter, his improvement was really wonderful. In a week's time his shoes were tacked on, and when he was taken out of the slings, he could walk nearly sound and free from pain; but in an hour or two the feet began to pain him again, he was therefore placed again in the slings for another week, with the shoes on, and standing on cow-dung and litter as before. Again he came out nearly sound, but in a few hours the laminal weakness and tenderness returned; and although we continued this treatment for some time we found the laminæ could not be restored to sufficient strength, nor the coffin-bone become reinstated, and the animal was in the end destroyed. Since then I have always used the slings at the very onset, and they have succeeded beyond my most sanguine expectations. There seems to be no difficulty in subduing the constitutional or sympathetic fever, and preventing the sinking of the soles. The length of time the patient is slung (only

partially slung of course) must be determined by the nature of the case, and the discretion of the practitioner. So great are the obvious advantages, but so defective is the present mode of slinging horses, that I had made up my mind to offer, through our professors, a prize of ten pounds for the best essay on slinging, in order to obtain the most useful practical contrivances partaking of any and all the advantages that recent improvements could suggest, but on further reflection I found it a field where the scope was too limited for the full exercise of superior talent.

If one argument, or fact, be yet required to render the advantages of slinging more conclusive, I would advance this, which I opine cannot fail in practically demonstrating it to be an unquestionable and incontrovertible truth, viz., in a case of severe lameness in one foot from an injury. In this foot we have intense inflammation, in which the laminæ are more or less involved, and perhaps chiefly implicated, but we have none of the symptoms of laminitis or sinking of the sole hereafter (only in grossly neglected cases, when compelled to work whilst in intense pain), and why is this? It is simply because the extreme tenderness prevented the horse from laying any weight upon this foot; he nursed the organ, or, it may be said, *instinct slung it*, during the time the laminæ were inflamed. But what becomes of the other foot? Weight is telling its damaging tale there, although the laminæ are strong and healthy, and no constitutional tendency causing predisposition exists, yet they yield. There we have neither contiguity, continuity, nor sameness of tissue, as the assignable cause, but the direct effect of weight. If, then, weight will thus forcibly produce it, is it not equally certain that weight is the great and chiefly aggravating cause of the continuance of active laminitis?

There is, however, an objection to the employment of slings, viz., the sores sometimes produced by them. This may be in a great measure obviated by carefully adjusting them. The best plan I know of, is to let your slings extend forward under the breast to the front, and from this end I attach another pair of ropes. Along the under surface of my slings, or within the folds of the canvas, I have two thin slabs of wood—say three inches broad and a quarter of an inch thick,—these extend from end to end of the slings to keep them spread open, and upon my slings I have a strong india-rubber air-cushion, about three feet long and sixteen inches wide, narrowed between the arms, so as to adapt it to those parts, and this is kept inflated with air. I have also a cross beam behind, and likewise one on each side, well

covered with bags filled with soft hay, for him to rest his hind quarters upon; this is in addition to the breeching. Slinging for the hind legs I consider next to useless, as we are liable to injure the soft parts of the abdomen, in our attempts to remove the weight from off the hind feet.

I advocate prompt and effectual bloodletting from the coronary plexus, and repeat it in six or twelve hours, and again and again, if found requisite. Should the pulse falter before you have taken away the quantity of blood you intended, or, in other words, the patient will not tolerate bloodletting, it is always a good omen.

I remove the shoes, but do not pare the soles, although I do not believe that in leaving thick soles you in any way prevent the sinking of the soles. Tepid water, and warm poultices, and physic, are to be employed, and this latter you must repeat, in gentle doses, occasionally during the treatment. I have had some horses placed for six or eight hours a day, and that for days together, in a running brook. In other cases I have caused a stream of warm water to be poured over the legs and feet, by means of two india-rubber tubes proceeding from a bucket suspended near the animal, and which was kept replenished with hot water; and this continued for days and nights together. In others, again, I have had the soles moderately thinned, nice soft stuffing applied, and leather soles tacked on without shoes, using small, flat-headed nails; but generally, as the sequel proved, all was in vain. I formerly used the frog-seton in several cases, but did not succeed with it. Nearly twenty years ago, I was induced by the owner, although I protested against it at the time, to blister the coronets with a strong blister, within the first twenty to twenty-four hours of the attack, and, contrary to my expectations, it was attended with the most beneficial effects. My general plan of treatment, in very severe attacks, is, after having for a week or two used depletive and ameliorating treatment, to blister even a dozen of times in some cases, often with the biniodide of mercury, or the tartar-emetic ointment, and ultimately firing; after this a six months' run at grass is allowed. But in such protracted cases the result is generally unsatisfactory. In one case, as an experiment, I unnerved a horse after twelve months' treatment; but I shall never unnerve another where the laminæ are affected, and the horny and sensitive laminæ are disunited. I am now come to this conclusion, that whatever our after treatment may be, it is pretty nearly all as one; since it is of little avail (in severe cases I mean), if we neglect seizing the first and only chance of a complete restoration to health,—

viz., *cure by resolution*. It may be asked, why do you advocate slinging in preference to casting? I answer, I do so for several reasons, but especially because the animal is soon tired of being confined down; he becomes impatient of restraint, commences fighting, and bruises himself all over. He also injures his feet in his violence, throws off the poultices, rubs off the blisters, &c.; and you are thus unable to attend properly to him. Irritable horses will sometimes fight until so completely exhausted that they actually expire in their fetters.

If the above humble remarks shall have tended to the elucidation of truth, or in any way to assist in relieving the intense sufferings of that noble animal, the horse, when labouring under the disease which has formed the subject of these papers, my object will have been fully gained; and the knowledge of having so done will be a gratification which I shall reckon amongst the greatest I have been permitted to enjoy.

PANCREATIC CALCULI FROM A COW.

By F. Blakeway, M.R.C.V.S., Stourbridge.

Dear Sirs,—I beg to send you a few calculi, taken from what has been called a cyst, said, by a butcher of this town, to have been situated near to the pancreas of a cow,—probably it was an enlargement of the duct; but as I did not see them until they were taken out, I cannot speak to their exact situation. There were about forty of the calculi, and the analysis of four by my friend Mr. W. Stoddart, of North Street, Bristol, gives the following result:—

Carbonate of Lime	11·94
„ Magnesia	·18
Phosphate of Lime	3·75
„ Magnesia	·73
Organic Matter	·82
Water	·16
	17·58 grs.

We were surprised to find them so infusible, and to contain so little animal matter; this being chiefly mucus, and a sticky kind of extract, soluble in alcohol. Solution of potass had hardly any action on them, and very little was dissolved on boiling the concretions in alcohol or ether.

I am sorry I cannot give you more information as to their exact seat; but, from their beautiful appearance, I have ventured to send you one or two as a specimen,

And beg to remain,

Yours, &c.

[We thank Mr. Blakeway for the specimens he has so kindly forwarded us.

There is much to interest both the chemist and the pathologist in the concretions met with in various parts of the body, although the immediate cause in operation to bring about the separation of their constituents they may perhaps be not acquainted with. This we know, they commonly consist of those principles which it is the peculiar function of the gland to eliminate from the organism. Occasionally there are deviations from this; these, however, constitute the exceptions to the law.

To the description given by Mr. Blakeway, nothing need be added beyond the appearance of these calculi. In *size* they are about that of peas; in *colour*, a milk-white; their *structure* is very dense; and their *surface* nodulated.

To this we may be permitted to append the following—

URINARY CALCULI POSSESSING A METALLIC LUSTRE.

When in Paris, M. Leblanc, V.S., very kindly presented to us some cystic calculi, taken from an ox, the appearance of which was new to us. In *form*, they are spheroidal. In *size*, they vary from a pin's head to a pea. The *surface* is smooth. In *colour*, they are a brilliant bronze, and appear as if encoated with a metallic film. On cutting through them, they are found to be made up of layers superposited on each other, and the colour is uniform throughout.

On making a rough qualitative analysis of one of them, this being all that was necessary, as we knew that this had been carefully done by others, we found it to consist principally of the carbonate of lime and animal matter, with traces of the phosphates and of iron. And here we may be permitted to notice, *en passant*, a circumstance which, about the same time, we became conversant with; namely,—that if colourless glass vessels be immersed for about thirty-six hours in the water of the artesian well at Grenelle, they become covered on the surface with a similar metallic deposit. The inference is that the colouring principle in both is the same, namely, iron; for that water is well known to be ferruginous and carbonated, and to the water, therefore, we

must look as the source of the compound of iron met with in these calculi.

The specimens in the Museum of the Royal Veterinary College, taken from the bladder of a cow, and which studded the lining membrane of that viscus, are similar in form and size to those given us by M. Leblanc; but some of them are rough on the surface, and others smooth, and possess a pearly lustre. Many of them are very small, but all beautifully perfect.

On the Continent, we are informed, they are very commonly met with, and they have not failed to awaken investigation among our professional brethren there. We are indebted to Mr. J. Gamgee for the following observations:

It was in the Museum of the University of Pisa, that my attention was first directed to these bodies, never having seen anything of the sort in this country. On referring to the Archives of the University, I found a long note on the subject, by Civinini, which had been published in the 'Giornale dei Litterati,' vol. xcv. The professor had been much puzzled to account for the metallic lustre, and with Vatel,* supposed it to be due to the presence of some metal, such as persulphuret of iron, gold, or a coating of sulphur, iron, mercury, antimony, or even tin; preparations of all of which are used in veterinary medicine. Professor Guiseppe Branchi, having analysed the calculi, found that they consisted of carbonate of lime and animal matter. He is also at a loss to explain the gold or rather brass colour of their surface, and refers to Brugnatelli† who says "the calculi of the bladder in animals are not of the same nature as those of the urinary bladder of man. A calculus of the pig, handed me by Professor Scarpa, in the year 1799, I found to be made up of carbonate of lime.‡ Of the same nature are the golden calculi which are frequently found in the urinary bladder of oxen. I have lately received four hundred, all found in one single bladder, some are of the size of a pin's head. The largest of the size of a hazel nut. They are formed of extremely delicate splendent layers. One hundred renal calculi of an ox I have also preserved in my numerous collection. These are of various sizes, but scarcely do they manifest in some part the golden splendour of the vesical calculi of the same animal." Trying to give reasons for not being able to explain the gilt character in question, Branchi

* 'Elémens de Pathologie Vétérinaire,' chapitre i.

† 'Elementi di Chimica,' del Prof. L. V. Brugnatelli (Ediz di Pavia, del 1838, p. 346).

‡ See 'Annales de Chimie,' vol. xxxii, p. 84.

says: "A metallic aspect belongs to many other bodies which do not contain metals the colour and brilliancy of which they possess, and it is to be observed that this curious phenomenon undoubtedly manifests itself in vegetables as well as in minerals and animals."

In Alessandrini's museum there are various collections of these singular calculi, and it appears they never occur solitary, and are mostly small. Perhaps the most interesting specimens, because some of the largest, are preserved at No. 913. They were found in the kidney of a cow which was fat and healthy. They are of various sizes, and the weight of the largest is an ounce and a half. One of the largest sawn in two presents the stratiform structure, and the layers are of a yellowish metallic lustre. These are dated 1825.

The Ferrara collection is rich in these urinary calculi, and in most of the museums I have been in on the Continent have I seen some.

Mazza says,* "During my stay in Tuscany, Mr. Antonio Lorenzani, of Pisa, favoured me with a calculus found in the urethra of an ox. Its form and size are those of a haricot; the weight eleven grains and a half, the surface uneven, but smooth; the colour auriferous, much like triturated sulphuret of arsenic; its fracture lamellated, brilliant, and without odour." Mazza describes at length the chemical processes he went through to analyse it.

The following is the result:

Uric Acid	gr. 1
Carbonate of Lime	6
Phosphate of Lime	3
Iron	1
Loss	½
	Grains 11½

Mazza had suspected the presence of iron, and accordingly obtained the Prussian blue precipitate, on adding prussic acid to an acidulated solution of the calculus, after having precipitated the lime salts.

Fürstenberg, a German veterinary surgeon, published a memoir in 1844, on 'Calculi, and Concretions in the Bodies of the Domesticated Animals.'† At page 466, he says, referring to the small round renal calculi of cattle, with

* 'Corso Completo di Chirurgia Veterinaria,' di Vincengo Mazza, Firenze, 1842, p. 388.

† Von den steinen und Concrementen im Körper der Haussäugethiere. Vom Königl. Kreis Thierarzt Fürstenberg in Soldin. Mag. fur die Gesammte Thierheilkunde, Berlin, 1844, pp. 268—461

metallic lustre: "These small renal calculi occur in greater numbers, and more frequently, than the white uneven ones or the uneven calculi with a mother-of-pearl lustre. Their size is not considerable; they vary from that of a poppy seed to that of a pea. The colour of the polished surface is of a greenish metallic lustre, which gives them much resemblance to pills that have been gilt over." It is perhaps the bronze colour he refers to here which these bodies sometimes possess.

"On being cut through, they present a stratiform arrangement, and a small grain (nucleus) consisting of the same mass, each of these layers are thin and transparent, and measuring 0·007 of a line in thickness. The specific gravity of these calculi is 2·301." Their chemical composition is as follows:

Carbonate of Lime	84·8
Carbonate of Magnesia	10·0
Carbonate of the Oxide of Iron . . .	0·6
Organic Matter	1·6
Water and Loss	3·0
	100·0

Fürstenberg, like Mazza, ascribes the metallic lustre to the carbonate of iron.

16, Upper Woburn Place.

ON THE REMOVAL OF THE LAMPAS SO-CALLED.

By "Poulain."

Messrs. Editors,—I would, for a brief space, claim your attention to an operation, which, in the present state of veterinary science, ought only to be remembered as a piece of barbarism, coeval with the days of empirical farriery; I mean that of taking out the lampas, unlampassing, or removing the skew, as I have heard it variously termed; which scientific operation I have recently seen performed in several instances, and I am, therefore, of opinion that the custom is much too common, even at this time, in many parts of the country. As it is well known in the profession, and by many others, to be a most unsurgical and cruel practice, I am somewhat surprised that the operation has not long ago fallen into that merited oblivion which has closed over drawing of the

sole, cropping, nostril and anus slitting, excision of the barbs, the use of molten lead, and applications of the like kind. But one's surprise naturally enough ceases to exist when one sees educated veterinary surgeons giving their countenance to the custom, by performing it at their client's suggestion, without a word *pro* or *con*, the fee being with them, unfortunately, the weightiest consideration. Thus it is that this wanton system is perpetuated, and when men of less sordid motives raise their voices against it they are less esteemed because men of unquestionable repute in the profession practice *that*, the non-performance of which has in some measure detracted from their more humane but less mercenary brethren. Oh, say they, but public opinion is strong, and if we hope for popularity and success, we must act in accordance with such opinion, erratic though it be; and so they support this most strange prejudice.

Is this a desirable consummation? Would it not be infinitely more to our credit were we to take the field against all errors, and more particularly against those which have for their victim the noble creature whose claim on our sympathies is truly great, and whom it is our privileged duty to shield from the effects of accident and disease, and to afford protection against cruelty? If, however, we continue in the pursuit of practices empirically cruel as this, shall we not continue to be held in deservedly low estimation by the well informed among our employers? who I am persuaded know, as well as we do, that the "fulness" in a young horse's mouth is not disease, but only a beautiful and wise provision of Nature for facilitating and perfecting dentition; and yet that which is so obviously adapted to the desired process is by us opposed with as much good will as if we thought her wayward ignorance needed all our efforts to curb her.

There are a variety of modes of performing the operation, differing only in degree of barbarity. Some only apply the heated instrument around the inner margins of the incisor teeth, and others *roast* a portion of the palate in the same space. I have seen a very large portion of the palate, close to the bony roof of the mouth, thus removed entirely. But, however performed, whether from ignorance or mercenary perversion of judgment, I doubt not you will aid me in its deprecation. Let us rather reason with our clients, for although reason may not *pay*, it will eventually prove *politic*. We may allow that there is present increased vascularity with tumefaction, and that a slight topical venesection or scarification might be admitted, but, in the name of pity, let us eschew barbarity.

Oh, but the horse cannot eat, they say. Will he eat better for being unlampassed? Is there not systemic excitement present during teething, and does not this, in the majority of cases, induce a loss of appetite? Your children, at this period, express their suffering by their cries and restlessness, and our infantile patient is dull and off his feed. Let a little medicine be given, according to the judgment of the practitioner, and all will be well.

Your forbearance, Messrs. Editors, for the *intrusion* of a claim on behalf of our equine friend, will, I hope, be freely shown by your insertion of this in the only journal devoted exclusively to the advancement and promulgation of veterinary knowledge in our sea-girt Island.

CONTEMPORARY PROGRESS OF VETERINARY SCIENCE AND ART.

By John Gamgee, M.R.C.V.S.

(*Continued from p.* 455.)

On the Origin of the Cystic Worms, &c. By Professor Eschricht.—*Researches on the Origin of the Cysto-cestoid Worms, made in the Royal Veterinary College of Copenhagen.* By Professors Eschricht and Bendz. — Dänische. Zeitschrift für Thierärzte, Vol. II, Nos. 2 and 3, 1854, also in the Repertorium der Thierheil; Stuttgart, Jan. 1854.

On the Development of the Cysto-cestoid Worms in general, &c. By Professor Haubner, of Dresden.—Mag. für die ges, Thierheil., Berlin, Nos. 2, 3, 1854, and No. 1, 1855.

Notice of recent Researches on the Origin of the Entozoa; more especially of Tape-Worms. By Allen Thompson, M.D., F.R.S. — London and Edinburgh, &c.; Glasgow Medical Journal, No. X, July, 1855.

I purpose gleaning from the above, and other accidental sources, as I proceed, most of what interests veterinary surgeons in the important subject of the origin, metamorphoses, and natural habits of hydatids and tapeworm—parasites which infect and kill so many of our domestic animals. The last five or six years have successfully crowned the labours of eminent zoologists who had till lately devoted themselves

almost in vain to answer certain vexed questions respecting the multiplication and growth of Entozoa in general.

Lecke had observed, in 1780, that the water-bladders in the brains of giddy sheep were animals, and Fabricius (Harvey's master) was the first to assert the same respecting the Cysticercus of the pig. It was supposed they were the products of disease, even after it had been observed as probable that the intestinal worms were introduced from without; but the enclosed situations in which the hydatids were found, and the absence of organs for propagation, caused them to be looked upon as animals of spontaneous or equivocal origin, the results of aggregation of matter, vitalized in some way similar to man and other living beings when first created. It had been observed that some animals put forth buds which separate from the main trunk, and develope into other beings of the same nature. Professor Bendz has observed this budding in a form of Cysticercus.

From the observations of Ehrenberg, in and since the year 1830, on the Infusoria, the spontaneous generation was rendered very improbable. Eschricht thought he was one of the first (in 1838) to pronounce with certainty that all intestinal worms, without exception, descended from similarly formed animals. It was known as certain that the Filaria medinensis which occurs in hot countries entered the bodies of men from without. The Cercariæ were known to undergo a series of developmental changes, and hence the origin of the intestinal worms was supposed to be complicated. Abildgaard, the founder of the Copenhagen Veterinary School, had observed that a tapeworm, the Bothriocephalus latus,* which occurred in the abdominal cavity of the common stickleback†, and in the intestinal canal of certain water-birds, never had eggs in the former, but always in the latter situation; and that from there it passed into these animals, he ascertained, by direct experiments with ducks, which he fed on bansticles. The conclusion drawn from this was, that certain intestinal worms undergo their complete development by passing from one animal into the body of one of another species.

Goetze, in 1782, had perceived the great resemblance between the head of the hydatid of the liver of mice and rats (the Cysticercus fasciolaris) and of the tapeworm of the cat (Tænia crassicollis). It was the observation of this resem-

* According to Allen Thomson the *Bothriocephalus nodosus* or *Schistocephalus dimorphus.*

† The stickleback or bansticle is a small prickly fish, the *Gasterosteus aculeatum.*

blance by Von Siebold, in 1844, which afterwards led to the researches respecting the specific identity of the hydatid and tape-worms. Dr. Allen Thomson says, "Dr. Henry Nelson made the same observation without a knowledge of Von Siebold's views, and I repeated them with the same result; and Dr. Nelson came to the same conclusion, now generally regarded as established, that the cat receives its *tænia crassicollis* along with the flesh of the mouse or rat of which it has made prey."

The Cercariæ, opalescent infusorial animalcules, were first studied by Müller, then by Nitzch; and, lastly, Bojanus, in 1818, recognised them as parasitic in certain snails, enclosed in living bags, or *sporocysts*, which were then called the "yellow worms of Bojanus." Von Baer, in 1826, showed the relation between the Cercariæ and their sporocysts. M. Wagner and Von Siebold also contributed to advance our knowledge respecting them; and, lastly, Steenstrup discovered the changes the Cercariæ underwent to become true flukes. Ehrenberg, in 1852, disputed Steenstrup's accepted metamorphoses, and only gives the resemblance of the tailless Cercariæ with a trematode worm.

From the near relationship between the sucking and tape-worms, it was rendered probable that even these passed through different forms in their development, and that the hydatids were to be looked upon as transitionary forms of the tænia.

Van Beneden sought, from 1849, to bring to bear his views that the species of Tetrarhyncus constituted the larvæ of the Bothriocephalus.* Von Siebold, on the contrary, thought the Cysticerci were diseased tapeworms; diseased because growing in situations ill suited for their development.

Dr. Kuchenmeister, of Zittau, instituted certain very able experiments to settle this question. He made dogs and cats swallow hydatids which developed into tapeworms in their intestines. From the hydatids of livers of mice arose the tænia crassicollis in the intestine of the cat, and from the cysticercus of the hare or rabbit, the tænia serrata in the intestine of the dog; so that, the bladder of the hydatid is lost, the head of the worm attaches itself to the mucous membrane, and the rings constituting the body of the tape-worms, and including the organ of reproduction, are formed. These interesting experiments were repeated by several other zoologists (also with cænuri and echinococci) and confirmed.

* Bremser thought the Tetrarhyncus the young of the Anthocephalus or Rhyncobothrius.

These are the discoveries of importance to us as verterinary surgeons; they acquaint us of the true nature of certain diseases, and suggest to us the means of cure. Thus, each head of the cœnurus from the brains of giddy sheep, if swallowed by a dog becomes an independent tapeworm, which bears a striking resemblance with the long-known tænia serrata of the dog. The cchinococcus veterinorum (which I have met in several instances, invading to an enormous extent the internal organs of horse and cattle) developes into a small tænia with only three serrations, only the last one of which bears eggs. This form was not known before Küchenmeister's experiments.

Küchenmeister reversed the above experiments, and thus more strikingly proved the relationship between these different forms of the same animals. Thus, the tænia crassicollis, or its eggs, given to a family of white mice, which he had in his possession, produced the hydatids in their livers. Just the same happened by causing lambs to swallow the tænia serrata of the dog; after fifteen days had elapsed, violent symptoms of gid supervened, and the hydatids, in process of growth, were found in their brains.

This experiment, first made on the 26th of July, 1853, has been since confirmed by other zoologists.

Dr. Allen Thomson has given us an excellent summary of Von Siebold's experiments, which I transcribe, inasmuch as it embodies most of what has been done even since.

"*First series.*—Ten young dogs were fed with the cysticercus pisiformis from the rabbit, and being killed and opened at different successive periods afterwards, the gradual progress of the conversion of the cysticerci into tæniæ was carefully observed in their intestines. It appeared that, by the action of the gastric fluid in digestion, first the cyst, and then the caudal vesicles of the cysticercus were dissolved in the dogs' stomach; but the head and neck, resisting entirely the solvent action, passed into the duodenum. Here they soon became attached to the mucous membrane; and after a short interval of only two or three days they were seen to enlarge, the head and neck undergoing little change, but the body elongating, and very soon the transverse grooves appearing, which afterwards becoming more marked, divide the body into its segments. In less than two months these tæniæ had attained the length of ten and twelve inches, and in three months they were from twenty to thirty inches long, and the reproductive organs were fully developed in the last or caudal joints, which now began to separate as the proglottides.

"The most common tapeworm of the dog is the tænia cucumerina, with oval shaped segments; it is only when it has access to the rabbit or hare as food, that it acquires the tænia serrata with angular segments, and accordingly this last more frequently affects hunting dogs. Von Siebold ascertained that in other young dogs in the same circumstances, but which had not received any cysticerci, no tænia serrata was found, and it was fair to conclude, therefore, that the embryos of the tæniæ had, in the first set, proceeded from the cysticercus.

"*Second series.*—The experiments were made by feeding young dogs with the cysticercus tenuicollis, which is common in domestic cattle, and of which the vesicle often attains a large size. Having found that the vesicle was invariably destroyed by digestion, Von Siebold contented himself thereafter with giving the heads only, or scolices, to the dogs, removing artificially the vesicle. Six young dogs were the subjects of this set of experiments, which was conducted in a manner similar to the first, the worms reached their full development in forty-eight days, and corresponded exactly with the tænia serrata. In a fox which was fed upon the same cysticerci no tæniæ were found.

"*Third series.*—In this set of experiments, the cysticercus cellulosæ, from the flesh of the hog, was employed. Four young dogs received, at different times, a number of these cysticerci along with their food; and on being opened at different intervals afterwards, there were found in their intestine, in various stages of advancement, corresponding to the length of time that had elapsed, tapeworms which resembled exactly the tænia serrata. Von Siebold was struck with the close resemblance of this *Tænia serrata* of the dog to the common *Tænia solium* of man, and after an accurate comparison of various examples of these entozoa, concludes that they are identical, and not to be specifically distinguished, or that at most they are varieties of the same species dependent only on the difference of their parasitic habitations.

"*Fourth series.*—This series of experiments was performed in the same manner as the last, but with the heads or scolices of the cœnurus cerebralis, the entozoa so well known in connection with the disease of sturdy and staggers, which it produces when infesting the brain of sheep and cattle. In order that the cœnurus might be procured alive, the dogs experimented on were carried to a part of the country where a number of sheep were affected with sturdy. In the intestine of five out of seven dogs fed with the cœnurus, great numbers of tænia were found, at successive periods, in different degrees

of advancement; in thirty-eight days the tænia had arrived at maturity, and appeared, like those in the previous experiments, to correspond exactly with the t. serrata and t. solium; in two other dogs the experiment was rendered nugatory by the dogs being ill of distemper at the time.

"*Fifth series.*—The last of the experiments related by Von Siebold were made with echinococcus animalcules (e. veterinorum) of domestic cattle, which is probably not specifically different from that of man. As many as twelve young dogs, and also a fox, received a quantity of the small echinococci in milk, and on being examined at various periods from the commencement up to twenty-six days, there were found, in all different stages of development, small tæniæ totally different from any observed in the previous experiments, or, indeed, from any one accurately distinguished or described by helminthologists. This Von Siebold proposes to call tænia echinococcus. It is remarkable for its very small size, and for the small number of its joints, which never amounted to more than three, and for the circumstance that the reproductive organs, which are confined to the three last joints, become perfect, and the anal joint separates as a proglottis at a very early period."

Eschricht and Bendz have repeated Küchenmeister's and Von Siebold's experiments. Haubner has been also indefatigable in trying to solve the very interesting questions which relate to the subject. It appears that when lambs are made to swallow rings of the tænia serrata, besides the bladders formed on the surface of the brain, there existed milk-white or yellowish bodies, from one to two lines in length, embedded in the muscles and heart; they had sharply defined cavities in their interior; their cavities, with thick walls, were filled with granular matter. At an early period after the ingestion of the tænia, the hydatids cannot be recognized as cœnuri, inasmuch as their heads are wanting. It results from Küchenmeister's and Haubner's experiments, that the heads only form after a certain time, perhaps several weeks of the first development of the bladder. The white or yellow bodies found in the muscles were evidently the eggs of the tape-worms, which, however, not being in organs adapted for their development, were soon in process of destruction. It results from the experiments of Küchenmeister and Dr. Röll, director of the Veterinary School of Vienna, that the eggs of tæniæ even in a rotten condition, having travelled for seventeen or eighteen days, provided they never get dry, if given to lambs would develope into cœnuri. It appears that in proportion as the rings of the tape-worm are allowed to remain

—say about eight to fourteen days—the development of the eggs in the sheep is not hindered but rather favoured.

From Allen Thomson's paper I glean that Küchenmeister, by his experiments, and by those of Van Beneden and Haubner, it is now proved that the cysticercus cellulosæ may be produced in great quantity in hogs by feeding these animals with ripe joints of the tænia solium; but that this does not occur either in the dog or sheep. Küchenmeister also mentions that he has not succeeded in obtaining the cysticercus cellulosæ by feeding animals with the tænia serrata vera, nor with the tænia of the cysticercus tenuicollis, nor of the cœnurus, nor echinococcus, while these tæniæ are all readily obtained by feeding animals with the cysticercus pisiformis, and c. tenuicollis, and cœnurus cerebralis.

In conclusion, to show the practical bearing of the important zoological investigations I have thus briefly alluded to, I must mention an incident which Dr. Schleisner describes in his 'Medical Topography of Iceland,' published in 1851. The inhabitants of Iceland are affected with what they call the "liver plague," which is said to affect one sixth of the population, and is exceedingly fatal. It is a long-protracted illness, which terminates with a painful death, and due to a cystic entozoon developed from the ova of a tænia. It arises from the large number of dogs kept there for herding cattle and sheep. With Dr. Allen Thomson, I may say that, "should the further elucidation of this fact lead to the adoption of successful measures for the prevention of the disease, it will be a satisfactory instance of the assistance which may be furnished to rational pathology and the practice of medicine from physiological researches, which might at first sight have appeared to some to be very remote from such an application."

[We are reluctantly compelled to withhold the continuance, in the present number, of Mr. Gamgee's article on the "Contemporary Progress of Veterinary Science," through press of matter.—EDITORS.]

Facts and Observations.

ON THE ACTION OF HYDROCYANIC ACID IN THE HORSE.

To the Editors of the 'Veterinarian.'

Dear Sirs,—At page 277 of your valuable Journal there is an account given of the action of hydrocyanic acid on different animals. Having been recently called upon to attend an aged horse, which they said had fallen down and could not rise, I found, upon examination, that he had fractured two of his ribs. The owner not wishing the trouble or expense of keeping him, desired me to destroy him with prussic acid. I accordingly gave him nearly an ounce of Scheele's strength acid, and at first it appeared to be having the desired effect, but after a few struggles and great difficulty of breathing, its action gradually subsided, and it had no further influence. I wish to know whether it has been ever given to horses before with a view to destroy life.

I remain, yours respectfully,

John Brown.

23, Whitefriars Street.

[Occasionally hydrocyanic or prussic acid has been resorted to for this purpose. Two ounces being considered the average quantity necessary to destroy life in the horse. But it is not an agent that can be relied on. Its action would appear to be very variable on different animals; and this not dependent on its strength so much as the susceptibility of the animal to be influenced by it.

The late Professor Coleman was anxious to ascertain its effects on the horse, and a number of experiments were instituted by him, which were superintended by us, and of them the following rough notes were at the time recorded. The acid employed was that designated Scheele's strength.

Gradually increased doses were at first given to an aged animal until two drachms twice a day were administered without any apparent action supervening. A few days afterwards two drachms were administered at once in four ounces of water. In five minutes after its exhibition the pulse had risen to 60, the respiration became hurried, and tetanic twitchings of the muscles generally showed themselves. These effects, however, very soon passed off.

On the following day the same dose was again administered,

the pulse being 44. In five minutes it had risen to 90, in seven minutes to 120; the breathing became laborious, and there was present high excitation of the whole system. After this, a prostration of the vital powers took place, and the effects of the agent gradually disappeared.

The next day three drachms of the acid were given, pulse 36. In three and a half minutes it had risen to 92, and before the termination of the fourth minute, most violent symptoms showed themselves: the horse reeled, and fell on his head with much force, and lay in a state of great excitement for about three or four minutes, when he got up. The pulse then numbered 120 beats in the minute. After this the influence of the agent was no longer apparent, but much debility was present.

On the day following, a drachm of Scheele's strength acid, in an *undiluted state, was placed on the tongue* of the same animal. The pulse was then 40. In five minutes it had risen to 92; the respiration became increased and laboured; and this was followed by tetanic contractions of the muscles generally. In seven minutes the pulse was 100, which appeared to be the extent of the action of the agent.

In the evening of the same day, two drachms of the acid were similarly exhibited, the pulse having fallen to 40, but being very feeble. In two minutes it was 80, and the respiration hurried; and, in three minutes, the animal fell in violent convulsions, which continued for thirteen minutes, the pulse being then 172. This was the whole of the effect then produced, as the animal got up, but was much exhausted.

It was now perceived that during the violence of the convulsions he had fractured the anterior spinous process of the ilium; he was therefore destroyed, not being of much value. This afforded a favorable opportunity of seeing the effects of the agent on the different tissues and viscera. The stomach and intestines were found to be pervaded with an inflammatory blush. The heart exteriorly was much inflamed, and on its interior surface, spots of ecchymosis existed. The brain did not present any unusual appearance; although in an ass that was destroyed with this poison the vessels thereof were turgid, and the whole of the organ smelt strongly of the acid.

On another animal the *endermic method* was tried. For this purpose, a piece of sponge containing three fluid drachms of the acid was inserted, as a rowel, in front of the sternum, the edges of the divided skin being brought in apposition by means of two or three sutures. Within two minutes the animal exhibited symptoms of much uneasiness; the pulse

quickly rose to 120, the respiration became laboured, the inspirations being long, and the expirations short; the nostrils were dilated; the hind extremities lost their power of support; the membrana nictitans was forced over the eye-ball; the iris was contracted; the whole frame became violently convulsed; the muscles rigid, as if affected with spasm, and the countenance singularly anxious. This was considered to be the extent of the influence of the agent, as all these painful symptoms gradually disappeared; but in about ten minutes a recurrence of them took place, and in a much greater degree of intensity: the breathing was more laborious, the pulse again became quickened, and seeming delirium was present, for the animal beat her head violently against the wall; the upper lip was thrust out, and the jaws were firmly locked. Profuse perspiration followed this state of excitement; the flanks heaved and fell with much force; all the muscles of the body were in a state of tremor; the eyes had a peculiarly wild and glassy appearance, with the palpebræ performing rapid movements, by which the eyes were alternately opened and shut. The fæces were voided twice during the paroxysms, but they did not possess any smell of the acid. The animal supported herself on her legs, but was to all appearance, in the agonies of death, and indeed was expected every moment to fall down dead. This violent action continued for about five minutes, when a gradual diminution of the effects of the agent took place, as in the former instances; and the animal again was left without any unfavorable symptom present except being in a state of great debility. At repeated intervals, a return of the paroxysms took place, but less and less in potency. In an hour after the application of the acid, the pulse was 80, the animal comparatively tranquil, and when food was offered her, she commenced eating it as if nothing had taken place. The following morning, there was much inflammation around the orifice, but the animal was lively, the pulse beating 35 in the minute, firm in tone, and regular.

It having been from the above experiment ascertained that the effects of the acid were as marked when placed under the skin as when given by the mouth, it was determined to see what its influence would be when exhibited in the *form of clyster*. Accordingly, three weeks after, to the same animal, two drachms of Scheele's strength acid, mixed with a pint of water, were thrown up the rectum by means of a syringe. The pulse antecedent to the exhibition of the enema was beating 40 in the minute, and regular. In four minutes, it had risen to 60; the respiration became laborious; the

hind extremities lost their power of support, and seeming delirium took place, the eyes having the same wild appearance as when the three drachms were inserted underneath the skin, with contraction of the iridis, and partial insensibility to light; and the palpebræ also became affected with the like peculiar motion. The whole frame was in a state of extreme excitement, and the animal was expected suddenly to fall. She then voided her fæces, after which the symptoms gradually subsided, and she experienced no return of them whatever.

On the following morning, she appeared quite well, was eating heartily, her pulse 36, and regular, but feeble.

It having been neglected to "back-rake" the animal prior to the administration of the acid, it was determined to repeat the experiment the next day. Two fluid drachms of the acid mixed with a pint of water were consequently thrown up as a clyster. In four minutes, the pulse rose from 40 to 60 beats in the minute, and all the other symptoms which before were manifested again showed themselves, but in a greater degree of intensity: the eye had more the appearance of semi-transparent glass; the haw was protruded over it; all the muscles of the frame were violently convulsed; she staggered and fell. After lying a few seconds, she seemed to be in a state of madness: she attempted to rise, but was unable; she then rolled violently on her back, drawing her hind legs up towards her abdomen; afterwards having managed partially to raise herself, she beat her head against the wall, and endeavoured as it were to mount it with her fore feet. After this she lay for some time almost exhausted. Her pulse could be taken only with extreme difficulty, which was 160 beats in the minute; and the respiration most laborious. This violent action gradually subsided, and in about ten minutes the animal was on her legs again, and free to all appearance from the effects of the medicine. She now seemed very anxious for food, and was allowed it. In half an hour after, she was left, not having experienced any return of the symptoms, feeding heartily, but the pulse beating 120.

Ultimately, she perfectly recovered from all the effects of the acid.

THE EFFECTS OF HYDROCYANIC ACID IN A CASE OF TETANUS IN AN ASS.

To an ass laboring under tetanus, apparently arising from exposure to cold, two drachms of the medicinal acid were inserted, in the form of a rowel, underneath the skin of the

thigh. The like symptoms to those which presented themselves in the horse were manifested; but in a much more violent degree, and the animal fell from exhaustion. During the powerful action of the agent the jaw became partially relaxed. The sponge containing the acid was allowed to remain in for twenty minutes, but so much had been absorbed into the circulation, that the animal was unable to bear up against its influence; and it ultimately died.

Post-mortem examination.—On opening the chest, the lungs were found to be of a healthy colour, but the blood-vessels were engorged, and the lymphatics contained red blood. The vessels of the brain were also highly injected, and even those of the medullary substance, which smelt strongly of the acid.

THE EFFECTS OF PRUSSIC ACID IN A CASE OF TETANUS IN A HORSE.

Symptoms.—Pulse 39, full, and regular. Rigidity of all the muscles of the body; eyes retracted within their orbits; conjunctival and Schneiderian membranes very vascular; respirations short and painful; lower jaw not quite closed, capable of being opened to the extent of about two inches.

The skin underneath the lower jaw was separated from the connecting cellular tissue, and within the cavity thus formed was inserted a piece of sponge, containing Acid. Hydrocyan., f. ʒj. From it the pulse became increased; but no other effect was manifested. Three hours after, another drachm was similarly placed underneath the skin, opposite the sternum. The pulse was then 44. In four minutes it had risen to 80; in five minutes to 108; and in twelve minutes to 140, beats in the minute; after which it began gradually to subside. In fifteen minutes it was 120, and at 10 p.m., it had regained its former standard. At the commencement of the action of the agent, the pulse was full and regular, but towards the latter part it became weak; yet it retained its regularity of action. Profuse perspiration was produced in about five minutes after the insertion of the acid, accompanied with quickened and laborious respiration. When the action of the remedy was at its maximum, the jaws appeared to be more firmly closed than before, the mouth being with great difficulty opened at all.

On the following morning another drachm of the acid was again inserted in the same orifice; pulse 44. In six minutes it had risen to 56, from which time till twenty

minutes after its insertion it had risen to 80, which appeared to be the limit of its action. The respiration was increased slightly, but the effects were by no means so marked as last evening.

In the afternoon another drachm was inserted in a fresh orifice made in the front of the chest; pulse 44. In five minutes the pulse had risen to 100, the respiration became increased and laborious, and slight excitement of the system generally followed.

On the next day two drachms of the acid were placed underneath the skin on the near side of the animal, a little posterior to the point of the olecranon. In two minutes the respiration became much increased, and the general excitement so great as to prevent the pulse being taken. In five minutes it was ascertained to be 112. There was then a cessation of action for about three minutes, when a second paroxysm took place, and all the usual symptoms manifested themselves with increased power. In ten minutes the pulse had risen to 148, accompanied with considerable protrusion of the membrana nictitans, and violent excitement of the whole frame; increased and laborious respiration, and profuse perspiration. Another cessation of action then took place, for about the like period, which was followed by a return of the effects, but with less violence. After this the pulse gradually returned to its former state, and with it all the action of the agent disappeared, leaving the original disease unaffected, and of which the animal ultimately died, the usual remedies proving now of no avail, as too often is the case.

From these experiments we learn, at the least, that hydrocyanic acid has an overwhelming influence on the nervous system; also that, in whatever way it is exhibited, whether given by the mouth, or introduced under the skin, or thrown up as an enema, its action is the same. Its application to the unabraded skin was likewise tried; but although a considerable quantity was poured over the surface of the body, no visible effects followed.]

ACTION OF NUX VOMICA ON THE HORSE.

To an aged grey mare, two ounces of the powder of the poison-nut—*Strychnos Nux-vomica*—were administered in the form of a draught, and in about three quarters of an hour afterwards she was allowed her usual quantity of water.

Within fifteen minutes extremely urgent symptoms manifested themselves; violent tetanic convulsions followed, the animal fell, and in about half an hour died in great agonies, from asphyxia.

Second Experiment—

To a bay horse, labouring under acute glanders and incurable, one ounce of the vomic nut in powder was exhibited, and the animal not allowed any water. No effects whatever followed its administration.

The following day, to the same animal, another ounce was given, and in half an hour afterwards he was allowed to drink as much water as he liked. Pulse 60. This was at 3 o'clock.

At 5 p.m., the effects of the agent were being manifested; general excitement was present, and the pulse had risen to 69.

At 6 o'clock the pulse had fallen to 64, and no unfavorable symptom was present. He was now allowed more water, and in about three minutes after the pulse rose to 80, being very full; and the other effects observed were—violent contraction of all the muscles of the body, resembling tetanus; sudden snorting; spasms of the bowels; disinclination to move; loss of power of the extremities, standing with his hind legs placed under the body, and the fore legs wide apart; laboured respiration; glassiness with prominency of the eyes; extreme thirst.

At 7 o'clock the pulse had fallen to 64, and the effects otherwise of the poison were apparently passing off.

At 9 o'clock its action had entirely disappeared, and the animal was feeding as if nothing had been the matter with him. More water was again allowed him, but no further effects took place.

Extracts from British and Foreign Journals.

DIAGNOSIS OF GLANDERS AND FARCY, AND THEIR RELATION TO OTHER DISEASES.

It being admitted on all hands that there is no essential difference in kind between glanders and farcy, that they vary only in severity, and are producible in different individuals by the same poison, there appears no good reason why so confusing a nomenclature should be retained. Farcy is the chronic and less severe form of glanders; in horses it generally begins in the skin, and according, indeed, to a popular but most arbitrary classification, it differs from glanders in never having the nasal complication, which is so prominent a feature in the latter. The differential diagnosis founded upon the last-mentioned symptom can serve no useful purpose, and we cannot but think that great advantage would result if the term farcy were disused entirely, and that of glanders, qualified by the adjectives, *acute*, *subacute*, and *chronic*, alone retained.

Respecting the real nature of glanders, there can, we think, be no reasonable doubt. It is a specific disease, the result of the introduction into the system of a specific animal poison. The opinion maintained by Travers, that its phenomena are no more than the ordinary results of the absorption of dead animal matter, must be abandoned by every one who will carefully examine the facts since collected in reference to it. Excepting, perhaps, however, the nasal inflammation, it has no single symptom peculiar to itself; it is the combination and the course in which they are developed which give it its specific character. Its eruption resembles that of ecthyma, or boils; from other constitutional causes, its subcutaneous abscess, the rigors, sweatings, etc., which follow, remind one of those of pyæmia; and in the phlegmonous inflammation of the parts adjacent to the inoculated spot, and in the great prostration which is rapidly induced, it displays features similar to those occurring after poisoned dissection-wounds. The occurrence of an ecthymatous eruption may follow other animal poisons than that of glanders. It is common, after the bite of the common adder, and may result from the inoculation of the matter of ordinary boils. An instance has quite recently been under the writer's observation, in which a man, in dressing a large carbuncular sore, from which his wife

suffered, got his finger inoculated with the matter; and among the symptoms which followed, was a large crop of ecthymatous pustules in the extremities. Excepting that the one is acute, and almost always fatal, the other slow in its stages, and spontaneously curable, syphilis and glanders present features of marked similarity. In both, the inoculation of pus is required, in both the resulting disease is greatly modified by constitutional peculiarity, not only in severity, but in length of duration. Respecting the inferences to be made from this similarity in pathological character, as to the treatment most likely to be beneficial, we shall have to remark shortly.—*Medical Times and Gazette.*

ON THE FORMATION OF SUGAR BY THE LIVER.

Bernard's theories on the sugar-forming power of the liver have been recently repeated to a very great extent, and in every possible form of experiment, in Paris, by a Commission appointed by the Academy, who have concluded their labours, and have furnished a most gratifying report, fully corroborating all Bernard's original statements. The only subject of doubt or controversy seems to be—whether the liver forms sugar or merely separates it when already formed, as the kidney separates urea; the latter, as is generally known, being formed not in the kidney, but in the capillaries, from the *waste* of the tissues. Section of the pneumogastric stops the sugar-forming power of the liver, while puncture of the medulla oblongata, between the origin of this nerve and the acoustic, by causing irritation of the pneumogastric, on the other hand, increases the amount of sugar, and produces artificial diabetes. The only outlet by which sugar escapes in the natural state from the system seems to be the gastric juice, as in excessive vomiting, or by the kidneys. Animals fed on flesh do not afford the same amount of sugar as those fed on starch or sugar; but the Commission do not think this circumstance invalidates the very original discovery of Bernard, no more than that in hysteria the kidneys form very little urea, and give off pale, aqueous urine. The entire report is of the most satisfactory and practical description, and must modify the treatment of diabetes and other diseases.—*Lancet.*

ON THE DETECTION OF ARSENIC IN CASES OF POISONING.

L. A. Buchner* has pointed out some details of manipulation relating to the detection of arsenic. The method to which he gives preference is that based upon the direct conversion of arsenious acid, by reaction with chloride of sodium and sulphuric acid, into the volatile chloride of arsenic, a state of combination in which arsenic may be very readily recognised by Marsh's test. The use of chloride of sodium and sulphuric acid is also advantageous, because the exclusion of adventitious arsenic is more certain than when specially prepared hydrochloric acid is used.

In adopting this method of separating arsenic, it is requisite that an excess of chloride of sodium should be used, so that the sulphuric acid may not react with organic substances, and give rise to the production of sulphurous acid, which would interfere with the tests to be applied subsequently.

However, Buchner found that, in despite of this precaution, the distillate, though without any smell of sulphurous acid, always gave, when subjected to Marsh's test, instead of the true metallic deposit, a yellow ring of sulphide; and as the zinc used was free from sulphur, he inferred that the sulphur must originate from sulphurous acid, which, reacting with nascent hydrogen, is converted into sulphide of hydrogen. The same result would be produced when the zinc used in Marsh's test contains sulphur.

Before applying Marsh's test to the acid distillate, which would contain the arsenic as chloride, the absence of sulphurous acid must be provided for. This may be easily done by adding a few grains of chlorate of potash, until, when the liquid is gently warmed, chlorine is evolved;—or the formation of sulphurous acid may be prevented in the first instance by mixing with the chloride of sodium a small quantity of chlorate of potash.

The latter method is the better of the two, because decomposition of organic substances is effected in a greater degree by the chlorine generated, and in consequence of that the conversion of the arsenic into its chloride is rendered more certain.

Even the sulphuric acid used in Marsh's test may contain sulphurous acid; in which case it should, when diluted, be mixed with a little chlorine water, and boiled until the excess of chlorine is separated.

When for testing the metallic deposit obtained by Marsh's

* 'Neues Repertorium für Pharmacie,' 1855.

test, the reaction with sulphide of hydrogen is applied, particular care must be taken that the heat applied is only just sufficient to effect the formation of sulphides of the arsenic or antimony; for when, by the application of too high a temperature, sulphur is liberated and mixed with the metallic sulphide, the indications furnished become fallacious. Thus, on the one hand, sulphide of antimony may be so affected by an admixture of sulphur as to resemble in colour sulphide of arsenic, and to remain undissolved by hydrochloric acid gas; while, on the other hand, sulphide of arsenic may, from the same circumstance, be only partially dissolved by ammonia.

With regard to the customary limitation of the search for arsenic, in cases of suspected poisoning, to the stomach and its contents, Buchner is of opinion that it is insufficient to justify an opinion when negative results are obtained. In one instance he found that though arsenic was present in the stomach and duodenum only in such amount as to be barely recognisable, still, when different parts of the intestinal canal were examined, arsenic was found without difficulty. The lower portion of the intestine contained a tolerable quantity of slimy substance, coloured yellow by bile; and here the arsenic was found in largest amount; while in the upper portion of the intestine, which was empty like the stomach, the amount of arsenic was smaller. The author considers it not improbable that in this instance arsenic had been absorbed and excreted by the liver into the intestine.—*Pharmaceutical Journal.*

[The statement in the last paragraph, as to where arsenic may be found after death, does not accord with the investigations made by the French veterinary surgeons on the horse, who experimented very largely with this agent.

We have already, in a previous number, alluded to the effects observed by them, when animals have been poisoned by this agent; but we may be allowed here to repeat, that they have found that however serious the lesions of the large intestines may be, *chemical analysis with extreme difficulty, renders manifest any portion of the poison: but the contents of the stomach usually yield it readily.* The truth is, that even as yet but little is known respecting the remote influence of this poison. The inflammatory action excited by it has not been thought sufficient to account for death. There is one fact that militates strongly against its being so, which is that when this agent has been applied to a wound, death is caused with even more certainty than when it is taken into the stomach, and yet the local irritation may be com-

paratively trifling. It has therefore been conjectured, that arsenic makes its way into the circulation before it terminates life, and acts by destroying the vitality of the blood, rendering it incapable of supporting the irritability of the heart, and the excitability of the brain and spinal cord. Precisely as does the poison of the rattlesnake, and other poisonous reptiles.

That coma and paralysis are occasionally the consequence of remote action is proved by cases lately recorded in this Journal by Mr. Truckle, of Salisbury.]

PURIFICATION OF ARSENICAL SULPHURIC ACID.

L. A. Buchner* recommends the separation of arsenic from sulphuric acid as chloride of arsenic, which is volatilized at a temperature much below the boiling point of sulphuric acid, and is very readily formed by the joint reaction of arsenious acid with hydrochloric and sulphuric acids.

The sulphuric acid to be purified is heated, and a moderate current of hydrochloric acid gas passed into it. The author states that the separation of arsenic by this method is perfect, and easily effected, even when it amounts to considerably more than is usually met with in the sulphuric acid obtained from pyrites. It would therefore have the advantage over the method of distillation, which is imperfect, because the temperature at which arsenious acid volatilizes is too near the boiling point of sulphuric acid, and also, over the method of precipitation as sulphide of arsenic, which is extremely operose. Moreover, it may perhaps have the merit of ensuring the separation of the nitrous acid usually present in crude sulphuric acid.—*Ibid.*

* 'Neues Repertorium für Pharmacie,' No. 3, 1855.

THE VETERINARIAN, SEPTEMBER 1, 1855.

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

A VISIT TO THE VETERINARY SCHOOL AT ALFORT, NEAR PARIS.

A FAVORABLE opportunity presenting itself, we availed ourselves of it, and devoted a day to inspect the Veterinary School at Alfort. From what we saw, we have since wished we had been able to repeat our visit. It will, therefore, at best be but a brief sketch of that institution we can give our readers.

Alfort is a village about six miles from Paris, situated on the River Marne, which flows into the Seine, and near to which is the *Fort de Charenton*, one of the surrounding forts of Paris, constituting part of the outer fortifications of that city.

The appearance of the Veterinary College, as seen after you have passed over the bridge, is noble and imposing. The buildings are large and numerous, and all enclosed, there being at the entrance iron gates, over which wave the national colours.

The director's house, at the time of our visit, was being taken down for the purpose of rebuilding, and with it other offices. All the professors have convenient residences within the walls. Our names having been given in at the lodge, we were soon afterwards introduced to Professor Magne, who very politely conducted us over the establishment. He regretted the temporary absence of several of his colleagues, who were engaged at Paris in a case of arbitration: a very general mode, as we were subsequently told, of settling horse-cases there. We were likewise informed that even when the matter is brought before a court of law, it is not uncommon for it to be referred to the professors of the School, the law-officers often confessing themselves not to

be sufficiently acquainted with the subject to justly decide upon it. But it does not of necessity follow that the professors alone are the arbitrators; three recognised members of the profession are sometimes chosen for this purpose; and in case of their not agreeing, a fourth is selected, whose decision is final. The expenses are defrayed jointly by the parties concerned.

The number of pupils the school is capable of accommodating is 300. At the time we were there 260 were present. They are all residents, and not permitted to go beyond the boundaries of the institution, without especial leave; except on Sunday afternoons, after attendance on the service in the chapel within the walls. They dress all alike; their costume being neat. There are several lecture-rooms, large, and well arranged: also an operating theatre, lighted by a dome in its roof, with seats rising above each other at the back and sides, so that the students can satisfactorily see the performance of every operation; the animal being cast in the centre of the building for that purpose. On either side are apartments for keeping the casting-hobbles, side-lines, blinds, instruments, &c.

The dissecting rooms are spacious, and all that can be desired; being well ventilated, and having water laid on in abundance, with raised seats at the ends. They are divided into one for the students of the first year, and another for the second year's students. Around the walls of the first are suspended separated bones of man, the horse, ox, sheep, dog, &c.; and here and there skeletons are placed for the general use of the pupils. Pulleys also are arranged in frames for the suspension of subjects for dissection. The tables are covered with zinc, and can be moved about on wheels, each having at one end a simple contrivance for raising the subject on them. Osteology and myology constitute the anatomical studies of the first year's class. Splanchnology, with the blood-vessels and the nerves, are the divisions for pupils of the second year, whose dissecting room is correspondingly arranged to the one already described; only that the preparations placed in it vary

somewhat. Between the two rooms is a very convenient apartment for the curator of the Museum. Rarely is it the case that the students of different years interfere with each other; those of the first year finding it quite enough to do to obtain a good knowledge of the bones, their peculiarities, and ligaments, with the teeth, and the muscles of the body; and the second year's students being equally well employed with their divisions of study.

As the scholastic session lasts ten months, and the students must be at least four years in the school, they are required, if not proficient, to go over these divisions again. To ascertain this, periodical examinations, twice in a year, are instituted by the teachers, and if the candidate does not answer satisfactorily, an extension of time is imposed on him, and he has to go back to the first division; so that occasionally, six or even eight years have to be devoted to study; but the latter is very rarely the case, since if the candidate be then unsuccessful, he is no longer allowed to continue a pupil.

The school being immediately under Government, each student pays about £28 per annum for instruction, board, and residence. The rules for the maintenance of becoming conduct, and the order of their studies, are very stringent, and any deviation from them is strictly noticed, and compliance enforced. The diet is both excellent and liberal. The grounds are so tastefully laid out beyond the official buildings, that many incentives to study exist. Shrubberies, and quiet and secluded nooks with seats, abound, so as to lessen the irksomeness of confinement; yet we question if the English student would like this restraint, conducive though it be to his benefit in after life, by the inculcation of correct habits, and the keeping of him from those temptations which prevail in all cities.

But besides all this, there are the botanical gardens, which are of considerable extent, the plants being arranged according to the natural system of Jussieu; and these cannot fail to afford to the students a delightful relief from their severer studies; whilst at the same time they are furnishing their

minds with such information as must be of great use to them when they return to practise their profession in the provinces. The garden is kept in excellent order, and in it are grown most of the medicinal plants that are indigenous, or will thrive in the climate, with the grasses used as fodder for animals, and also those yielding grain, with many of the vegetables required for the use of the establishment.

The infirmary for horses appeared to be well appointed. The patients were numerous ; the horses of the public being now admitted on a payment of about two shillings a day. The boxes and stalls are well ventilated, and kept exceedingly neat and clean.

The third and fourth year's students have a certain number of animals placed under their care, subject, of course, to the direction of the professor of each department, who visits them with the students, and directs what is to be done, of which the latter keep an account ; noting down the symptoms, and the changes that take place, &c. The minor operations are performed by them, after they have given proof of their capability of so doing.

Cattle are also received for treatment ; and a peculiar kind of sheep is kept for sale for the purpose of improving the general breed of the country. The rams are estimated as being worth from £18 to £20 each. They are a small mixed breed, and would not, perhaps, be much esteemed in this country, except for their wool, which is fine.

The infirmary for dogs is spacious. The animals are placed in iron cages, ranged on either side of the building ; and there is a separate one for rabid dogs. We saw several that were the subjects of experiment with this disease ; these being instituted by the director of the school, M. Renault.

We next visited the Museum. This includes many rooms, communicating with each other. The *first* was devoted to the skeletons of the different domesticated animals. The *second*, to diseased and fractured bones. The *third*, to calculous concretions, urinary, intestinal, and others. In it were also specimens of impregnation of the womb at different periods, with preparations of the nerves, and of the blood-

vessels injected and corroded. In the *fourth* room were the various kinds of shoes.

And here we are reminded that we have forgotten to notice in its proper place, that adjoining the dissecting rooms is the forge, in which are fourteen anvils and twelve fires for the use of the students, with all the tools requisite for the shoeing of the horse. They are required to be able to forge a shoe, and apply it in a workmanlike manner to the foot of the animal; but they practise on dead feet to acquire this knowledge. To the bellows, we observed, was attached an ingenious contrivance, by which their bursting is prevented. It consists of a safety valve, which allows of the escape of the carburetted hydrogen gas on its becoming generated—as it occasionally does when fresh coals are put on,—rather than of its passing into the bellows and mingling there with the retained atmospheric air, when an explosive mixture would be formed.

In the *fifth* room were preparations of the muscles of the entire animal: one being characteristic,—a man on horseback; also of the ox, and a species of antelope. The whole of the preparations are enclosed in glass cases, and catalogued. There were, likewise, very large models of the ear, the eye, the lungs, the extremities of the horse, and also of the whole animal, the muscles of which were separable one from the other. Suspended from the walls were numerous anatomical and other drawings and engravings, and in appropriate compartments were specimens of the grasses used as food, the esculent grains, hair, wool, &c.

An inspection of the chemical department was reserved for the last. This is very complete, and we were much gratified. On being introduced to Professor Saunier, he directed our attention to what was most interesting. It should be observed that his instructions are not confined to the science of chemistry, but embrace the principles of natural philosophy or physics, and materia medica with pharmacy. Most, if not all, the pharmaceutical and chemical compounds used in the hospital are made in the laboratory, which is well arranged and in excellent order. The appa-

ratus is very extensive, the electrical and other machines very large; the air-furnace capable of generating a very high degree of heat, and the hydrostatic balance is that used by Berzelius. The Professor's lecture-room is connected with the laboratory—in fact, both form one spacious apartment—which is very convenient, as it enables the lecturer most satisfactorily to demonstrate to his class the mode of preparing the various chemical and other compounds. The pharmacy appeared to be equally well appointed, and several students were acting as assistants.

Before the completion of their studies, for a period of four or six months, according to the progress they make, they are required *practically* to devote themselves to the laboratory and the pharmacy, by which they become conversant with the modes of analysis, and learn to manipulate; and having given satisfactory proof of their proficiency, a certificate to this effect is presented to them.

We have already assigned the reason why our notice of our cursory visit to this, among the first of the veterinary schools in France, is so brief. Doubtless there is much in it both to commend and to copy. It is more than probable, too, it has its defects, for what human design is without them? but these we saw not. One thing, however, struck us as being somewhat singular: that amongst so much that is truly excellent, there was not a library for the general use of the pupils, each being required to obtain his own books for study. This of course might with the greatest ease be procured, and thus the school would, we think, be rendered both more perfect and more useful.

"Fiat justitia ruat cœlum."

A VISIT TO THE IMPERIAL AND CENTRAL SOCIETY OF VETERINARY MEDICINE.

On the day following our visit to Alfort, by virtue of an honour conferred on us some years since, in common with our *compagnon du voyage*, Mr. Ernes, we attended, as honorary members, a meeting of the Société Nationale et Centrale de

Médecine Vétérinaire. These meetings are held monthly, in an apartment of the Hôtel de Ville, Paris. It is a plain and unpretending room; yet it is well when a government thus promotes the interests of science. And we were further convinced that it does so, on observing that many of the members present wore the insignia of the Legion of Honour, as a reward of their literary and scientific labours.

We were each presented, on taking our seats, with copies of the *Bulletin of the Society* for the month, and other works that had been recently published. There was a liberality in this, we confess, we were not prepared for. Again, here is something we might profitably copy from our continental friends and professional brethren. Why all this apathy with us? Why this jealousy? Cannot the members of the veterinary profession in London afford to set apart a few hours of a day, or an evening, if not the former, once in a month, for intercourse on professional matters, and the interchange of those sentiments which bind man to his fellow? Cannot we sink party feuds and professional rivalries, and for once become united in a common cause, that cause being the best interests of the profession? Surely from the adoption of some such plan as this, the profession, as a body, must be benefited; each of us having something yet to learn, while it becomes the duty of every individual member thereof to co-operate. And perhaps it would be as well for us to recollect that we should not be thus acting for our own advantage merely, but equally for those who may come after us. It is true that it has been cynically said, "Man is a selfish animal." Let us then show that there are times, and seasons, and circumstances, when we can exercise a philantropic spirit, and be actuated by those disinterested motives which tend to advance the common weal.

We were still further delighted, after being introduced to M. Leblanc, to be informed by him that he had proposed to the society that a congress of veterinary surgeons should be held in Paris, during the present exhibition, to which the members of the profession of other countries should be invited. We regret, equally as much as he does, that this

proposition was not adopted; for we venture to express our conviction that it would have been freely and heartily responded to by us in England; and thus would have been brought about an *entente cordiale* between the members of the profession in this country, and the Continent generally.

But to revert to the meeting. We are indebted to Mr. Ernes for the following report of what took place:

"After the reading of the *procès verbal*, by the excellent secretary, Professor Bouley, several interesting papers were announced for consideration; among which was one 'On the Amputation of Supernumerary Members in the Domestic Animals,' by Professor Goubeaux, who adduced many instances in which he had successfully removed them, and that without the least hesitation. In some cases, where they were articulated, he had also disarticulated them without any danger, and thereby rendered the animals useful.

"The next subject for discussion was contained in a letter asking the opinion of the society respecting a case of rupture of the rectum of a mare, by a stallion in the act of copulation. During the discussion that followed, it was elicited that this does not happen, as is generally supposed by the introduction of the penis into the anus, but through the vulva, and is caused either by the vigour of the stallion, or the enormous development of the organ. Although there was a diversity of opinion on the subject, the decision of the meeting was, that the owner of the mare had no just claim for damages.

"Mons. Rossignol laid on the table the ossa humeri of a horse, both of which were fractured in the following manner: the horse had been purchased for the omnibus service in Paris. The animal, as is usual in this service, had been allowed three days' rest, after which he was put to work. This he performed very satisfactory, but in the course of the day he was found unable to support himself, and ultimately fell and could not rise again. On examination the fractures were discovered, and he was ordered to be destroyed.

"An animated discussion arose as to the cause of these fractures, the horse not having received the slightest external injury either by falling, stumbling, hurt, or blow.

"Mr. Ernes asked the *parole*, which is the rule before any member can take part in the proceedings of the meeting, and related a similar case which occurred in his practice about two years ago. The subject was a well bred horse, the property of a miller, used by him in a gig, for the purpose of calling on the bakers. The pace at which he was driven was from eight to ten miles in the hour; but there were necessarily frequent stoppages. The horse had been out from half past nine in the morning till about four in the afternoon, when on coming round an obtuse angle, caused by the junction of two roads, he suddenly fell lame and was unable to proceed. He was taken to an inn close by, and Mr. Ernes sent for, who on examination discovered a fracture of the humerus, and advised the owner to have the horse at once destroyed.

"His opinion as to the cause of this fracture was, that, in the absence of an external injury, which seemed to be the case here, as well as in the instance under consideration, inordinate muscular contraction alone could have produced it. This statement called forth some controversy. Many members agreed with Mr. Ernes and others disagreed. Some contended that no muscular power could fracture bones of the thickness of the humerus; and others thought that there was a want of density in the structure of the bones, and suggested the analyzation of them; but this seemed to be contradicted by a careful examination of them, made by Mons. Rossignol.

"The next subject in order was a ruptured bladder of a dog, laid before the members by Mons. Leblanc; but as the time of the meeting had expired, its investigation was not entered into."

We have thus ventured to throw out a few suggestions, with a view to copy from others that which might prove beneficial to ourselves. We speak, "as unto wise men," being convinced that the present state of things is favorable to much being done. The profession has made considerable advance of late years, and we are anxious to promote its continuance in well being and well doing. *All* we desire may not be effected at once. Indeed it may be that a future age alone will fully realise it; yet the plans being laid down by us, and the preliminaries

entered upon, we have an earnest of their completion by those who will hereafter take our places, for with them the conditions will necessarily be even more auspicious and the result certain.

Veterinary Jurisprudence.

Bromyard County Court.

(Before Benjamin Parham, Esq.)

Patrick Gilmour v. *James Lucas.*—An action to recover £13 10*s.*, being the difference in price from the resale of an unsound horse purchased by plaintiff from defendant, and other expenses attending such resale. Mr. Bray conducted the plaintiff's case, and Mr. Bartley, of Worcester, that of the defendant.

Plaintiff deposed to being a farmer, residing within two miles of Bromyard. In the spring of last year he lost two horses, and it was necessary that he should replace one. The horses died from kicks. On the 21st of March he was taken by Samuel Mutlow, farrier, Bromyard, to defendant's house to look at the horse. Lucas said the horse had gone to the Clee Hill for coal, and defendant would send the horse over next day. George Lucas, the son, brought the animal to Bromyard fair, and after some parley was purchased by Mr. Gilmour for £16, George Lucas warranting the horse "*whole, sound, and free from blemish,*" the warranty being repeated several times. Mr. Crawford was present. After the purchase of the horse, plaintiff gave defendant a check on the Bromyard Branch Bank of the National Provincial Bank. Lucas again repeated, in the presence of Crawford and Mutlow, that the horse was all right, and plaintiff said that as Mutlow was present, he should not require a written warranty. Next day, or a day or two after, deponent's waggoner mentioned to him that the horse was nearly blind. Plaintiff saw defendant on the 6th of May, and told him that he had been advised by Mr. Eckley, before taking proceedings, to request him (Lucas) to fetch away the horse which he had sold him for a sound one. Defendant replied, "Why didn't you send him back sooner." Gilmour observed that he had seen his (defendant's) son in Bromyard, and told him the horse was unsound; the latter said he should have the animal again. On the 17th of May plaintiff took the horse to Mr. Hughes, veterinary surgeon, Leominster; he examined the animal, and pronounced him unsound. Next day (May 22d) he was placed at livery at the Hop-pole Inn,

Bromyard, where he remained till the 4th of June, for which £1 13*s.* was paid. The horse was then sold by Mr. John Oakley, the expenses and deficiency in the sale making up the amount now sought to be recovered.

A long examination by *Mr. Bentley* followed, but nothing was elicited to damage plaintiff's case, though he admitted that he had not examined the quadruped's eyes.

Mr. James Allen Hughes, veterinary surgeon, Leominster, examined the horse on the 17th of May, and clearly proved that the horse was unsound: on the off eye was a cataract, and one forming in the near eye. The disease was of long standing; it would take five months in forming that cataract which was formed. If the party looked in the eye he would see it; it was visible to ordinary people; the cataract was white; if the horse had been brought out, any one would have seen it. Mr. Hughes fully explained to the Court the nature of cataracts, also of side-bones, from which the animal was lame and went "crimpling;" the third disease was a thrush, but this was not considered of any account.

Mr. J. Crawford deposed to being present at the Queen's Arms, on the 22d March, when Gilmour was buying the horse from Lucas; the latter warranted the horse sound, but witness said he could not, and told Lucas that the horse was not sound; he appeared stiff about all his legs; he did not look at the animal's eyes; his legs were very "shaggy," and he was quite stiff about the fore feet.

Samuel Mutlow, farrier, Bromyard, proved the delivery and warranty of the horse.

Mr. Bentley addressed the jury for the defendant.

His Honour summed up the evidence, and the jury returned a verdict for plaintiff for £13 10*s.*—Attorney's fee allowed.—*Hereford Times.*

MISCELLANEA.

THE GOUWA (BOS FRONTALIS) OF WESTERN INDIA, CALLED THE BISON BY ENGLISH RESIDENTS.

By Captain J. Wycliffe Thompson.

Concerning the above animal, Mr. Thompson read a very interesting paper before the Zoological Society, on the 23d of November. It has since appeared in the 'Annals and Magazine of Natural History,' from which we make the following abstract. The size of the gouwa Mr. Thompson cannot exactly say; he had no means of forming an estimate, except by viewing the carcass of one of these animals lying upon the ground. If we are to put credit in Indian sportsmen, the old bull stands six feet four inches at the shoulder.

Mr. Thompson is inclined to accept this estimate, he himself having formed an independent opinion that the size of the old bull was equal to that of a large London dray-horse. The colour is chocolate brown, deepening in shade underneath; the lower part of the leg is of a dirty yellowish white. The shoulder is raised; not, however, into a lump, like that of the Brahmin bull or common Indian ox, but into a kind of ridge, giving the idea that the spine, beginning at the shoulder, had been naturally raised and carried some little distance further back, and then allowed suddenly to drop into the ordinary level of the back. The only part of the country in which these animals have been met with is in the Suhgadre mountains, or western ghauts—a narrow belt of wild, broken, and thickly-wooded country, dividing the high lands of the Deccan, or Maratha country, from the low land of the Coucan, or country bordering the margin of the sea. . . . . This region, so strangely configurated, is of but inconsiderable width, though of great length: it forms a narrow line of demarcation between Coucan and Deccan, and would scarcely appear to furnish elbow-room sufficient to animals so large as the gouwa. He holds to it pertinaciously, nevertheless, on no occasion wandering far on either side. According to Mr. Thompson, the gouwa, or East Indian bison, although resembling the North American buffalo in some respects, differs from him in others. The Indian animal has the character of great fierceness, but, from the accounts we have of him, he is somewhat stupid. Our narrator goes on to say that "the natives, though they hold the ferocity of the bison in considerable respect, do not seem to consider him an animal of very acute perception. I re-remember a 'shikarry,' or native huntsman, pointing out to me a patch of long thin grass, lying close by a small path across a hill-top, and affording nothing that I should have considered very good concealment, and telling me that I might safely, on emergency, lie down in it and let the bison pass along the path."

The flesh Mr. Thompson describes as the best beef he ever tasted; nevertheless, the gouwa is not so much persecuted as one might suppose—all the high caste people holding the bison to be a sort of cow.

ARMY APPOINTMENTS, &c.

"Veterinary Surgeon Withers, Royal Artillery, has returned, in charge of the horses of the late Field Marshal Lord Raglan."

HEAD QUARTERS, BEFORE SEBASTOPOL.

"Veterinary Surgeon T. Hurford, 12th Lancers, is appointed to take charge of the horses and mules attached to the railway, as a temporary measure, with additional pay at *5s.* a day, from July 23."

WAR OFFICE, *July* 27, 1855.

"10th Light Dragoons, J. Barker, Gent., to be Veterinary Surgeon, *vice* Siddell, deceased."

WAR OFFICE, *Aug.* 17, 1855.

"To be Veterinary Surgeons, attached to the Horse Artillery.
"J. K. Lord, Gent., M.R.C.V.S.
"E. G. Nixon, Gent., M.R.C.V.S."

On the 5th of June, 1855, M. H. Boûley, Clinical Professor in the Imperial Veterinary School of Alfort, was elected Member of the Imperial Academy of Medicine, subject to the Emperor's approval.

At a meeting of the Helvetian Society of Veterinary Surgeons, held in Schaffhausen, on the 23d of July, 1855, Mr. John Gamgee was elected an honorary member. A similar honour was conferred at the same meeting on Professor Gerlach, of the Royal Veterinary College of Berlin.

OBITUARY.

Died, August 2d, 1855, of tubercular consumption, following a severe cold, which at the first was thought little of, Mr. Joseph Snow, M.R.C.V.S., of Salisbury, aged 44 years. Mr. Snow obtained his diploma in 1834, and afterwards settled at Salisbury, where he carried on an extensive practice, being much respected by his employers; so much so, indeed, that "the nobility and gentry in the immediate neighbourhood, placing the utmost confidence in his advice and opinion, continued to give him their support, although he was obliged to leave the management of the business entirely to an assistant for a long time before his death."

We have also been informed of the death of Mr. J. Lane, of Australia,—and Mr. T. S. Biggs, who was conducting a business at Chippenham. The former obtained his diploma in 1848; the latter in 1852.

Surely this is a transitory state of existence.

"Friend after friend departs."

ERRATUM IN NO. 332.

For H. T. Copeman *read* Arthur Copeman.

THE

VETERINARIAN.

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Communications and Cases.

ON CALCULAR CONCRETIONS AFFECTING HORSES IN INDIA.

By J. Western, M.R.C.V.S., Horse Artillery, Bangalore.

Dear Sirs,—In the *Veterinarian* for last March there is a well-described case of Cystic Calculus, with a successful operation for its extraction, by Professor Spooner. He says, p. 125, "occasionally crystals of oxalate of lime are found associated with those concretions taken from the horse. Especially is this the case in those specimens forwarded from India." He then asks, "Will our friends inform us if calculous affections are common in that country, and what are the probable causes that give rise to them?"

I have been now nearly twenty-eight years in active service in this country, and strange to say, have never met with a single case of Calculus, either intestinal, renal, or cystic, and yet I need scarcely add I have never allowed a strict *post mortem* to escape me. This will answer both inquiries; but still I feel it due to say that I have heard from other practitioners of cases of both intestinal and cystic calculi, but never renal; although I see no reason why such should not occur here as well as elsewhere.

I am glad to see the microscope is becoming one of the instruments in use with the profession, for it opens paths to us of information that otherwise must be closed. I have for a long time been engaged in the examination of the urine, under various circumstances, and am fully aware of the value of the instrument. Professor Spooner says, in the paper above quoted, that crystals of oxalate of lime are sometimes found in the urine of the horse. I have not hitherto been successful in meeting with these, although I have anxiously

sought for them. In human urine I have found them; but in that of the horse the crystals of carbonate of lime are most abundant. I have by me a slide prepared from the urine of a patient (an officer's charger of the 1st cavalry) that was suffering from Hæmaturia, in which these crystals exist in enormous quantities, in the spheroidal and likewise in the *dumb-bell* form, like the oxalate. In each instance they are evidently formed, as Professor Spooner describes them, "of minute needles radiating from a centre." In this case I immediately had recourse to acids, and with the happiest results:

℞ Sulph. Acid., ʒij;
Aquæ pura, ʒx.
To be repeated in twelve hours.

I had no occasion for further treatment, except secondarily, acting on the urinary organs by means of a purgative, after the cessation of the hemorrhagic discharge. I have repeated this treatment in two or three similar cases, and with the same result, and have reason to hope it will be the means of saving considerable trouble, for such cases as this are very common here. I ought to state that the slide alluded to contains also large specimens of pavement epithelium, evincing, I should surmise, that the disease was affecting the kidneys and ureters more than the bladder.

I write this at the last moment for the mail I have some other cases in store for you by-and-by. Truly yours.

VETERINARY PRACTICE IN AUSTRALIA.

My dear Morton,—I send you a line relating to professional matters in this part of the world, for the *Veterinarian*, which I am delighted to find is now in the hands of yourself and colleague.

First. As to the diseases of the horse of this colony: they are, so to speak, very few. The animal seems to be well adapted to the country, enduring much more fatigue than the English horse could on the same keep. I rode one the other day, taken directly from grass, eighty miles up the river Murray in a day, to visit an entire horse. The next day I caught a fresh horse and rode him back the eighty miles, and when I got home I was far more tired than my hack.

The breed of horses is very good out here. We have a son of "Touchstone's," one of "Cotherstone's," and one of "Ugly Buck's," besides many Arabs from Calcutta, and which, I

believe, impart such powers of endurance to our horses. Our draught horses are also very good. We have many that would be no disgrace to the London brewers' dray, and we are doing very much to improve the breed generally. I purchased an imported Lincolnshire cart-horse, named "Aggravation," who took the prize at your Peterborough show, for a Mr. Robinson, a large breeder here, for £750, and entirely for his own use. This will show you that we are paying good attention to horse-stock, and I think in a few years we shall stand A 1.

The worst disease we have to encounter is ophthalmia. This chiefly occurs during the summer months, and particularly when we have the hot winds from the north. You can have no idea of these winds. I have seen the thermometer stand at 113° this summer, and that in the shade, and the dust blowing so thickly that you could not see fifty yards before you. On one such occasion, I had twelve horses in the same stable all nearly blind. Some of them had the disease very slightly, and soon recovered by local bleeding and fomentations, screening the eyes from light, and exhibiting a dose of aperient medicine. Three, however, out of the twelve lost their sight. One I bled, purged, setoned, and otherwise attended to until I was tired of treatment. He got better at last, and apparently without deriving much benefit from what had been done. One day you would think the horses' eyes were quickly recovering; the next you would find them worse than ever: in this way the disease fluctuates until both the owner and practitioner get heartily tired of the affair.

After I obtained your valuable Manual of Pharmacy, I determined to give trial to colchicum, and prepared twenty-four balls, containing ʒij each of this agent. Four horses labouring under the disease were selected, and I commenced giving one ball every morning. This was continued for a fortnight. Upon two of the animals the colchicum produced a relaxed state of the bowels, after seven or eight doses had been administered; and, in consequence of this, I reduced it to ʒj daily. It had a decided effect upon the disease at first, which led me to expect great things from it, but I was soon disappointed, for the disease returned again with all its former severity. Notwithstanding this, I still mean to persevere with the colchicum, as it certainly exercises a more decided action upon the disease than any other remedy I have yet adopted.

With reference to other maladies, I may remark, that glanders has never yet found its way to this country, and I

sincerely hope it never will. I have made many inquiries on this subject, and have not heard of a single case, nor seen anything approaching to it. As a general rule diseased horses get well much quicker here than in England.

In castrating colts, we first drive them into the stock-yard, then get a rope, with a slip knot, over their heads, and pull at it until they fall from choking; their legs are then secured, and the operation performed. Immediately afterwards they are turned out again. I never knew one of them ever take any harm. All our colts are very wild, as they are never put into a yard or handled, except when old enough for the market.

There are now many wild horses in the back country that have got from the runs, and are herding together and breeding, as do the cattle and pigs, of which we have immense numbers. I am sorry that I have not more interesting matter for you, and I fear that this is ill-suited for your excellent Journal; howbeit, it is at your service to do with it as you please. Trusting that many days of happiness are in store for you,

Believe me to be yours truly,

S. Mortlock.

Adelaide, South Australia;
June 25, 1855.

OSTITIS AFFECTING THE RIBS OF A HORSE.

By Jas. Moon, M.R.C.V.S., Kingston.

On the 22d of Nov., 1854, I was sent for to see a bay gelding, belonging to B. —, Esq., of Esher, which was said to have a small swelling on his near side. On examination, I found the enlargement, which was about the size of a bantam's egg, to be situated on the 9th rib, eight or ten inches below the spine. I imagined that it was caused by a blow against the box door, as the horse had been lying in a loose box for a month previous to this time, in consequence of lameness of the near fore limb. The enlargement was hard, and not very sensible to the touch. I therefore gave directions that it should be well fomented with tepid water, and have some discutient lotion applied to it three times a day. I likewise administered an aperient, consisting of Aloes, ʒvj.

On the 24th, no reduction of the swelling having taken

place, I had it well rubbed night and morning with Lin. Sapon. C et Ol. Tereb.

Dec. 1st.—As the enlargement is increasing, and still continues hard, it was blistered; and on the 8th and 15th the Ung. Hyd. Biniodid. was well rubbed in. From this date the animal began to show symptoms of greater lameness, and moved on one side, dragging his near fore leg along the ground. By the 22d, the swelling had increased considerably, and had now become soft, with every indication of fluid being contained within it, but yet it did not feel like an ordinary abscess. There was no pointing at any one spot. Notwithstanding this, I determined to open it, when I gave exit to a small quantity of blood and a serous-looking fluid, having a fetid smell. I was enabled to pass a probe into the opening to the extent of eight inches, but could not even now quite satisfy myself of the true nature of the case. The parts were dressed with Ung. Tereb., with a hope of obtaining a discharge of healthy pus.

From this time the swelling increased to such an extent, that the owner wished to know if I had any objection to another opinion being obtained. To this I readily assented, believing it to be a very unusual case; and on the 27th, Mr. Mavor, jun., met me in consultation. Mr. Mavor thought that the case bore several features of an aneurismal condition of some of the adjacent blood-vessels. He extended the opening which I had made, gave orders that the surrounding parts should be kept well wetted daily with cold water, and the cavity filled up with pledgets of tow. After this, for a day or two together, blood would ooze from the wound, to the amount of a gallon, or even more. The fetor also became so great that it required dressing twice a day with Sol. Calc. Chlor. The animal now lost flesh very fast, although he fed well, and which he continued to do up to the middle of January, when he gradually lost his appetite.

On the 20th, a surgeon, a friend of the owner, saw him, and considering with myself that there was no chance of the animal's recovery, he wished that the opening might be still more enlarged, and the parts further examined. The operation was accordingly performed, the incision being increased to about fifteen inches in length. By this means a large clot of coagulated blood, which must have weighed at the least fourteen or fifteen pounds, was removed; and on examination with the fingers, I could now distinctly feel two of the ribs denuded of their periosteum, and presenting quite a roughened surface. From this cause I was inclined to believe that they must have been originally broken, and that at

length my case, which I could never thoroughly make out, was satisfactorily accounted for. The wound was now dressed daily with a disinfecting fluid, and each time filled with pledgets of fine tow. For a few days subsequent to the operation, a small amount of relief was seemingly obtained; but very early it became apparent that there was no chance of ultimate recovery, and the animal was consequently destroyed on the 10th of February; about twelve weeks from the time of my first seeing him. The post-mortem examination very satisfactorily accounted for the phenomena which attended the progress of the case. Three of the ribs, the eighth, ninth, and tenth, but the ninth in particular, were found to be extensively diseased. They were increased in size and altered in contour, from a loosely compacted osseous deposition on their surface. This readily gave way before the knife, and was everywhere in its substance thoroughly saturated with blood. A section carried through the ribs showed that their osseous structure was also changed throughout It was spongy and porous to a remarkable extent, having the cancelli likewise filled with blood. Little or no normal bone-structure was found in the ninth rib, and only here and there in the others.

The cavity which I have described as containing a large clot of blood was found to have its walls chiefly composed of coagulated fibrine. It was evident that the blood had oozed, as it were, into it from the dilated vessels of the affected ribs, and being now exposed to the free action of the air, went gradually into a state of decomposition, giving rise to the fetor which was found to be so prominent a feature in the case. The disease probably had a local origin, although it could not be connected with any injury *immediately* preceding the tumefaction on the side. The lameness evidently was symptomatic, being caused by the pain attendant upon the movement of the muscles in the vicinity of the affected parts.

CASE OF MULTIPLE TUMOURS.

By E. J. King, M.R.C.V.S., Diss.

The morbid parts I send for your inspection, consisting of the liver, diaphragm, bladder, &c., of a horse, were removed yesterday from a patient which had been seen by me for the first time three days since. The history of the case is briefly this:

On Friday last, August 10th, I was requested to attend a horse, the property of a farmer in this neighbourhood, that had been under the care of a farrier, for a dropsical condition of the scrotum, sheath, &c.

Upon my arrival I found the animal, a fine, aged horse, in good working condition, suffering much weakness from the treatment to which he had been subjected, and which it is hardly necessary to say had consisted in the withdrawal of blood, and the giving of a dose of physic. The pulse was both weak and irregular; and considerable swelling of the sheath and inferior parts of the body was also present. The bowels were much excited by the medicine he had taken. Besides these symptoms, there was a total loss of appetite, chilly extremities, pallidness of the visible mucous membranes, and in fact every indication of prostration, to an extent to mark approaching death. I ordered diffusible stimulants, with vegetable tonics, and plenty of support in the shape of good gruel, &c. The patient continued in a standing position until the Saturday morning, when he laid down, evincing considerable pain in so doing. From this time he gradually sank, and died in the afternoon of the following day.

I should mention that, on the day I first saw him, there appeared to be a difficulty in his passing his urine. This led me to examine the bladder, when I discovered that a tumour existed in connection with the coats of the organ. On mentioning this to the owner, he observed that he had noticed him to stale in very small quantities of late, but with that exception, he appeared to him to be well, and had done his regular work up to Tuesday last.

I further ascertained, however, that he had been noticed to grunt very much when put to severe exertion, and that he had generally a cough, but was not considered to be broken winded. He had also had several attacks of inflammatory œdema, but which always gave way to the usual treatment. On making my *post mortem* examination, I was astonished at the extent to which the several organs of the abdomen were diseased. There was scarcely one but was affected with growths of tumours, varying in size from the head of a pin to the extent of a man's fist.

Along the whole course of the large intestines there were also to be seen more or less of them.

I am at a loss to account for their presence with so little constitutional disturbance, but it is evident there is nothing *malignant* in their nature; and I attribute the œdema entirely to their mechanical pressure upon the blood-vessels. With these specimens, I also send you a portion of the pos-

terior aorta, and the vessels immediately connected therewith, which I took from a case of

OBLITERATION OF THE ARTERIES.

The patient was an aged horse and had been worked for many years on a farm, but was very small for such a purpose. In the winter of this year he was attacked with lameness, which however, subsided, and he continued to work until a month since, when I saw him.

He was now observed to be lame in both hind legs, the near one being the worst. There was no heat, or enlargement, nor in fact anything to account for the lameness. When submitted to exertion, his breathing would become accelerated, the pulse rise, and profuse perspiration bedew the surface of the body. If not taken from work, he would drop in the field, and evince symptoms of acute pain, but which usually subsided in about half an hour, when he would commence eating as if nothing had been amiss.

I examined him about a week since, *per rectum*, and found a peculiar condition of the terminal portion of the posterior aorta. There was an evident want of force in the pulsation, and a hardened state of the vessel when pressed by the hand. I informed the owner that I feared there was a diseased state of the aorta, producing an obstruction to the free passage of the blood to the hind extremities. I was further convinced of this from the coldness of the hind limbs when compared with the other parts of the body.

As he was an aged horse, and I considered it a hopeless case, he was destroyed. With the diseased vessels I send you the flexor tendons of the near hind leg, which you will see are of a peculiar colour. The tendons, however, of all the limbs were in the same condition.

All the arteries supplying the anterior parts of the hind extremities were in the same plugged up state as those I send; in fact, you might trace them as well as if they had been prepared by injection for dissection: the other vessels of the body were all healthy, as were also the viscera. The muscles of the limbs did not appear to have suffered.

[These specimens arriving during our absence from town, we are indebted to Mr. Assistant-Professor Varnell for the following report upon them, and likewise for the analogous case which is subjoined.

The parts consisted of about three inches of the posterior aorta and its divisions into the internal and external iliacs

and their branches. The vessels of the external iliacs, as sent, would reach as low down as the animal's hocks. We are to understand that Mr. King, in using the expression "the arteries supplying the anterior parts of the extremities," means that the anterior tibial arteries and their branches were plugged up, and that those posteriorly situated, namely, the posterior tibials and the popliteals, were free from such obliteration.

The coats of the affected vessels were slightly attenuated, and in consequence of this condition, the outer concentric layers of the fibrinous plug within was visible through them. The plug itself, at its superior part, was of a whitish yellow colour, but lower down the vessels, a considerable number of red particles were entangled in the clot, thereby giving to the arteries themselves a purplish aspect. On examining the inner surface of the vessels, their serous or lining membrane was found to be quite free from any direct adherence to the fibrinous plug, and which could consequently be easily removed, leaving the membrane in a normal state.

In the *Veterinarian* for 1852, p. 270, *et seq.*, a very interesting description is given of a similar case to this. The animal was brought under the care of M. Bouley, professor of pathology at Alfort, who was enabled from the peculiarity of the symptoms to correctly diagnose the case. The horse was affected with lameness in the near fore leg, and nearly all the principal arteries of the upper portion of the limb were found to be obliterated, from fibrinous depositions.

I am enabled also to add the following brief description of a case which occurred in the practice of Mr. George Austin, of London, to whom I am indebted for the particulars. The horse was about nine years old, and in very good working condition. For twelve months previous to his death he had on several occasions shown symptoms of disease resembling spasmodic colic, and had also been observed to be lame of his off hind limb. In August 1852 he was attacked more severely than usual while in harness, and so intense was the pain and lameness that the groom had very great difficulty in getting him home: in fact, the man thought the horse's leg was broken, so little could he use the limb. Mr. Austin was sent for immediately, and on his arrival found that no abatement in the severity of symptoms had taken place. The breathing was very much disturbed: he was sweating profusely; his pulse was much accelerated, and marked indications of acute abdominal pain were likewise present. Although the horse was in a profuse perspiration, the hind limb alluded

to was, on the contrary, dry, cold to the touch, and quite paralysed. He died twenty-four hours after the attack, having suffered intensely throughout. I was requested to assist in the *post mortem* examination, but being engaged, Mr. Austin conducted it by himself. He informed me that the viscera of the thorax and abdomen were quite healthy, as were also the brain and spinal cord; but on tracing the course of the large blood-vessels, he found that the right divisions of the posterior aorta were completely plugged up by layers of fibrin arranged in a concentric manner. This condition of the vessels extended for at least ten inches. Their coats were not in any way thickened, or gave other indications of disease.]

ON THE ACTION OF MATICO.

By F. De Fair Elkes, M.R.C.V.S., Manchester.

My dear Professors,—The subject of my present communication is "Matico" and its effects as a styptic. Your kindness in noticing the "herb" in a previous number, and the fact of its comparatively rare use medicinally, have led me to make both inquiries and experiments in order to test its merits as a styptic, etc.; and the following cases in human, not veterinary practice, have fallen under my notice, and are, I think, interesting, as throwing some light on its action as a medicine. The parties I name are personally known to me.

Mr. B— had occasion to have a posterior molar extracted from the superior maxilla, and after the operation it was found that excessive hemorrhage resulted—doubtless a branch of the infra-orbital, or the alveolar arteries was injured. The usual means for arresting the escape of the blood were adopted without benefit—for the flow was continuous and unimpeded, and the effects soon became too visible in the emaciated condition of the sufferer. The patient was placed on a low diet and in a cold room. Several days elapsed, but still the hemorrhage continued. There was more than one consultation on the case, all resulting in nothing beneficial being adopted, for both physicians and surgeons seemed quite at a loss what to employ to save the ebbing life of the patient, who was fast sinking under the combined effects of loss of blood and meager fare. At this juncture a friend of the family visited them for the purpose of assisting in watching the patient, and was informed that the doctors gave very slender

hope of being able to stop the bleeding; the inference being that if they did not a fatal termination might be expected, (a proximate result, indeed, judging from the condition of the sufferer.) This friend having faith in a medical practitioner, although a "quack," requested that he might be allowed to see the patient, and after a certain repugnance was overcome, the family consented, but without entertaining the slightest hope of any benefit resulting. He visited and examined the patient, and informed his friends that he could arrest the hemorrhage in from twenty minutes to half an hour, and ordered food and warmth to be allowed. The latter part of his directions were attended to through the intercessions of the friend, but he was not allowed to try his remedy, which he made no secret of, nay said, in fact, he should use Matico.

The medical men were summoned and told of the opinion of the "quack." They strongly condemned the disobedience to their orders regarding temperature, etc.; but as the case was getting desperate, they professed their willingness to confer with the practitioner who had promised to do so much, but on hearing his name they would not degrade themselves by such companionship. They were then pressed for an opinion as to the termination of the case, to which an unfavorable answer was given, adding that all that could be done had been, and again ordering the old *régime*, cold, etc. On hearing this, the friend replied, "As he is to die he shall not do so without another effort being made, and as you can do nothing more, Dr. C. shall try his *Matico*." Being informed of this they consulted, and asked for a further time, (twelve hours), and said that if the patient was not relieved in that time they would give up the case. This was agreed to, and after some hours had elapsed they returned and ordered all persons out of the room; but the friend pertinaciously refused to quit, and was of necessity allowed to remain. A small box was produced by one of the number (four being present), and a portion of a *powder* it contained was applied. On their being pressed for the name of the remedy they reluctantly owned it was "Matico," which they had sent to London for, thus adroitly profiting by the old herbalist's experience, or why not have used it before? It proved perfectly successful, and the patient rapidly recovered his usual robust health.

The second case is a friend of mine and once a schoolmate. He has long suffered from weakness of the chest, accompanied with spitting of blood, cough, &c. After returning from college, I put in force my resolution to test the power of "Matico" practically; and as, in my opinion, the san-

guineous expectoration proceeded from rupture of some of the minute bronchial vessels, I persuaded my friend to take small doses of the tincture of matico. The effect is remarkable, for although the cough continues, there is no longer any blood expectorated with the phlegm, nor is there the same soreness of the trachea and bronchi; consequently, the cough has become somewhat less severe of late.

I have also during the pursuance of veterinary practice employed matico to incised and lacerated wounds with much success, and have found it fully deserving the high eulogy pronounced on it by the so-called ignorant natives where the plant abounds. I consider it merits a place in our pharmacopœias, and likewise in the medicine-chest of every army surgeon, whether human or veterinary.

Should you think the above worthy insertion in your Journal I shall feel honoured. I have not given names, but should you require them I can do so.

I remain, dear Sirs, yours obediently.

INDIAN VETERINARY PRACTICE.

By Capt. William Hickey, Second in Command, 15th Regiment of Irregular Cavalry, Lahore.

Sirs,—Although not a M.R.C.V.S., I have been a subscriber to your Journal for the last twelve years, and have observed, with regret, that the members of your profession in this country contribute but little to the columns of that periodical. With the exception of an *occasional* letter from Messrs. Western, Hodgson, Hurford, and Nelson, I never see any account of the diseases or treatment of horses or cattle in this part of the world. How is this? It cannot be that veterinary surgeons in India have no practice, for they have an immense field for it, not only in the charge of government horses and oxen, but also in that of private individuals. It cannot be that they have no leisure, for their time is their own. What is it then? I expect it is downright laziness and nothing else! They are content just to visit their hospitals once a day, to set at home at ease, and long for the time to come when they can leave this country for ever.

I dare say you (and they also,) think it presumptuous in a non-professional person like myself to write about these

matters. My excuse is my fondness for the profession; for although not one of you, I have studied the art theoretically and practically since I was a boy, and hope some of these days, when I return to Europe, to get a diploma from your College.

Being in the mounted branch (irregular) of this service for the last eight years, I have had a very large practice. There are 595 horses in each regiment of irregular cavalry. These horses are the private property of the troopers themselves. The state neither buys, feeds, clothes, nor "doctors" them; and as the natives have but little knowledge of the diseases or curative treatment of horses, there is, as you may imagine, a great mortality amongst them. Whether in the field or in cantonments, all the hard work falls on our regiments, consequently our "sick lines" are generally full. Colic, enteritis, pneumonia, catarrh, strangles, fistulous withers, and bruised feet are the chief diseases and ailments, with now and then a case of paraplegia.

We have as many mares in the regiment as horses, and it is astonishing to see how well they work together. Now and then, I have to castrate a rampant colt or two. Talking of castration, this puts me in mind of the "official correspondence" I saw in a late number of the *Veterinarian* regarding a diabolical method of emasculation that obtained in the Poonah Irregular Horse. This method is the only one the natives ever use in gelding their cattle, but it is a most cruel and barbarous operation. I have castrated upwards of 1000 horses since 1846, *of every age, size, and caste, and in every season of the year,* and I am proud to say I lost but *one,* and that one was an aged carriage horse belonging to my uncle the late General Gilbert.

My plan, which of course is nothing new, is this. After throwing the animal in the usual way on his near side, I draw his off hind leg up to his shoulder, grasp the scrotum tightly with my left hand, and with the scalpel in the right make a free incision, laying bare the gland; slip the testicle out, sever the vas deferens, apply the patent steel clams, cut off the testicle, and *slightly* touch the artery and veins with a hot iron, and then release the cord. These things being repeated on the remaining testicle, the animal is released. I seldom, if ever, give the horse any preparation beyond stopping his corn for two days previous, and two subsequent to the operation. From the day he is cut, he is taken out for walking exercise, morning and evening, and in ten days he, if a regimental horse, rejoins the ranks.

Concerning "Bursautee," I have never yet seen that vile

disease cured;—by cured, I mean eradicated. The sores invariably dry up and heal after a while, but the horse is liable to the disease every rainy season. I content myself with the constant use of astringents and escharotics, and often touch the ulcers with a hot budding-iron; feed well, and give plenty of exercise

In some of your late numbers I see mention made of the native blistering fly, *Mylabris cichorii*. When I was stationed at Neemuch in 1848-49, I collected large quantities of them, and have used nothing else in my blistering liniment. They are much stronger than the Spanish fly, and do not affect the kidneys in the same way. When caught, I killed them with the steam of boiling vinegar,—a superior plan to that used in the medical depôts, where they kill them by immersion in hot water. By my method their strength is not impaired, besides which, insects will not eat into them. For use, I boil one ounce of bruised flies in one pint of linseed oil, and strain. This I find a most effective blister, and it never blemishes.

I must now bring this rambling letter to a close. Should you like to hear from me again, tell me so, and I will have much pleasure in sending you an account of any interesting cases I may meet with. You must not be too severe in your criticisms, remember I am only an amateur. Wishing the *Veterinarian* every success under its present able editors, I remain, your obedient servant.

[We believe we have many friends in the profession in India, and although we might not, from feelings of respect towards them, have chosen so freely to speak our minds, yet we cannot refain from stating that the animadversions contained in the above communication are somewhat deserved.

As there is nothing covert in the act, and as the writer comes forward boldly, manifesting besides a right feeling, we hope they will accept the reproof in the spirit it is evidently meant.

We have always thought that our brethren in the far East might do more towards the advancement of the art than they have hitherto done; and it is, therefore, a source of much gratification that we are enabled to say that we have received good promises of future support for our Journal from them; the earnest of this is contained in the present number. A noble and almost untrodden field thus lies before us. We shall be very glad to hear again from Captain Hickey.]

TREATMENT OF PLEURO-PNEUMONIA IN HORNED CATTLE.

By J. Holden, Burley.

I am glad to find this subject again before the profession, and for this very reason, that so little information upon it has been forthcoming of late. The disease appears to be as rife and virulent as ever; the pathology not better understood; and I fear, the losses under the most judicious treatment, not less, upon the average, than they have been for some time past. If my experience, with regard to the treatment of the malady, can in any way contribute to the general weal, I shall feel much gratification in having invited attention to this all-important subject.

According to the stage of disease, so are my proceedings. When called to the patient, I usually bleed freely, and, if admissible, administer a gentle aperient of Magnes. Sulph., with Spir. Æth. Nit. I follow up this treatment by the administration of Liq. Ammon. Acet. ℥vj, Spir. Æth. Nit. ℥j, and Pot. Tart. ʒj, et Pulv. Digital. ʒj, every twelve hours, until the inflammatory action ceases. When I have found extreme debility, caused partly by the disease, and perhaps by the absorption of the digitalis, to be the chief obstacle to recovery, I commence the use of mild tonics, combined with Ammon. Carb. I have found the following to be especially serviceable—

℞ Pulv. Calumbæ, ʒvj;
Ammon. Carb.,
Gum. Camph., āā ℥j;
Farinæ Com., ℥ss.
Theriac. q. s. ut ft. bolus.

repeated twice or thrice a day.

I must not forget to mention the application, in the early stage, of Lin. Crotoni to the sides, or Sinapisms, made with turpentine instead of water. The free use of the Calcis Chlor. with every other means usually employed to keep the air pure, and the patient comfortable. The diet must be regulated by the varying circumstances of the state of the animal. Although by these and similar means I have often succeeded beyond my most sanguine expectations, still I attest to the fact, that we have yet much to *unlearn*, as well as learn, relative to Pleuro-Pneumonia.

CONTEMPORARY PROGRESS OF VETERINARY SCIENCE AND ART.

By John Gamgee, M.R.C.V.S.

(*Continued from p.* 531.)

The Boil of Biskra "Bouton de Biskra." Dr. Bertherand tells us, that at Biskra, a town at the north of the desert of Sahara, man is subject to a singular cutaneous affection, which commences in intolerable and long-continued itching,—a spot reddens, tumefies; a pimple is formed, which discharges a little serosity or pus; a scab results, which, on being detached, leaves behind an ulcer, of a lively red colour, with erect margins, and constantly secreting an abundant sanious discharge of a peculiar odour. The development of this circular ulcer is not associated with much pain, but it is troublesome. It is a slow chronic affection, not inducing constitutional disturbance.

A singular fact, says Dr. Bertherand, is, that horses are affected with the disease; and a Prussian veterinarian, who chanced to have enlisted in the foreign legion, partly attributed it to the waters the animals drink. The disease seemingly has all the character of boils, with a slough forming in the interior, and a chancrous ulcer remains, which may be treated with simple cerate, or the essence of turpentine; in other cases, a pomatum composed of simple cerate, and the red sulphuret of mercury, causes them to heal. Nitrate of silver acts favorably on the exuberant granulations, and the cicatrix formed is permanent, and white hairs grow from its surface. The Prussian veterinary surgeon said, he always had met with diseases of the liver and brain, and even dropsies, associated with the boil of Biskra, and he considered this as dependent on the climate. He had only seen it in horses. Dr. Valette believes it to be the *rupia simplex*, or the *prominent rupia* of English writers; and referring to man, he says, at Malta and at Philippeville it is known.—'*Med. et Hyg. des Arabes*,' *par le Dr. E. L. Bertherand*, p. 447-454.

This subject was brought before the Central Veterinary Society of France by M. Magne; and in the discussion which followed, allusion was made by M. Reynal* to a disease which is seen in summer, after animals have been fed on new forage, especially on artificial grasses. It consists in elevated conical buds, which ulcerate, and which may be confounded with farcy buds. M. Prangé considered this urticaria.

Relating to the same subject, I may say, on Hungarian

* 'Recueil de Méd. Vét.,' May, 1855.

horses, I have seen during the summer months an immense number of little tumours develop themselves all over the surface of the body. They had the appearance of varicose cutaneous veins; the summit of the tumour ulcerates, and blood trickles out; the hemorrhage affects so many points at once, that the animals are not in a fit state to leave the stable, as they are covered with little prominent ulcers, surrounded by fresh or dried blood, and the aspect is anything but agreeable. This is associated with intolerable itching, under certain circumstances; and the only course of treatment, which perhaps may be dispensed with, is an aloetic purge. This disease may have some relation to the bud or boil of Biskra; but so far as I can remember, for it is several years since I last saw it, no suppuration ensues, and the wounds heal rapidly.

Shoulder Lameness.—On the 9th November, 1854, M. Vilatte presented to the Central Society of Paris the humerus of a horse affected with shoulder lameness. The history of the case, to be brief, is, that in the month of May, 1851, he saw an English horse, lame in the near fore-leg, with a slight tumefaction over the antero-inferior part of the shoulder. Two blisters then cured him, and he remained well for two years. In the month of April, 1853, this horse was again taken lame, but no history of his lameness could be ascertained. Violent pain of the shoulder-joint existed, especially on drawing the limb upwards and forwards. Emollients, blisters, setons, the actual and the potential cauteries, all failed in affording relief.

After a while a tumour formed just above the joint; it was the size of a hen's egg, contained fluid, and probably communicated with the joint or bursæ, as it disappeared on pressure; a short time after another made its appearance outside, and a little under the articulation. After the application of blisters, an abscess formed in the latter situation, which M. Vilatte opened, and let out a yellow viscid pus with a grumous deposit. On pressure, flocculi of lymph were forced out, and there was no more doubt that the joint, or tendinous theca, was the seat of important and deep lesions. The horse was put to grass, but he got worse, and great emaciation of the muscles of the shoulder ensued, especially of those covering the fossæ of the scapula,* and he was consequently destroyed. The *post-mortem* revealed the following lesions of the humerus, viz.: *a*, an osseous tumour, with asperities in the inner part of the head; *b*, the trochlea destroyed, the

* This lesion which Mr. Barlow, of Edinburgh, considers as constituting a special disease called "shoulder slip" has often been observed by M. Vilatte, but never of itself to produce lameness.

central eminence having disappeared, and an exostosis formed invading all the space occupied by the trochlea; *c*, the outer part of the head of the humerus, also the seat of osseous vegetations. The head of the humerus, where it articulates with the scapula, healthy; but giving some evidence of synovitis, probably the result of having travelled two days from the fields where he was grazing, to M. Vilatte's residence in Paris. M. Vilatte was at a loss to explain the total destruction of the trochlear prominence.—'*Bulletin de la Soc. Imp. et Cent. de Méd. Vét.*' p. 168, 1854.

The second case of shoulder-lameness refers to a horse destined for the dissecting rooms in the Alfort school, and which M. Goubaux observed to be lame, with marks of firing over the shoulder, and a difficulty to flex the limb forwards and upwards, though the horse bore on it well. The shoulder was deformed, though the bones had their normal direction. On dissection, the deep-seated lymphatic glands were found to be enlarged; the aponeurosis of the pectoralis magnus, as it passed over the upper part of the flexor brachii, was adherent, and there was a slight ecchymotic spot on it. The flexor brachii, which was voluminous, was excavated in its centre, there being a membranous cyst in which a hen's egg might have been deposited. Within was a reddish serosity, and a fibrinous clot, which much resembled in shape the cotyledon of a cow. A perfectly identical lesion was discovered above, near the joint. A third cyst was seen in the same muscle, near the external tuberosity of the humerus. A fourth existed near the origin of the tendon of the same muscle. A fifth in the substance of the internal portion of the antea spinatus. The shoulder-joint was healthy, but in the trochlea, on which the flexor brachii played, was intense synovitis and roughness of the trochlear surface. The reflection of the synovial membrane over the tendon, was the seat of large red vegetations, and loose in the cavity were red flocculi of lymph. The cartilage over the humeral tubercles was nearly destroyed, and the surface rough. A careful examination of the tendon of the flexor, left no doubt that there had primarily been a rupture. The muscle was also discoloured in its external half, whilst its internal part was of a normal colour and consistence. In the external half, at its superior part, were two cysts like the afore-described; one the size of a hazel nut, and the other of a walnut.

M. Goubaux, referring to Vilatte's case, says there may be differences between the two, in the latter there being really inflammation of bone, whilst in his own case the lesions principally involved, the flexor brachii, and the humerus, were only secondarily affected. He believes such

lesions are not rare, and says, that about twelve years ago he observed in a horse the following: 1stly, a rupture of the flexor brachii on both limbs; 2dly, a fracture of both the first ribs; 3dly, and lastly, fracture of the sternum between the first and second ribs. The fractures were consolidated, hence the lesions old.—'*Bulletin de la Soc. Imp. et Cent. de Méd. Vét.*,' p. 470, of the '*Recueil*' for June, 1855.

Extensive literary research and practical observation prove, that affections of the shoulder, independent of accident, are extremely rare. Fractures of the scapula and humerus, lacerations of muscles or ligaments, the results of penetrating wounds or violent contusions, are of no uncommon occurrence, and in such instances seldom is it that doubts arise in forming a diagnosis. I have, however, drawings in my possession, which prove that even traumatic shoulder lameness may be mistaken, and animals in an incurable state allowed to live. In this category I class four cases of necrosis of the scapula, necrosis which, in two instances, had destroyed all but the whole bone, another hollow one, containing the remains of its predecessor, having been formed. One of these extraordinary pathological specimens may be seen in the Royal Veterinary College, others exist in Alfort, and lesions of the shoulder-joint of a traumatic character may be seen in most museums. Fractures of the humerus, with displacement and awkward consolidations, or bony vegetations around the head of the humerus, as in Vilatte's case, are amongst the cases which I have witnessed, and they produce lameness, sometimes associated with some obscurity, especially when all history of the case is wanting. It is much to be desired that facts be contributed to this all-important point in veterinary surgery, and for this reason I have reproduced the above. They are peculiarly interesting for their novelty and bearings on practice, and it is to be hoped they will not lie long alone; but being followed up by others, something may be learned with respect to the long-debated question of shoulder-lameness.

Disease of the Sesamoid Bones of the Horse.—Mascher, an army veterinary surgeon in Hanover, praising the labours of Gurlt and Hertwig, in forwarding the study of pathological anatomy, says, that he is desirous to call attention to certain lesions which have not been described, implicating the sesamoid bones of the horse.

The first instance of the above disease which fell under Mascher's notice, was that of a horse, several years since, affected with a chronic lameness of the fore limbs, for which he had been variously treated by several veterinary surgeons. The horse was sent out to pasture, and just in that year there was considerable wet weather; his master was prevented

attending to him closely, and at last the half-starved animal was destroyed. Mascher had the good fortune to obtain the limbs and examine them most carefully.

"As the flexors of the foot," says M. Mascher, "were turned back, a singular alteration of the sesamoid bones fell into view, which appeared similar to the lesions of the navicular bone through chronic navicular disease. I forgot not thereupon to examine closely the navicular bones. The one I found strangely atrophied or sunken in the middle, and so affected in the anterior margin of the surface in contact with the tendon, that a segment two lines in length and one and a quarter broad was broken off, and only attached to the principal portion of bone by a few white fibres."

The navicular bone of the other limb was not so far destroyed, still the appearances of disease were likewise discovered.

The sesamoid bones were discovered, on both legs, to be ulcerated over a surface the size of a large pin's head, and around this spot the membranous covering of the bone was strongly injected with blood. The tendons of the pedal flexors were likewise thickened and injected with blood.

Since the above case happened, in chronic lamenesses which have been treated, and which it is well known often occur amongst cavalry horses, Mascher never forgot, when the lameness was of that nature that its seat might be supposed to be in the joints of the foot, to examine closely the fetlock joint. He has thus found, during seventeen years' practice—fourteen of which were passed in the army—but principally during the last seven that he has been veterinary surgeon to a regiment, and hence had to supervise and treat the diseased animals—that the seat of many of the lamenesses was not to be found in the navicular bone, but at the fetlock. Sometimes one, sometimes the other sesamoid bone was affected, but never both with equal intensity.

Referring to the diagnosis of the disease, M. Mascher says, that rarely at the beginning was there any change in the outer form of the parts, but in three weeks or a month, or even more, it happened rarely but that a moderate amount of swelling supervened. Respecting the action of horses thus lame, he says that in walking, the lame leg is sent out as far as the healthy one; and it is only on uneven ground that the animal appears to go stiff, or on passing over a furrow, or depression in the ground, a short step is made with the lame leg, and the whole weight is thrown on the sound one. In trotting, the lame limb is not thrown out like the healthy one, and is brought precipitately to the ground.

Mascher goes on to state that the symptoms are more

marked when both sesamoids are affected on either limb; and, further on, he says that, if a horse thus lame is made to trot awhile and then left at rest a few minutes, on being brought out again the lameness is very marked, even in a walk. He never observed this disease to come on periodically, but a horse having been at rest, all the symptoms might temporarily disappear.

Very often, where the perforans tendon passes through the perforatus, there would be a swelling perceptible even to an ordinary observer. This is, however, never to be observed till months or a year or even longer, after the first appearance of disease.

Mascher was rarely fortunate in the treatment of this disease. If he could form an accurate diagnosis at the commencement, the application of a blister of cantharides and several weeks' rest, were sufficient to effect a cure. If the lameness were not completely removed, the actual cautery was had recourse to, and sometimes beneficially.—'*Mag. für die Ges. Thierheil,*' *July* 1855.

Though Turner spoke of disease of the sesamoidal bones in 1847—though he brought the subject again before the profession in 1850—and in April last, under the head sesamoiditis, no one has risen to substantiate the facts adduced, nor invalidate the views propounded! It is certainly strange that "it has not been duly recognised by many of the metropolitan veterinary authorities who are actively engaged in practice;" and as to British veterinary authors, ancient or modern, they are silent on the matter.

M. Mascher springs up in Hanover, in July 1855, and though no veterinarians in the world are as learned, and as universally educated, as the Germans, still it appears, till his time, the important lesions of the fetlock, now under consideration, have been doomed, *even in Germany*, to be classed amongst things unknown!

Veterinarians often assert, when a horse is presented to them lame, that he has sprained or jarred his fetlock joints, and the French consider "l'entorse du boulet," (sprain of the fetlocks), one of the common injuries of the fore or hind limbs of horses, inducing lameness. I am persuaded, however, that this has been all guesswork, for I have myself had occasion irrefutably to prove a horse was spavined, or had navicular disease, when his fetlocks have been blistered. I have repeatedly questioned continental practitioners and professors, and found that their diagnoses were made *by exclusion*, asserting the fetlock to be diseased because they thought they could see no disease elsewhere. Was it not thus that for many years, and even at the present time in some coun-

tries, all animals were or are considered lame in the shoulder, and mercilessly blistered, setoned, and fired; aggravating, and not alleviating, animal suffering?

It is interesting, though not strange, when it is considered that the basis of either is fact, to read Mr. Turner's and M. Mascher's descriptions of the symptoms of disease of the sesamoidal bones; how closely they agree, and yet how differently they express themselves. I cannot forbear quoting one of Mr. Turner's well written paragraphs from the *Veterinarian* for 1847, at page 633, where, speaking of lesions of the tendons and ligaments, as affecting race-horses, to familiarise his instruction, he tells us how an intelligent trainer would readily discover them, and then referring to sesamoiditis, says "but this same practical trainer gives us a call, fidgetty and puzzled, and says he has a two-year old in full training, of immense promise and engagement, but is as loath to admit the existence of lameness as though the confession would be the forfeiture of his own life. At length it comes out that he thinks his stride is *shortened* in his gallop—that he is somewhat careful in his slow exercise, particularly in declivities—that he drops occasionally in his walk which he never used to do, and when in the stable does not stand firmly on his fore legs as at first; then describes his sinews and ligaments as perfectly clean and fine; and winds up by declaring that there is nothing whatever to be seen to account for the strange falling off; but admits that, upon running the colt out in hand, he trots somewhat stilty in his action."

On the next page Mr. Turner says, that a veterinary surgeon "finding all right there, (in the foot, after close examination,) returns to a most scrutinizing examination of the faint abnormal indication (slight swelling,) before mentioned upon the ankle joint, and finds a throbbing action of the metacarpal artery, an unusual dilatation of the veins in the vicinity, but the *angular point* will be discernible both by the eye and touch; he is then duly fortified, and boldly pronounces the case to be a shock imparted to the delicate synovial membranes lining the sesamoidal joints, through undue exertion upon structures necessarily weak, because in the progress of development by growth."

In his last paper on the subject, Mr. Turner says that sesamoiditis is a disease of wear and tear, affecting old and young, and all kinds of fast or hard working horses.

I here leave the matter to those who may be willing to contribute facts, either to invalidate or strengthen the teachings of Messrs. Turner and Mascher.

16, Upper Woburn Place; *September*, 1855.

Facts and Observations.

LACERATION OF THE ABDOMINAL MUSCLES AND PROTRUSION OF THE INTESTINES.

Mr. Newton, M.R.C.V.S., of Worksop, says, that he was lately called to a case of a colt which had been gored by a cow, on the right side of the abdomen, and that when he arrived, ten or eleven feet of the ileum were protruding from the wound. The animal being properly secured, the intestine was returned, and its re-protrusion prevented by sutures to the torn muscles, and a bandage around the body. The prostration of the vital powers was so great, that an hour after the operation but faint hopes existed of the animal's recovery. By the use of diffusible stimulants, however, a reaction took place, and in a few hours more the symptoms indicated a favorable result. On the following day all appeared to be going on satisfactorily, and from that time to the end of the third week no unfavorable symptoms manifested themselves.

Beyond ordinary attention to the wound, and a strict adherence to dietetic rules, little was done. Mr. Newton, to use his own words, having resolved "to let well alone." The recovery was both speedy and complete.

PUNCTURING OF ENLARGED MUCOUS CAPSULES.

Mr. Gibbon, M.R.C.V.S., of Ludlow, informs us that he has recently been consulted in a case of enlargement of the mucous capsules of the hock joint, commonly known as "thorough pin," and "bog spavin," in which the owner had punctured the former with the happiest result. Mr. Gibbon says, "when I saw the animal, the 'thorough pin' was not at all distended, and the incision was perfectly closed, leaving only a small cicatrix. The owner wished to know if it were not equally practicable to puncture the *bog-spavin*, from this, however, I dissuaded him."

USE OF THE CANNABIS INDICA IN TETANUS.

Mr. G. Fulton, M.R.C.V.S., of Wigton, has lately given trial to the Indian hemp, in a case of tetanus, arising from a puncture of the near fore-foot of a horse with a nail. The dis-

ease showed itself ten days after the accident, and was attended with all the usual symptoms of this distressing affection. The treatment was commenced by the exhibition of cathartic medicine and laxative enemas, with the use of counter-irritants to the spine. These measures were speedily followed by the administration of the Ext. Cannabis Indica in a drachm-and-a-half dose, twice a day, under which the animal recovered in about six days. Mr. Fulton considers that this agent deserves a more extended employment in veterinary practice.

[In Johnston's 'Treatise on Narcotics' it is said that "in India the resinous exudation of the hemp-plant is collected in various ways. In Nepaul it is gathered by the hand in the same way as opium. This variety is very pure, and much prized. It is called *momeea*, or waxen *churrus*. It remains soft, even after continued drying; has a fragrant narcotic odour, which becomes strong and aromatic on heating. Its taste is slightly hot, bitterish, and acrid, yet balsamic. In Central India, men covered with leather aprons run backwards and forwards through the hemp-fields, beating the plants violently. By this means the resin is detached and adheres to the leather. This is scraped off, and is the ordinary churrus of Cabul. It does not bring so high a price as the momeea. In other places the leather aprons are dispensed with, and the resin is collected on the naked skins of the coolies. In Persia it is collected by pressing the resinous plant on coarse cloths, and afterwards scraping the resin from these, and melting it in a little warm water. The churrus, or "kirs," of Herat is considered one of the best and most powerful varieties of the drug.

The plant itself is often collected and dried for the sake of the resin it contains. The whole plant gathered when in flower, and dried without the removal of the resin, is called *gunjah*. In this form it is sold in the markets of Calcutta in bundles about three inches in diameter, and containing each twenty-four plants. The larger leaves and seed-capsules separated from the stalks are called *bang*, *subjee*, or *sidhee*. This form is less esteemed than the gunjah. The tops and tender parts of the plant, the flowers, and even the pistils of the flowers, are separated, and when dried alone are very powerful, and much esteemed. The seeds, I believe, are never used as a narcotic indulgence. In some medical works they are spoken of as cramp-stilling and pain-removing; but if they really possess these virtues, it must be in a very inferior degree; and they probably reside in the husk, and not in the body of the seed itself.

When boiled in alcohol the gunjah yields as much as one-fifth of its weight of resinous extract, and hence this method of preparing the drug in a pure state has been recommended as the most efficient and economical. I am not aware, however, that it is anywhere adopted in the East.

Forms in which Hemp is used.—Among the ancient Saracens and the modern Arabs, in some parts of Turkey, and generally throughout Syria, the preparations of hemp in common use were, and are still, known by the names of *haschisch*, *hashash*, or *husheesh*. The most common form of haschisch, and that which is the basis of all others, is prepared by boiling the leaves and flowers of the hemp with water to which a certain quantity of fresh butter has been added, evaporating the decoction to the thickness of a syrup, and then straining it through cloth. The butter thus becomes charged with the active resinous principle of the plant, and acquires a greenish colour. This preparation retains its properties for many years, only becoming a little rancid. Its taste, however, is very disagreeable, and hence it is seldom taken alone, but is mixed with confections and aromatics—camphor, cloves, nutmegs, mace, and not unfrequently ambergris and musk—so as to form a sort of electuary. The confection used among the Moors is called *el mogen*, and is sold at an enormous price.

Antiquity and extent of its use.—The ancient Scythians are said by Herodotus to have excited themselves by "inhaling its vapour." Homer makes Helen administer to Telemachus, in the house of Menelaus, a potion prepared from the nepenthes, which made him forget his sorrows. This plant had been given to her by a woman of Egyptian Thebes; and Diodorus Siculus states that the Egyptians laid much stress on this circumstance, arguing that Homer must have lived among them, since the women of Thebes were actually noted for possessing a secret by which they could dissipate anger or melancholy. This secret is supposed to have been a knowledge of the qualities of hemp. Under the name of *beng* it is also mentioned in the *Arabian Nights*, translated by Lane, as the narcotic used by Haroun al Raschid and other heroes of the tales.

Nor is the use of hemp less extended than it is ancient. In the plains of India it is consumed in every form, and on the slopes of the Himalayas, it is cultivated for smoking, as high up as the valleys of Sikkim. In Persia, in the east of Europe, and in Mahommedan countries, it is in extensive use. In Northern Africa it is largely employed by the Moors. In central and tropical Africa it is almost everywhere known as

a powerful medicine and a desired indulgence. In Southern Africa the Hottentots use it under the name of *dacha*, for purposes of intoxication; and when the Bushmen were in London, they smoked the dried plant in short pipes made of the tusks or teeth of animals.

Effects of Hemp on the system.—This wide use of the plant implies that the effects of hemp upon the system are generally very agreeable. In India it is spoken of as the increaser of pleasure, the exciter of desire, the cementer of friendship, the laughter-mover, and the causer of the reeling gait,—all epithets indicative of its peculiar effects. Linnæus describes its power as "narcotica, phantastica, dementens, anodyna et repellens."

The effects of the *churrus* or natural resin have been carefully studied in India by Dr. O'Shaughnessy. He states that when taken in moderation it produces increase of appetite and great mental cheerfulness, while in excess it causes a peculiar kind of delirium and catalepsy.

This extraordinary influence he subsequently found to be exercised by the hemp extract upon other animals as well as upon man. After a time it passes off entirely, leaving the patient altogether uninjured.

Among orientals, according to Dr. Moreau, there are some on whom the drug produces no effect whatever—upon whom, at least, doses are powerless which are usually followed by well-marked phenomena. As is the case with opium, long use also makes larger doses necessary. To some even a drachm of the churrus becomes a moderate dose, though sufficient to operate upon twenty ordinary men.

Hemp compared with Opium.—The extract of hemp differs considerably from opium, not only in its sensible properties, but in its effects upon the system. It does not lessen but rather excites the appetite. It does not occasion nausea, dryness of the tongue, constipation, or lessening of the secretions, and is not usually followed by that melancholy state of depression to which the opium-eater is subject. It differs also in causing dilatation of the pupil, and sometimes catalepsy, in stilling pain less than opium does, in less constantly producing sleep, in the peculiar inebriating quality it possesses, in the phantasmata it awakens, and in its aphrodisiac effects. It operates likewise in a smaller dose, and does not produce that apathy to external impressions by which opium is characterised."]

Extracts from British and Foreign Journals.

ON THE VARIOUS BREEDS OF SHEEP IN GREAT BRITAIN, ESPECIALLY WITH REFERENCE TO THE CHARACTER AND VALUE OF THEIR WOOL.

By John Wilson, Professor of Agriculture in the University of Edinburgh.

The classification of the various breeds of sheep of this country is usually determined by the relative characters of their fleeces, these characters rendering the fleeces of each division respectively more or less applicable to the same purposes. Thus we have two well-marked classes—the "*long-woolled*" and the "*short-woolled*," and a third, whose characters are not so definite as to partake entirely of either, to which the term "*intermediate*" may be applied. Of the "*long-woolled*" we may take the Lincoln, the Leicester, and the Cotswold, as the more prominent types; of the "*intermediate*" we may take the Dorset, the Cheviot, and the Radnor breeds; and of the "*short-woolled*" division the Downs, the Merino, the Welsh, and the Shetland, are perhaps the best examples.

As the industrial application of these different wools will be more fully considered in the second division of the subject, I will here confine myself to a general statement of their uses. The "long-wools" are used entirely for the various kinds of worsted manufactures, the Lincoln and other glossy wools being used for lustre-goods, &c.; while the Romney Marsh and some of the Irish are in great demand in the French market for similar purposes. The "intermediate" are almost all used for invested yarns; where the character, however, of the wool is kempy (as in some of the Scotch) they are found to be more suitable for low woollen goods, as carpets, blankets, hosieries, &c. The "short-wools" are used chiefly for woollen purposes, the longer portions of the fleece being separated and used for worsted yarns and in the manufacture of stuff goods. The first two classes may be termed "combing" wools, and the last classed as "carding" wools.

In the following outline of our different native breeds I have endeavoured to give, in a condensed form, the general physical characteristics and agricultural values of each, confining my observations, save as regards a few occasional references, to the pure breeds, as the limits of my paper would not permit me to do justice to the various crosses between them which are every year increasing in importance both in an industrial and in a more strictly agricultural sense.*

1st Division.—The Agricultural Characters of the Native Breeds of Sheep.

The Long-Woolled Breeds.

Lincolnshire.—This breed takes, perhaps, the first place amongst the native sheep of Great Britain, both as regards the weight of the animal and the size of its fleece. The sheep have no horns, their faces and legs are white, they have also long flat-ribbed bodies, and coarse legs. They grow to a large size on the rich pasturage of the lowlands of Lincolnshire, and produce a heavy fleece, which originally constituted their chief value, the improvement of the carcase being generally less attended to by the breeders than the fleece. For many years a great rivalry existed between them and the improved Leicesters, on which breed probably more attention had been paid to the carcase than to the fleece. At length an union was established between them, and the produce, by a system of judicious breeding, exhibited the leading qualities of both breeds: the coarseness of the animal frame gradually disappeared, the flesh was laid on more uniformly, maturity was advanced fully one year, less food was required, and an aptitude to fatten induced. The ewes were improved, and, when drafted for market, always carried a better condition and fetched more money than the old breed used to do; the fleece was slightly diminished in weight, but was improved in quality. The sheep now are, by the improved system of turnip-husbandry, rendered fit for market as hogs (yearlings): they then weigh on the average 80 to 100 lb. each; if kept till they are older they become of a large size and not so suited

* The materials from which these sketches of our native breeds of sheep have been drawn, were for the most part kindly furnished to me by the breeders to whom on a recent occasion I applied (on behalf of the Board of Trade) for specimen fleeces of their respective flocks. For the information in reference to the commercial application and value of the different wools, I am indeed to Mr. John Hubbard, of Leeds.—J. W.

for the markets. An instance may be given of three slaughtered, some few years since, aged respectively 3, 2, and 1 year, and weighing 386 lb., 364 lb., and 284 lb. The sheep kept on the higher and lighter soils (the Wolds) are, as might be expected, smaller in size both of carcase and fleece, but possess all the characters of the breed. These generally contain more Leicester blood.

The fleece of the lowland sheep possesses a very long staple with a bright and glossy face, and weighs on the average 10 lb.,—some considerably exceed that weight. The upland fleece may be taken at 8 lb.

This breed is met with in some districts crossed with the Exmoor, the South Down, and the Bampton; the usual cross, however, is with the Leicester.

Leicesters.—It was about the middle of the last century when Mr. Bakewell, of Dishley, in Leicestershire, began his experiments in the improvement of the breed of long-woolled sheep, at that time common to the midland counties. The old Leicesters were then considered as possessing many valuable properties; at the same time they possessed many defects. These defects Bakewell sought by a judicious crossing with other breeds to remedy, while at the same time he retained the good points of the original breed. Up to this period the great object of breeders seems to have been confined to the production of animals of the largest size possible, and carrying the heaviest fleece. The old Leicesters are described as large, heavy, coarse-grained animals, the meat having but little flavour and no delicacy—the carcase was long and thin, flat-sided, with large bones, on thick rough legs. The fleece was heavy and long, and of coarse quality. The sheep were slow feeders, and when sent to market at two and three years old, weighed about 100 to 120lb. each. Such were the characteristics of the stock upon which Bakewell commenced his improved system of breeding. Recognising the relation which exist between the form of an animal and its physical tendencies, he sought to cross his sheep with such breeds as he considered would be most likely to ensure those points in the animal frame which were defective in the old breed, and thus to induce an aptitude to lay on the largest possible amount both of flesh and fat in the shortest space of time, and at the least expenditure of food. The fleece, too, was not forgotten, as that would necessarily share in the general improvement of the animal. Of course time was required to develope the progressive improvements of his system, and also to overcome the prejudices of his day, and obtain for his improved breed that recognition which has

since been so willingly accorded to it. Satisfied himself at an early period of his career that the principles he was carrying out were correct, and would finally be crowned with success, he commenced the practice of letting out his rams for the use of other breeders. This plan was not very encouraging at first: indeed, it was not till after the lapse of some twenty years that it was appreciated in the manner it deserved. In 1760 we find his rams being let at 17*s.* 6*d.* each. This was increased in the following years to one, two, and three guineas; but it was not until 1780 that he began to receive a remunerating price for them. That year they reached ten guineas, the price rapidly advancing each year with the increasing reputation of his breed. In 1784 the price had risen to 100 guineas for his best rams. In 1786 one of his rams brought him in 300 guineas; and in 1789 he received 1200 guineas for three rams; 2000 guineas for seven others; and he received no less a sum than 3000 guineas from the Dishley Society, then just instituted, for the use of the remainder of his stock. It is worthy of remark that, for the use of one of his rams named "Two-pounder," he received 400 guineas each from two breeders, at the same time reserving to himself the right to put one-third the usual number of ewes to him, thus estimating the value of the animal at 1200 guineas for the season. At this period many breeders, associates of Bakewell, and following up his system, extended the reputation of the breed and shared in its advantages. In 1793 the flock of ewes, 130 in number, of Mr. Paget of Ibstock, was sold by auction, for the gross sum of 3200*l.*, or for the average sum of 25*l.* 17*s.* each. Others were also disposed of about the same period at very high prices.

In order to obtain a permanent character to his breed, after he had by continued crossing secured all those points he considered desirable, Bakewell carried on his breeding with his own blood, and did not scruple to use animals closely allied to each other. This system, adhered to more or less during a course of years by his successors and by later breeders, while sustaining the purity of the breed, had the effect of lessening its value to the farmer. It gradually exhibited a weakened constitution, became reduced in size, and more delicate in form—the ewes were less prolific and less generous to their offspring. These prominent and serious defects soon craved the attention of enlightened breeders, who, by a judicious introduction of new blood, have again restored the original character of the breed, with all the improvements resulting from the advanced system of

cultivation, and the enlarged area of sheep-farming of the present day.

The *new Leicester* is now perhaps the most widely extended and most numerous of all our native breeds. The sheep are without horns, with white faces and legs; the head small and clean; the eye bright; neck and shoulders square and deep; back straight, with deep carcase; hind quarters tapering towards the tail and somewhat deficient when compared with the Cotswold sheep; legs clean, with fine bone. The flesh is juicy, but of moderate quality, and is remarkable for the proportion of outside fat it carries.

They are not considered so hardy as the other large breeds, and require shelter and good keep. The ewes are neither very prolific nor good mothers, and the young lambs require great attention. Early maturity and aptitude for fattening are the principal characteristics of the breed, a large proportion of the wethers finding their way to market at twelve or fifteen months old, and weighing from 80 to 100lb. each; at two years old they average 120 to 150lb. each. The wool is a valuable portion of the flock, the fleece averaging 7lb. each.

The occasional introduction of a little Cotswold blood into a Leicester flock has the effect of improving both the constitution of the animal and also the hind-quarters, in which theLeicester is somewhat defective. Ram-breeding is carried out to a much larger extent with this breed than with any other.

Cotswolds.—The Oolite hills running from north-east to south-west, and occupying the eastern division of Gloucestershire, have given their name to a breed of sheep, which probably is one of the oldest recorded native breeds of the country, and which, owing to recent improvements, is now rapidly increasing in public estimation. Mention is made of them in history in the early part of the fifteenth century; and in 1467, according to Stow, certain of these sheep were by permission of the king, Edward IV, *exported to Spain.* At that period, and for more than two centuries afterwards, the range of the Cotswold Hills formed broad, uninclosed, and bleak tracts of country, affording no natural shelter, but covered with a short sweet herbage. The Cotswold sheep of that day, though possessing the type of the present breed, were, judging from the country they occupied, probably very different from them in size and general external appearance. This question has been disputed by many writers: the result seems to be that there are no physiological reasons nor agricultural facts to disturb the

pedigree of our present breed, or to render its altered and greatly improved characters inconsistent with the improved state of cultivation of the whole Cotswold district. It is one of the largest of our native breeds; the long loose fleece adding to the appearance of their large proportions. They are without horns, and have white legs and faces, with a strong tuft of wool covering the forehead, more prominently in the male than in the female. The neck and forequarter are somewhat deficient when compared with the Leicester; the back is straight, body well ribbed up, with deep flanks, hind quarters square and full; the legs are clean, with moderate length of bone. They are hardy and active, exhibiting the appearance of good working animals, well suited for the range of pasturage the district affords. This pasturage, which consists chiefly of sainfoin, is peculiar to the country. On this the sheep thrive when not stocked too close; at the same time their early maturity and disposition to fatten enable them to be brought to market at 12 to 15 months old at an average weight of 100lb.; at 2 years old they will weigh from 120 to 150lb. each. The meat when young is succulent and well flavoured; at 2 years old it becomes too fat and coarse to be generally esteemed.

The ewes are prolific, good mothers, and the lambs are covered with a thick, close fleece. The wool produce is an important item in a Cotswold flock. The fleece, which is closer upon the body than the Leicester, averages 7 to 8lb. each. The staple is long, mellow to the hand, though somewhat coarse in quality.

The practice of breeding rams for sale or for hire is extensively carried out with this breed.

(*To be continued.*)

ERGOT OF WHEAT.

By Dr. Grandclement.

Ergot of rye has long been considered as a very valuable remedy, whether used as a hemostatic, or as favouring the contractions of the uterus; ergot of wheat is now proposed as its rival, and in consequence of the ease with which it may be preserved, appears likely to replace it in therapeutics.

Dr. Grandclément, who is well known from his labours in natural history, has, in his inaugural thesis, called the atten-

tion of practitioners to the ergot of wheat. We extract the pharmaceutical portion of this excellent work, which the author promises to continue. The crop of ergot of wheat is not collected like ergot of rye, it is the refuse of a great manufacture. At Clermont Ferrand is prepared a vast quantity of semola, which is thus known in commerce, or formed into paste, known as Italian paste, or Auvergne paste.

The wheat used in this manufacture is hard, red and glazed, with a bright conchoïdal fracture, which is picked by the hand before being used. The women who pick the wheat set the ergot aside, and sell it to the pharmaceutists: ergot of wheat may consequently be met with at many pharmaceutists at Clermont Ferrand, and the accoucheurs and midwives use it instead of ergot of rye. M. Pourcher, Professor at the Ecole de Médecine, at Clermont, has always found that this medicament produced certain and good results.

What are the physical properties of ergot of wheat?

It is impossible to mistake ergot of wheat for ergot of rye, when they are seen together, even in a mass; when examined grain by grain they are distinguished with quite as much facility.

Form.—Ergot of rye is elongated, fusiform, slightly bent, furrowed longitudinally at about equal distances and depths.

Ergot of wheat more nearly resembles the normal grain; the longitudinal furrows are not so equal, some being much deeper than others.

Length.—Ergot of rye averages from 20 to 25 millimetres: the short samples are from 10 to 12 millimetres in length, the longest from 60 to 70 millimetres.

Ergot of wheat, on the contrary, seldom exceeds 10 millimetres; the shortest are about four millimetres long; the longest from 12 to 15 millimetres.

Thickness.—Ergot of wheat being shorter than rye, appears to have a greater diameter; in reality it is less.

Colour.—The same colour externally and internally; but when cut through, the colour of ergot of wheat is more frequently brown than that of ergot of rye.

Taste.—No difference.

Odour.—The odour of ergot of wheat is less disagreeable than that of ergot of rye. Neither of them will germinate.

The microscopical studies of Dr. Grandclément have given the following results:

1st.—That the sporules of ergot of wheat are thicker than those of ergot of rye.

2d.—That the mass of the first is exclusively composed of

sporules; whereas in that of the second there are portions in which not a trace is discoverable, and the mass is never completely formed of them.

3d.—That ergot of wheat in no respect reminds us of the amylaceous substance, either in form or in the reaction with iodine, whereas in ergot of rye some corpuscles exist in the form of grains of starch, and exhibit in a slight degree the characteristic reaction with iodine.

Ergotine of wheat has been prepared by a similar process to that used by M. Bonjean for ergotine of rye. The two products are not precisely similar in their physical properties.

But what advantage does ergot of wheat present? That of keeping well. It is well known that if exposed to the air, ergot of rye spoils very quickly, and that the powder, which is only prepared when it is wanted, requires to be kept very dry, in well stoppered bottles: ergot of wheat, on the contrary, resists the action of time much longer, and no precaution is requisite for its preservation.

The powder may be kept for a very long time without losing its properties; this greater resistance to the destroying power of time may be explained by the nature of the grain which produces the ergot.

Ergot of wheat, possessing the same properties as that of rye, may be used in all cases where the latter medicament would be used, and by the ease with which it is preserved gives the practitioner much greater certainty as to its effects.—*The Chemist.*

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

"ON THE PHYSIOLOGY OF BREEDING.—

By R. Orton, M.R.C.S., Sunderland."

In reply to the series of Questions suggested by Mr. Varnell, in the July Number of this Journal, we have been favoured with a copy of Two Lectures under the above title; and in furtherance of the object we had in view, we shall give our readers an epitome of their contents. The author lays down two laws, substantiated by a mass of interesting evidence, as well as a large number of cases, which he considers bear out his premises. These laws he thus enunciates:

"1. That the male gives the external configuration, or in other words, the locomotive organs;* while the female gives the internal, or in other words, the vital organs.†

"2. That the female system imbibes certain influences from the male, which modify her future progeny by other males."

Law I.—The first illustration of this law he deduces from the cross between the horse and the ass; and he shows that the produce of the stallion and the she ass (the hinney) is essentially a modified horse; whereas the mule, the produce of the male ass and mare, is essentially a modified ass. This is, moreover, borne out by the fact, that the hinney neighs, whereas the mule brays. Dr. Darwin had stated, as long ago as 1799, that the temper and habits of an animal were due to the *female* parent.

"Cow-breeders," we are told, "are very careful in the selection of the best milkers, and those derived from a maternal

* "Such as the skin, the muscles, and the bones."

† "Which are the lungs, the liver, the stomach, the bowels, and the appendages."

race of good milkers. They are in a great measure indifferent as to the bulls,—and why? Experience has taught them that the secretion of a large quantity of milk is a property derived chiefly from the female parent."

In accordance with this opinion, Mr. Orton tells us, he caused common hens to breed with a Cochin cock, reasoning, that if the vital organs were due to the females, then the cross between these birds (being externally Cochins, and internally common hens) should lay *white*, instead of chocolate-coloured eggs, the secretion of the egg being a function of the vital organs. "The half breed did what theory said they should do, laid white eggs; and not only white eggs, but eggs which, on the evidence of myself and family, were very inferior in taste, having lost the mellow, buttery taste of the egg of the Cochin."

The author attributes all the good qualities of the short-horns to the dams; for he adds, "we thus see a highly vitalised female, in other words, a female with large vital organs, giving stamp and character to a highly vitalised race, for the properties of the short-horns are those of the vital organs;" and the practical deduction he draws is, that we should purchase the cows, not the bulls, of this breed; and he moreover adds, "the Arab will let you have his stallion, but his mare he will not part with at any price. The English breeder, on the other hand, values the stallion, he cultivates speed, and he finds the sire gives the locomotive organs—consequently his value."

The illustrations of his Law II are equally numerous: he shows what a disturbing influence a previous male may have in modifying progeny: hence the necessity of knowing if the female has ever had any male except the one which is the subject of experiment. One of these trials we give: Mr. Orton bred from white pigs, the sow being served by an Essex boar. The white sow had three litters from the Essex boar, and was then served by a white boar, and three out of seven of the litter were coloured.

Our author comes to the conclusion, that gradually this stain is lost; but breeders wishing to produce especial sorts,

cannot be too particular, and this law explains much that has puzzled clever men. The above statements are, however, not enunciated for the first time; but there is one statement which we have not seen before, and of which we shall be glad to have corroborative evidence. Mr. Orton relates an instance, showing "that it is not necessary that the intercourse between the male and female should be a *fruitful* one to leave its traces. A Berkshire boar which proved impotent, and which, on being slaughtered, was found to be, if *not an hermaphrodite, at all events peculiarly developed, having four testicles, besides other peculiarities,** was put to three sows, each from distinct litters, and of the Cumberland and Westmoreland breeds. Proving barren, these sows were next served by a Cumberland boar. In every litter, at least three of the pigs resembled, in most, if not in every particular, the Berkshire boar to which the sows were originally put, especially in the marks of the body and the disposition of the ears and tail."

In accounting for these strange traces of the previous congress of the male, the author attributes it neither to the imagination of the female, acting on the fœtus in utero, nor to a process of inoculation, by which the blood of the female acquires certain properties which operate on her subsequent progeny, but he considers that it depends upon the ovarian system of the female: "those ova," he says, "which are sufficiently matured to take on vitality, are fecundated, and pass to the uterine cavity, there to be developed, while at the same time a number of the less matured ova receive an influence or impress short of vitality, which remains by them, and modifies the subsequent action of the male, which at another and after period gives them vitality;" and he further illustrates this by the case of the turkey-hen, being fecundated by one impregnation for a whole season.

* We have put the above extract in italics, on account of its extraordinary statement; for the first time we hear of a hermaphrodite having four testes. We had in our innocence believed, that by a hermaphrodite was meant an individual that partook of both sexes, with organs difficult to characterise; but an impotent animal with four testes is an anomaly indeed—one would believe him doubly vigorous.—(Reviewer.)

The author sums up by saying:

"I will give a few instances as illustrative of the application of the principles I have advanced and attempted to demonstrate:

"The value of the knowledge of such laws, must, I think be apparent. If we want an animal of speed, we must look to the sire; the racer and the greyhound must be cultivated through him, because from him the offspring will derive those structures which give the qualities we need. As far as the female is concerned, we should certainly take care that her locomotive organs are well developed, but our chief attention should be to ascertain that her vital organs are perfect, for these she will give to her offspring. How amply does the voice of experience second this proposition of science; the male is generally the parent looked to in the breeding of the racer, the hunter, or the greyhound. If, on the other hand, we want a fat or milk-secreting animal, we must look for perfection and power in the vital organs of the dam, and may be in a great measure indifferent as to the sire. Of course, if both the sire and dam are well developed in their vital organs, as in the case of the short-horns, the Leicester sheep, or the improved Essex pig, so much the greater prospect of success."

In thus concluding our first review of this interesting subject, our readers will see that we have merely condensed our correspondent's communication. We at present give no opinion on the subject: we solicit answers from practical men like Mr. Orton; and sitting in our judgment-seat unbiassed by preconceived notions, we may be able to take an enlarged view of the subject, and weigh well the statements which our different correspondents send us. We must, however, reserve to ourselves the right of keeping our friends straight when they theorise on their favorite hobby. Facts we ask for; and these we hope so to arrange as ultimately to place the subject of breeding on sound principles.

THE VETERINARIAN, OCTOBER 1, 1855.

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

VETERINARY MEDICAL ASSOCIATIONS.

A CORRESPONDENT asks "if it would not add to the value of the periodical meetings proposed to be held by the members of the profession," and which he hopes to see early taking place both in town and country, were a short paper on a given subject introduced by some member for discussion. We, without hesitation, reply that we have no doubt it would materially increase the interest of such meetings; but, on the other hand, we fear that it might at the first operate against the establishment of "these associations," and the provincial ones in particular. By and by this could be done. For some time, at least, sufficient interest, we think, would be awakened by the novelty of the thing, and by the various preparations, &c., that would be brought by those who are desirous of taking an active part in the meetings.

Much of the resulting benefit will, of course, depend upon him who may be called upon, or who, more nobly, will volunteer to take the initiative; and hereafter it may be the case that such a one be expected to introduce some definite subject for consideration.

There are very many pathological facts to which the attention of the members of our profession might be profitably directed, and which they alone can properly solve. It is not now, however, for us to state what these are: but they are alluded to for the purpose of showing that there can never be any lack of a subject for consideration.

We believe, also, that we are acquainted with those in the profession who, by their practical knowledge and scientific acquirements, could, in the field of debate, scatter such seed as would not fail to produce rich and abundant fruit. Thus they would tend to the advancement of the reputation of our

common art in the estimation of the public, and to the enrichment of its stores of recorded facts.

Were we called upon to suggest the course that should be adopted to lay a sure foundation for these *reunions*, we would say, let the first step be taken by our metropolitan brethren: and if it be asked who shall bring forward the *first* subject for discussion, we venture to reply the President for the year of the Royal College of Veterinary Surgeons.

In the metropolitan association this should doubtless be his privilege, and we have no fear, were an attempt forthwith made to establish such societies, of many other members of the profession being found who would be ready to follow so noble an example. In town, too, it is probably the more requisite that a paper be introduced, as the members are in the almost daily habit of seeing each other, and communications on professional matters of more or less *general* interest are freely canvassed. Whereas in the country the same facilities do not exist, and therefore one coming from a distant part, and bringing with him some new or uncommon specimen of disease, would thus furnish matter for discussion, and obviate the necessity of reading a paper.

Different individuals seem to turn over different leaves in the great volume of nature, each reading a special lesson of her operations; hence, from the comparison of these experiences, much valuable knowledge may be added to the general as well as the individual stock of information. Nor would we endanger the success of these associations by *stringently* confining the discussion to set rules at the beginning; for we are not apprehensive of any disorder arising among men who are brought together to further the ends of science, and presided over by a fit and proper chairman. In the debates, the good sense of each speaker will always prevail and take the ascendancy.

In advocating the formation of these societies we are quite aware that we have to encounter many objectors. One man thinks it a pity to make any innovations, and another is opposed altogether to a change. By and by we may have

to deal perhaps more earnestly with these dead weights of a community, these enemies to all progress. There may be much that is venerable in antiquity; but times change, and advance is stamped on all round us. Shall we alone stand still? We trust not.

For the sake of change *merely*, no novelty should be introduced, but the routine of system is surely to be broken in upon by that which will work a lasting improvement. If then the proposition made be conducive to this end, let us strive energetically to accomplish it, and if it be new—not sanctioned by the usages of age—it is so much the better, as the merit of its introduction will then be ours. Ever should it be remembered that if we wish for success we must resolve to let nothing which we can help stand in its way. No favour, no fear, no sinister motive, above all no supposed friends; and then, when we have made these sacrifices, we at least deserve to succeed.

BOSTON VETERINARY INSTITUTE.

We have received the prospectus and regulations of the "Boston Veterinary Institute," incorporated by the legislature of Massachusetts, May, 1855; and we cannot but sincerely wish that all prosperity may attend its establishment.

We see in this Institution, the germs of much usefulness, and it has only surprised us that America has been so long ere she acknowledged the advantages that result from an application of scientific principles to veterinary medicine. These have, however, now become so obvious that no arguments are needed to prove their worth, or necessity of adoption.

In the foundation of the first American veterinary college, we perceive a resemblance to the commencement of our own; but our *cousins* have the advantage in one particular over us, as they, at the very outset, have obtained a "charter of incorporation." We are yet more delighted to see that the two professions of Human and Veterinary

Medicine are working hand in hand together to advance the interests of science. This is as it should be, for each will be mutually benefited by the new establishment.

In the appeal made to the public (which we append), is set forth the intentions of the originators. Another expedient, in all probability, would have been resorted to in this country. However, there is much in it worthy of notice.

"The undersigned having been appointed by the corporation of the Boston Veterinary Institute to solicit donations for the purpose of procuring chemical apparatus and preparations to facilitate illustrative teaching, and for erecting a suitable college, edifice, and infirmary, respectfully inform the public that this is the first institution of the kind ever incorporated in the United States, and the first legislative acknowledgment of the claims which our domestic animals have on their superiors. England, France, and Germany have long since endowed their veterinary universities; and therein have trained up a class of men who are abroad, dispensing, with liberal hands and willing hearts, the benefits of science to the sick and suffering of the inferior orders of creation.

"The veterinary science offers the only practicable and probable means of arresting the many unnecessary cases of disease and premature deaths that are constantly occurring among horses and cattle: therefore American husbandmen have great encouragement to aid in the diffusion of knowledge that shall put them in possession of the why and wherefore of disease, and enable them to offer the protective arm of science, both in view of prevention and cure.

"In order, therefore, to qualify many who are ready and willing to embark on an errand of mercy, and sow, broadcast, throughout the length and breadth of these United States the germs of usefulness, we require the necessary means.

"We appeal to the liberal and benevolent—we invite, nay, we entreat them to aid us in the good work, and contribute a portion out of their abundance.

"If sustained by liberal contributions our success will be immediate, and the people of New England can then boast, with pride and honour, of establishing the first American veterinary college.

"George H. Dadd,
William S. King,
Charles L. Flint,
Charles M. Wood. } Committee to solicit Donations."

The Organization of the Institute is as follows :—

CORPORATION.

OFFICERS OF THE CORPORATION.

WILLIAM S. KING, *Chairman.*
JOHN P. JEWETT, *Treasurer.*
C. L. FLINT, *Secretary.*

OVERSEERS.

PRESIDENT OF THE INSTITUTE.

D. D. SLADE, M.D.

FACULTY.

GEORGE H. DADD, *Professor of Anatomy and Physiology.*
CHARLES M. WOOD, *Professor of Theory and Practice.*
ROBERT WOOD, *Professor of Cattle Pathology.*

BOARD OF EXAMINERS.

D. D. SLADE, M.D.
JOHN W. WARREN, M.D.
GEORGE BARTLETT, M.D.
CHARLES GORDON, M.D.

To this an outline of the system of education intended to be adopted is annexed. Here there exists a good deal that is highly commendable, and which, if carefully carried out, cannot fail to bring about the end in view, namely, the inculcation of sound principles in the minds of students fitly educated for their reception; that thus they may become, in the language of the originators, instrumental in sowing broadcast throughout the United States, the germs of usefulness, by administering relief to the sick and suffering of the inferior order of creation.

Again we wish the Institute all prosperity.

REGULATIONS.

The first session of this Institution will commence on the first Monday of November, 1855, and will continue four months.

The object in view is, to afford ample instruction to those persons desirous of qualifying themselves for the practice of Veterinary Medicine and Surgery.

Tickets to a full course of lectures, seventy-five dollars.

Matriculation ticket, three dollars.

Graduation fee, twenty dollars.

The following are the courses of Lectures to be delivered in this Institution:

Anatomy and Physiology of the Horse . . .	Prof. Geo. H. Dadd.
Theory and Practice of Veterinary Medicine and Surgery	Prof. Chas. M. Wood.
Cattle Pathology	Prof. Robt. Wood.

Students will also be furnished with tickets, without extra charge, to attend the following courses of lectures: a department of instruction in Harvard University; commencing at the Medical College, North Grove Street, on the first Wednesday of November, at 12 o'clock, noon:

Pathological Anatomy	Prof. J. B. S. Jackson.
Chemistry	Prof. Cook.

COURSE OF INSTRUCTION.

On the first Monday of November, 1855, at 12 o'clock, the President of the Institute will deliver an introductory lecture, which will be followed by addresses and other exercises calculated to interest the patrons and students of this Institution.

Each session occupies a period of four months.

The Professors will each deliver the usual courses of lectures; the time to be so arranged as to give the students sufficient opportunity to attend those of Professors JACKSON and COOK.

LECTURES OF THE FACULTY.

The Professor of Anatomy and Physiology will lecture on the various tissues, organs, and structure of the body of the Horse; demonstrating at the same time their mechanical and vital properties, their adaptation, design and function; their position, dimensions, connection and organization; which will be illustrated by means of the French model, skeleton, diagrams, and by wet and dry preparations; an extensive collection of which has already been secured.

The Professor of Theory and Practice will lecture on the general principles of Therapeutics and Pathology, and on the History and Treatment of Diseases of the Horse.

He will describe the various remedies used; point out their physical and medicinal properties; and mode of administration.

The Professor of Cattle Pathology will lecture on the various diseases of Neat Stock; the treatment of the same; and the remedies best adapted to their peculiar organization.

Clinical lectures will occasionally be given by the Faculty, on cases that occur in their practice. In fact every arrangement will be made to secure a thorough and scientific course of instruction.

CONDITIONS ON WHICH STUDENTS ARE ADMITTED TO EXAMINATION AS CANDIDATES FOR THE DEGREE OF V. S.

1. The course of instruction shall occupy a period of three years.

2. Each candidate shall furnish evidence that he is twenty-one years of age.

3. He shall have attended two full courses of Lectures; one of which, however, may take place in any other incorporated university.

4. He shall satisfy the Faculty that he has had the advantages of a common school education.

5. He shall furnish satisfactory proof that he has been engaged in the study of medicine during a period not less than twelve months, under the direction of a medical practitioner, whose certificate will be considered satisfactory proof of the fact.

6. The candidate for examination shall, previous to the time appointed, notify the Dean of his intention, and furnish the documentary evidence of his term of study, tickets to Lectures, &c.

The candidate having complied with the preceding regulations, shall, on the day appointed, be examined by the Faculty and Board of Examination, on the various branches of Veterinary Science. At the close of such examination, the decision of the Faculty and examiners shall be declared; if favorable, it shall be recorded by the Dean, and the several candidates are then entitled to the degree of V.S., and shall be furnished with a Diploma bearing the seal of the Institute and the signatures of the President, Faculty, and Examiners. Should the decision be unfavorable, the candidate must qualify himself in whatever branch he appears to be deficient, and present himself for re-examination at such time as the Faculty shall direct.

FACULTY.

The Faculty shall consist of the President, Veterinary Professors, and Lecturers; who shall hold annual examinations for the degree of V.S. In extraordinary cases, they shall also meet for the same purpose at any other time.

One of their number, to be chosen by themselves, shall always act as Dean. With him the students shall matriculate,

by entering their names in a book kept by him, which shall contain an obligation that they will submit to the laws of the Institute and the Faculty, and by paying the matriculation fee and the price of the Professor's tickets.

OVERSEERS.

The Board of Overseers for the government of the College and supervision of its affairs, consists of the corporation, its associates and successors.

They shall choose from among themselves a Chairman, Secretary, and Treasurer, and have power to increase their number and fill vacancies as circumstances require.

They shall have the power to manage the affairs of the Institute, appoint the Professors and Lecturers, receive contributions, and disburse the same for the benefit of the Institute.

They shall meet at least once a year for the transaction of business, the time of meeting to be decided on by themselves. Cases, however, may occur which require their counsel and sanction. Therefore, the President of the Institute may appoint a day of meeting, and the Board of Overseers shall be duly notified and meet accordingly.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, JULY 25, 1855.

Present—Messrs. BRABY, CHEESMAN, ERNES, HALLEN, JEX, SILVESTER, STOCKLEY, VARNELL, WILKINSON, and WITHERS; Professor MORTON, and the Secretary.

On the motion of *Mr. Gabriel*, seconded by *Mr. Silvester*, Mr. Hallen, Vice-President, took the chair.

The minutes of the preceding meeting having been read and confirmed, a letter was read from Mr. Shorten, of Ipswich, announcing a donation of several specimens to the Museum of the College; and, on the motion of *Mr. Wilkinson*, seconded by *Mr. Silvester*, the thanks of the Council were unanimously voted for the same.

The Registrar's report was then read; it stated that eleven deaths had occurred during the quarter, namely;—J. Dixon, of Leeds; G. Douglas, of Grantham; G. Miller, of Methvin; J. Reynolds, of Newark; R. Thompson, of Beith; J. Titchmarsh, of Henham; W. Gavin, 17th Lancers;

E. Dycer, of Dublin; H. Faulkner, of Portsmouth; G. Carruthers, of Lancaster; and F. Siddall, 10th Hussars: and that forty-one gentlemen had been admitted members of the College; thirty-five from the London, and six from the Edinburgh school.

The report, on the motion of *Mr. Braby*, seconded by *Mr. Withers*, was received and adopted.

The Treasurer's report and quarterly balance sheet were next brought forward, from which it appeared that the sum of £525 19*s.* had been received during the quarter, which, added to the balance in hand from last year, of £150 7*s.* 5*d.*, gave the amount of £676 6*s.* 5*d.* The expenditure of the quarter had been £261 11*s.* 1*d.*, leaving a balance in hand of £410 15*s.* 4*d.*

In the debate which followed much satisfaction was expressed at the prosperous state of the finances; and, on the motion of *Mr. Silvester*, seconded by *Mr. Cheeseman*, the report and balance sheet were unanimously received and adopted.

The thanks of the meeting were, on the motion of *Mr. Jex*, seconded by *Mr. Ernes*, given to the chairman, after which the proceedings terminated.

SPECIAL MEETING, August 22, 1835.

Present—The President; Messrs. Burley, Ernes, Hallen, Jex, Robinson, Stockley, Silvester, Varnell (Assistant Professor), Wilkinson; Professors Spooner, Morton, and the Secretary.

The President in the chair.

The minutes of the previous meeting were read and confirmed.

A letter from Mr. Pyatt, dated Nottingham, stating that in consequence of an accident Mr. Lacey was prevented attending, was read.

A letter from Mr. Newdegate, recommending that the time of attendance of the students at the Royal Veterinary College should be extended, in order that their education may be rendered more complete, and suggesting to the Council the desirability of lowering the examination fee, was also read.

A discussion arose upon the latter communication, in the course of which *Mr. Wilkinson* disclaimed any previous knowledge of the letter, and regretted that it should have been presented at this meeting, seeing that he had a motion of a

closely similar character to bring forward. *Mr. Ernes* highly approved of the first part of the letter, but condemned that portion referring to the examination fee, and thought that no further notice could be taken of it. *Mr. Hallen* and *Mr. Robinson* concurred in these observations, but *Mr. Gabriel* recommended the appointment of a committee to confer with Mr. Newdegate. *Mr. Silvester* and *Mr. Burley* were in favour of a committee being appointed. *Mr. Varnell* conceived such a course would form an improper precedent. *Mr. Jex* inquired if appointing a committee of conference would do away with Mr. Wilkinson's motion; and he was answered in the affirmative by the *President*, as far as the present meeting was concerned. *Professor Spooner* thought that the discussion upon Mr. Wilkinson's motion would elicit the opinions of the Council respecting the examination fee, and that then the Secretary should reply to Mr. Newdegate. At length *Mr. Silvester* moved that the communication be entered upon the minutes, and its receipt acknowledged by the Secretary, in a like manner to other public documents. This was seconded by *Mr. Burley*, and adopted.

Mr. Wilkinson proposed that in Bye-law No. 27, the fee for examination be reduced from ten to seven guineas; and in introducing the motion, stated that the main object he had in view was to bring about the union so desirable for ulterior purposes. He was an advocate for the reduction of the fee solely from the wish to effect that union between the Edinburgh school and the Council, without which he did not believe any permanent good could be effected. He (Mr. Wilkinson) was not authorised by Professor Dick or the Highland Society to make any promise whatever; the proposition arose entirely from himself, but still he felt the strongest hope and assurance that if the motion were carried, it would be favorably received.

Mr. Ernes observed, in seconding the motion, that he did not consider the present fee too high, but seconded its reduction entirely from the same feelings, and with the same desire for unanimity, that induced Mr. Wilkinson to bring forward the motion.

Mr. Stockley could not conceive that the reduction of three guineas could secure any great advantage to the profession.

Mr. Hallen quite coincided with the views of the mover and seconder of the motion; the facts were notorious, that persons holding the diplomas of the Edinburgh school were eligible for appointments both in the cavalry and East India service, and also, he believed, in the artillery; if not so, Mr. Stockley would correct him. *Mr. Stockley:* I have no applications of

that kind. He (Mr. H.) did not think the funds of the college would in the end suffer from the reduction of the fee, and he felt satisfied it would be the means of bringing about brighter prospects for the profession.

Mr. Gabriel considered the motion as more likely to injure the chartered body than any that had been advanced since the failure of those aimed at the existence of the charter itself; for next to crippling the powers of the body corporate by interfering with the charter, none were so likely to effect that purpose as reducing its funds, which depended mainly on the fees proposed to be reduced, and thus rendering it helpless to carry out those improvements which were so earnestly desired by the body at large. He did not believe the motion, if carried, would have the effect anticipated, and he most decidedly opposed it.

Mr. Burley wished to know if the Council were in a position to admit of the reduction of the fee. He was quite sure that such a step would lessen rather than raise the character of those admitted into the profession. He did not consider the present fee at all too high, and therefore should vote against its reduction.

Professor Morton considered that this should not be a mere question of pounds, shillings, and pence; the respectability of the profession must depend mainly on the education of those admitted into it; but the union desired was a point of so much importance that every other consideration ought to be secondary to it; he was of opinion that the income of the College would not suffer from the motion, to which he should give his support.

The President thought it desirable, before the present resolution was carried, that it should be ascertained as a fact that Professor Dick was willing to accede to such an alteration, for if so, he had no doubt every one would concede to the reduction of the fee.

Mr. Hallen.—I am in a position to say there is every probability, though not a certainty, that the alteration will be acceded to by Professor Dick.

Messrs. Jex, *Varnell*, and *Wilkinson*, spoke in favour of the motion, and *Messrs. Robinson* and *Silvester* against it. *Mr. Wilkinson* having replied, the motion was put, when 8 voted for, and 5 against it.

The proposition was accordingly declared to be carried.

Mr. Wilkinson moved, that the members of the Board of Examiners for Edinburgh be selected by the Council from a list of twenty names, to be forwarded from the Edinburgh School.

Mr. Hallen seconded the motion.

Prof. Spooner moved as an amendment, that the moiety of the Court of Examiners for Edinburgh be completed, and that a Committee of this Council be appointed to select such persons as shall be by them deemed efficient, and report the same to the body corporate, for adoption or otherwise.

Assistant Prof. Varnell seconded the amendment, which was put and carried.

A Committee consisting of the following gentlemen was then appointed to carry out this resolution—three to form a quorum:

The President,
Mr. Wilkinson,
„ Robinson,
Mr. Hallen, and
„ Gabriel, Secretary.

Mr. Wilkinson moved, "That the Board of Examination, which has existed under the authority of the Highland Agricultural Society, shall have a retrospective legality conferred upon it, in order that veterinary surgeons holding the diploma of that Board may become members of the Royal College of Veterinary Surgeons, under certain conditions, viz.: that they shall pay the difference of fee and undergo a written examination."

Mr. Hallen seconded this proposition.

Mr. Silvester moved as an amendment, and it was seconded by *Mr. Varnell*, that Mr. Wilkinson's motion be adjourned to this day six months.

The amendment, on being put to the meeting, was negatived, and the original motion carried with but two dissentients.

Messrs. Wilkinson, Ernes, and the Secretary were named as the committee of supervision; and the proceedings then terminated.

J. Wilkinson.
W. Ernes.
E. N. Gabriel.

Veterinary Jurisprudence.

POISONING WITH LEAD.

(*Before Mr. Justice Crompton, and a Special Jury.*)

STEVENS *v.* BARWELL AND ANOTHER.

Counsel for the plaintiff—*Mr. Barstow, Mr. Serjeant Kinglake*, and *Mr. Collier;* for the defendants—*Mr. Smith, Mr. Karslake*, and *Mr. Gill.*

Serjeant Kinglake, in stating the case for plaintiff, said he was the owner of a freehold estate at Charterhouse, a farm

of value, which had been occupied by the plaintiff himself for some eighteen years. The grievance of which he complained was an injury done by certain lead works, set up by the defendant. The plaintiff had experienced the greatest possible damage on his farm, and especially to the stock upon it. It was a dairy farm. Plaintiff kept from thirty to forty cows, and also a number of colts; he likewise had a farm at Cheddar. The defendant was the chairman of what was called the Mendip Mining Company, and Rodwell was its manager. The Company had been established about ten years. They had been for some time getting permission to gather slag, which contained lead ore, and in which the district seemed to have abounded in the time of the Romans, who, in their assiduity to dig it up, had scattered the refuse about the district. This slag when taken up was subjected to blasting furnaces, and for the purpose of accomplishing these ends, the company had set up works. The law of the country was, that if a person sets up a factory, or a furnace, or any work of that kind for his own advantage or good, he must take care that in the use of it he did not do any injury to his neighbour. Now the defendants, for the purpose above stated, had erected furnaces at a place called Ubley, of three or four different classes and descriptions. Three of them were reverberating or calcining furnaces, and the other was a blasting furnace. Charterhouse farm, which the plaintiff occupied, was situated near the spot on which these works were erected, and between it and the furnaces the plaintiff's brother kept a small farm. In the early part of April, it was found that a very large quantity of smoke issued from the chimneys of the furnaces in question, and shortly after the plaintiff's brother began to find that his stock suffered, and rather than get entangled he gave up his farm. Mr. Barwell became tenant of that, and also of another large farm near it. At that time they made some alteration in the chimney, and made it of a much greater height, the effect of which was that the plaintiff's lands began to suffer. In 1851 plaintiff found the young animals of his stock dying—it could be clearly shown by the venom on the grass on the surface of the land. The plaintiff lost, from 1851 down to Midsummer, 1853, four cows, forty-eight lambs, and six colts. He (the learned counsel) would prove they were poisoned, and poisoned by lead. He would show that Mr. Herapath had found lead in the animals, in the hay, and on the hedges, and he had taken weeds from the farm coated with the sulphate of lead. It had been found even in the milk after it had passed through the cow. It did not affect vegetation in the slightest degree

—it only affected animal life. It was not soluble; where it fell there it must lay. It was not in one season, or he was told it was not in ten; it must be many a long year before the would be restored to its former condition.

Several witnesses were then called to prove the injury to the stock.

The case was resumed on Monday, when the evidence of other witnesses to the same effect was taken.

Mr. William Herapath, analytical chemist, was then called. —He knew Mr. Barwell, the defendant. Called on him in February last, when Mr. Barwell told him that he was the chairman of the Mendip Mining Company, that the farmers had complained of the works as being injurious to their cattle, and wished witness to undertake the management of the case for the company. Mr. Batt, M.R.C.V.S., brought him the stomach, and other viscera, of a colt in the year 1853. The stomach had some hay or grass in it; he found no lead in the contents of the viscus, but some in the mucous or lining membrane; the greater part was oxide of lead; he also produced some lead from the lungs and the liver, but not enough to bring to the court; after that he visited the Charterhouse farm, and saw the dead part of the stock; there was the carcase of a lamb and pig hanging up in the house; the lungs of each were greatly affected; in both instances they had great patches upon them of a blackish colour, they did not look like ordinary inflammation nor suppuration; there were two more dead lambs in the stable; witness had them opened, and their lungs presented the same peculiar appearance, and a bluish streak round the gums; the pig's kidneys were quite bare of fat. Whilst there, another lamb was brought in nearly in a dying state; its limbs were paralysed, and another in a basket could not stand; opened the lamb with the blue gums; there were some black patches on the lungs, and on some of the second lamb a darkish matter; took some of it out, and found lead in it. Mr. Stevens showed him some weeds, of which he took a part home and obtained lead from them, which he now produced; went out further upon the farm and took a small quantity of hay, to endeavour to try it at home, but afterwards found it was too small for such a purpose, that he required a larger cut to be sent; he was then anxious to have some of the milk from the ewe that had suckled the lamb which died; had it milked in his presence, and took about six ounces from it, and found some lead in that; he then went to the field in the extreme north of the farm and there saw a cow milked; took the milk home, and found lead in that also. On the 6th of March after, Welstead brought him

a cut of hay, and from it he produced the lead shown to the court; some time after, Welstead brought him the head of a lamb, the lungs of a calf, and a bundle of sticks from the farm; they each contained lead, viz., oxide of lead, carbonate of lead, and sulphate of lead; on the 21st of May, witness went again, and saw Dr. Taylor and Professor Brande; they were on the part of the Company that time; their attention was directed to two waters there, one was a running brook, the other a pool in front of Stevens's house; witness took samples of both these waters, but found no lead in either of them; there was slag in the water, and in that there was lead; thinks, from all the characteristic symptoms, and from finding lead in all of the animals, that their death was occasioned by lead poison, which may have been deposited from the atmosphere. This closed his examination.

The jury here inquired how long Mr. Smith would take to cross-examine Mr. Herapath, and upon being informed at least one hour, wished the Court to adjourn until the following day, which his Lordship acquiesced in, it being seven o'clock.

Tuesday.

The court was opened at nine o'clock.

Mr. Smith proceeded at once to cross-examine *Mr. Herapath* at great length, but could not at all shake his testimony, his answers being perfectly clear and straightforward. The learned counsel had the assistance of *Professor Brande* to prompt him in his questions upon chemistry.

Mr. Smith then addressed the jury for the defendants for a considerable time, averring that he should prove that the land on that farm was of a poisonous nature, and had been for centuries, and that the smelting works had nothing whatever to do with it.

Having concluded his speech, the Court adjourned for ten minutes, and, upon its reassembling,—

Serjt. Kinglake addressed the Judge, and said the counsel had come to an arrangement, which, he believed, would be as satisfactory to all parties as if a verdict had been given either way; here it was not to have ended, and there would be no end to the litigation. The arrangement was to withdraw a juror, subject to a rule of court.

The real termination of this case, as far as we could learn, is that the plaintiff will be compensated for all his loss since 1853, and the defendant will purchase the farm.—*Wells Journal.*

In further explanation of the "Effects of Lead in the

Slow Poisoning of Animals," Mr. Herapath has sent the following communication to the editor of the '*Chemist*:'

"I have never met, in any of our toxicological works, with a good description of the effects of lead in the slow poisoning of animals; I therefore send you the result of a most interesting trial at the Somerset Assizes, where the injury was done by the fumes of a lead-smelting furnace upon an estate, the nearest point of which was half a mile, and the most distant a mile from the works.

"In the year 1851, the furnace was erected on the Mendip Hills, to extract the metal left by the Romans, in the refuse of their mining operations; shortly afterwards a farm, which had always been healthy and of high reputation, began to suffer from the fumes; illness and a great mortality existed amongst the stock; on examining the dead animals in 1853, I found lead to be the cause, and I also discovered that metal on the hedgerows and hay on the estate. This year an action for damages was commenced, and the following information was elicited:—The blast-furnace emitted a white smoke which, collected when it was partially condensed in the shaft, gave me a small proportion of oxide of lead, and the remainder of carbonate and sulphate of lead; these three matters were traced by me from the condenser of the works, to the surface of the vegetables growing on the plaintiff's farm, and the lead of the mixture was found in the lungs and air-passages of the dead animals.

"The effects of this metal were, a stunted growth, a leanness, shortness of breathing, paralysis of the extremities, particularly the hinder ones, the flexor muscles of the fore legs affected so that they stood upon their toes, swelling of the knees, but no constipation or colic, as in the human species; in a few months death followed. If the injured beasts were removed to another farm they never throve. In the young the symptoms were more conspicuous, and the mortality greater. Lambs were yeaned paralytic; when three weeks old, they could not stand, although they made great efforts to do so; in attempting to feed them from a bottle, they were nearly suffocated from paralysis of the glottis; 21 died early out of 23. Colts also died, and those that lived could not be trotted 150 yards without distressed breathing. Pigs confined to the stye were not injured; but if allowed to roam were soon affected. The milk of cows and sheep was reduced in quality and quantity, and cheese made from the former had less fat in it; I found in the milk of both minute traces of lead.

"The dead subjects showed the mucous surfaces to be paler

than natural, the lungs had large portions of a dark-red colour, with circumscribed edges, not like ordinary inflammation, but evidently surcharged with fluid; this accounted for the shortness of breathing, as only portions of the lungs were fit to perform their functions; in some parts there appeared bluish spots, where the powder had been stopped by the bifurcation of the air-passages; a blue line appeared in the gum of the lower jaw, which Dr. Taylor said in court was not caused by lead-poison, as it did not occur as in the human subject on the upper edge of the gum, but where the gums first come into contact with the teeth, about 3-16ths of an inch below the top edge; I therefore dissected out this line, which was about three-quarters of an inch in length, and the thickness of a sewing cotton, and by the aid of carbonate of soda and the blowpipe reduced a spangle of lead from it, quite visible to the jury, without the aid of a microscope. I was agreeably surprised at this result, as I expected the mark arose only from altered blood, but it will now become, in the hands of a good blowpipe manipulator, the most ready means of detecting lead in the dead subject.

"It will be observed, that of the symptoms, those of emaciation, paralysis, and the blue line, are similar to those of the human subject, that constipation and colic are absent, and we get two new ones, shortness of breathing, and swelled knees. I will merely add that the Company agreed, without calling witnesses, to pay £500 damages, and to buy the estate at full value."

ARMY APPOINTMENTS, &c.

From the London Gazette of Friday, Aug. 31.

To be Veterinary Surgeons:

William Varley, Gent.
John James Channon, Gent.
Thomas Paton, Gent.
Henry Hussey, Gent.
John Burr, Gent.
William Lyle Fenner, Gent.

London Gazette of Friday, Sept. 7.

War Office.

7th Dragoon Guards, Veterinary Surgeon Matthew Poett, from the 1st Dragoons, to be Veterinary Surgeon, *vice* Cherry, who exchanges.

1st Dragoons, Veterinary Surgeon Alfred Henry Cherry, from the 7th Dragoon Guards, to be Veterinary Surgeon, *vice* Poett, who exchanges.

British German Legion.

1st Light Dragoons, George Longman to be Veterinary Surgeon.

General Regimental Order,
Royal Regiment of Artillery, *Sept.* 22.

Frederick Spratt, Gentleman, to be Veterinary Surgeon, by augmentation.

Jonathan Briggs, Gentleman, to be Veterinary Surgeon, by augmentation.

London Gazette of Tuesday, Sept. 25.

The undermentioned gentlemen to have the local rank in Turkey of Veterinary Surgeons, while attached to the Land Transport Corps of the Turkish Contingent:—

Frederick de Fair Elkes, Gent.
Charles Moir, Gent.

HOSPITAL STAFF.

To have the temporary rank of Staff-Surgeon of the First Class.

Joseph Sampson Gamgee.

"Mr. J. S. Gamgee left London for Novarra, on the evening of Saturday, Sept. 1st, as 1st Class Staff Surgeon, and Chief of the Medical Corps to the Anglo-Italian Legion, now assembling in the North of Italy under General Percy. We have reason to know, that before his departure, Mr. Gamgee expressed high admiration of the liberal and very wise manner in which the authorities of the Army Medical Department are providing for the health of the troops in Her Majesty's service."—*Medical Times and Gazette.*

OBITUARY.

We have to record the deaths of Mr. Winstone Simmonds, of Swansea, and Mr. Joseph Tombs, of Great Barrington. Mr. Tombs obtained his diploma in 1828, and so conducted his practice as to be deservedly respected by all who knew him.

THE

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THE INTRODUCTORY ADDRESS

Delivered by Professor Spooner,

At the Royal Veterinary Colleye, London.

Session 1855-56.

Gentlemen,—It is often said, that "there is nothing so difficult as a beginning;" and true it is, that each commencement of a course of duties has difficulties which are peculiar to itself. An introductory address, preparatory to the labours of a new session, reminds me forcibly of this proverb, and brings to my apprehension an amount of responsibility which is shared pretty equally between you and myself. To many of you, the position in which you now stand is altogether a new one. You are for the first time embarked in studies which doubtless look formidable enough to you, and fill you with fears as to the future. You have quitted your homes to commit yourselves to a stream which, in a year or two, will conduct you on into the great ocean of life. All is novel to you. A strictness of application, so as to acquire proficiency, is demanded of you, and to which, hitherto, you have possibly been strangers; but which, it is very certain, the world, if you are to do any good in it, will most rigorously exact from you. To a certain extent, also, you are left to yourselves, having a degree of personal freedom such as you have never probably before enjoyed, and this too amid the bustle and temptations of this vast metropolis. These are some of your difficulties; and I cannot doubt that the first day of the session brings them, in a concentrated form, to your minds; and that, although the prospects of this day be bright with novelty and hopes, there yet lurks a certain undefinable feeling of anxiety and uncertainty, within you.

Recollecting my own pupilage, and likewise my own first day of the session, I can sympathise with you in these very natural and even proper feelings. Nor would I abate one jot the weight of responsibility which fixes on your minds, and which, the more vividly it is felt, the better earnest it becomes that you are here to work, and not to play; and that you will thus be enabled, on the last day of the session, to acquit yourselves of these responsibilities to the satisfaction of your teachers, your examiners, and the profession which you aspire to be members of.

The hopes of the world often rest on new beginnings. Turning over new leaves is our especial privilege, and an incentive to duty. To you who are altogether new to this institution, I would say, keep your page clean, and write upon it all the knowledge which your instructions and studies enable you to gather. Let no blot of dissipation obscure it; no apathy or inattention mar the legibility, or the remembrance of the facts which you have to record. In short, begin well, and be jealous of keeping unsullied the good resolutions of "this first day." To you who have been pupils before, and whose faces and past career and attainments are known to me, I would also urge home the beneficial influence of a new beginning. Let an additional *momentum* be given to your industry; and remember, that as the period of your examination approaches, as the time of your probation grows shorter, as the hopes of those who have sent you here become more anxious, you have increased motives for not wasting an hour, for not omitting an opportunity of acquiring knowledge, and above all, for not indulging in a single habit which is contrary to that assiduity which study demands, or which, if continued, might interfere with the successful prosecution of your adopted calling.

To me, each beginning of a session, I confess, has its peculiar difficulties, and these are heightened by the fact, that I have so often addressed similar audiences within these walls. In such moments as these, your predecessors (past generations, so to speak, of veterinary students), pass before my mind's eye, as, for more than a quarter of a century, I have witnessed them from year to year launch forth into the world. It is usual for many of these adult sons of the College, to favour us with their presence on these anniversaries; and they remember, I trust not without pleasure and satisfaction, the day when they first took their station as students upon the benches which you now occupy. They have listened to me before upon themes necessarily very similar to those which I must dwell upon to day, and which I fear will render

my discourse to them as but a "thrice told tale." And yet, every year our subject is really new, the details which constitute it, and the arguments that enforce it, being altered or varied by the fluctuations of time.

These anniversary events, are indeed like a wheel, in which there is a certain sameness in its revolutions; and if I may continue the figure, this wheel is in constant progress, never stopping for a moment in precisely the same place.

We are undoubtedly travelling with a force which nothing can hinder, because it is the force of necessity. We are passing into a state in which greater energy, more work, larger scientific attainments, strict sobriety and self-denial, more sedulous cultivation of talent, and keener competition for all the prizes of life, will be inevitably demanded from every man who expects to obtain any measure of success in his generation. In ordinary times, institutions, statesmen, professional men, students, and in short all go on quietly without that change which is always occurring becoming markedly perceptible; but when the energies of a people are roused and called upon as they are by the present war, then woe be to laggards in whatever grade of society they may be found. Professions and industries are the nerves and muscles of nations; and when the great wrestle of war comes, these muscles are put upon the stretch, and they are required both to grow in bulk, and increase in powers of resistance, if the conflict is to be maintained and carried to a succesful termination. Especially is this the case with those callings which are directly connected with the "field of honour." I need hardly tell you that our own profession is one of those engaged in the carrying out of military operations. The purchase of horses for the cavalry, the transhipment of them to the theatre of war, the care of them during the transport, the landing of them on the enemy's shores, the maintenance of them in new climates (where they are exposed to new diseases), the whole economical dispensation of the cavalry, its management in long marches and over difficult roads, to say nothing of the veterinary surgeon's duties on the field of battle,—all these are matters which press upon our profession with a very different weight to any which it has been subjected to, during the long years of peace with which it has pleased God to bless us. In our proficiency in these various details, I trust that we shall be enabled to show the public some of the advantages that accrue from this Institution, and that the country will have reason to acknowledge that the scientific cultivation of the veterinary art, and the attempt thus made to raise its practitioners above the self-

taught farriers of older times, has been attended with much success, and with real practical results. At all events, all departments of the army are necessarily, in the great events which are happening, put seriously upon their trial. Recollect then, my younger friends, that you are not entering a mere stagnant art—one in which it will be sufficient for you to follow the routine of your fathers, but that you are stepping into the triumphal car of an advancing profession, and that all your talents, in their full energy, will be required to be exercised by you, if so be you are just to yourselves and your country.

Already, as you are well aware, the events of the last twelve months have given rise to several new phrases which are passing current among us. There is such a thing now very commonly spoken of, as "Administrative Reform;" and although this is no easy thing to bring about, or even to suggest the best way of obtaining, yet the familiar manner in which all men discuss it, forcibly shows that a great want is recognised by the country. There is also the rigid examination for places that used to be given away to nephews, friends, dependents, and other connections; but which are now being bestowed only on those who have proficiency and worth; and which has obtained the familiar name of the "Merit Service." These are ominous signs for laziness and incompetency! "The right man in the right place," is also something new. This will put every man upon his mettle, and compel him to ask himself what he is really fit for?

This progressive movement, however, brought to a climax by the terrible war in which we are engaged, has been really, though quietly, going on ever since the oldest of us was born. In proof of this, look at the improved curriculum of studies which all institutions have been gradually demanding of the student. We could no more avoid this, than we could arrest the progress of knowledge itself, or bid the railway spare "the old stage coach." As science and invention progress, and as the education of the public is extended, so the pupil of veterinary medicine must increase his studies and hours of labour, or he will fall below the standard of the age. Observe also the augmented difficulty which is connected with the obtainment of a diploma. The profession sternly demands the conquering of this difficulty by you, because the progressive state of society demands it of the profession. We can no more prevent this claim upon your powers, had we even the wish to do so, than the inhabitants of two great towns could now-a-days dispense with the electric telegraph to carry on commercial intercouse

between them. It is a social necessity. I do not make these remarks to discourage you, for nothing will be required of you either here, or when you present yourselves for your examination, which steadiness and industry cannot acquire. When we reflect, is it not far better for us to live in a period which braces us for activity, and keeps us in movement, rather than in one when scientific and intellectual attainments were less called for?

This institution has apprehended its position, and is prepared to make such alterations and improvements in its provisions for your education as the altered circumstances of the age, and the experience of the past, warrant and require. The general observations I have made are, indeed, but preparatory to this subject. The well-being of the pupils has lately been under serious consideration, and I will now dwell at some length on the means by which it is proposed to increase the efficiency of the education to be obtained here. I therefore claim your serious attention to the Rules appertaining to Pupils, which are in some respects new, and have just received the sanction of the governors of the College. They are as follow:

I.—The sessional course of lectures commences in October and ends in May. The clinical instructions extend throughout the year.

II.—A fee of twenty guineas must be paid on the entry of each pupil; for which he is entitled to attend the lectures and general practical instructions of the College, until he shall have passed his examination, provided he conforms to the rules of the institution.

III.—A pupil to be eligible for examination must have attained his twentieth year, and have attended at least two sessional courses of lectures on the following subjects, viz., Anatomy, Physiology, and Pathology of the Horse and other domesticated Animals, Veterinary Medicine and Surgery, Chemistry, Materia Medica and Pharmacy, Veterinary Jurisprudence, and the principles of Shoeing. He must also have carefully dissected as many subjects as the professor of each department shall think necessary for the attainment of a practical knowledge of anatomy; and have likewise satisfactorily attended the lectures, demonstrations, clinical and general instructions of the professors.

IV.—The time of the attendance of the pupils is from nine in the morning until four in the afternoon daily, subject to special exemptions by the principal professor. They are required to sign their names in a book, which will be open for that purpose, every morning between half-past eight and nine, except on Saturdays, when the book will be kept open till ten o'clock. On leaving the College they must again sign their names in the same book, between the hours of four and five o'clock.

V.—A pupil signing any other than his own name in the book renders himself liable to have the act laid before the principal, who will report the same to the governors of the College.

VI.—A pupil absenting himself from the College, during the session, for the space of one month, continuously or otherwise, without the sanction of

the principal, shall, as regards his eligibility for his examination, be required to attend three months in addition to the time specified in Rule III.

VII.—If it can be shown that a pupil is in the habit of signing his name at the prescribed times, and of absenting himself from the College during the intervening periods, such procedure shall be considered equal to a month's absence.

VIII.—Pupils of the second session are required, unless exempted by the principal, to act in rotation as clinical clerks. Two of them shall be selected, by ballot or otherwise, as may be determined on, who shall officiate for one week, and be succeeded by others. Their duty to be as follows: they shall accompany the professors on their visits to the patients, and note down the nature of each case, its symptoms and treatment, and also any observations that may be thought worthy of being recorded. At the end of each week the professors will examine the record, and report thereon.

IX.—Those pupils who have performed the office of clinical clerk to the satisfaction of the professors shall, on obtaining their diploma, receive a certificate to that effect.

X.—Pupils wishing to avail themselves of the advantages of being "prosectors" are directed to send in their names, within the first fourteen days of the session, to the clerk of the College, as candidates for the office, when two of them will be selected by the professors. None but pupils attending their second session are eligible for this duty.

XI.—Each "prosector," having filled the office to the satisfaction of the professor of that particular department, shall, after having obtained his diploma, receive a certificate of his having so done.

XII.—The dissecting-room will be open for dissections as late as five in the afternoon. The professors or demonstrator will report to the principal any irregularity of conduct that may take place therein.

XIII.—The pupils are required to take their seats in the theatre before the time specified for the commencement of each lecture. Orderly conduct is strictly enjoined both before and during the delivery of the lecture.

XIV.—At the end of their first session, the pupils will be examined by the professors, with a view to ascertain the progress they have made in their studies.

XV.—At the end of his second session, each pupil, should he have conformed to the rules of the institution, will be subjected to a *preliminary* examination, instituted by the professors, and if the result of such examination shall satisfy them that he has acquired sufficient knowledge of each branch of the science of veterinary medicine to entitle him to be examined for his diploma, then a certificate setting forth that he has been duly educated at the college will be forwarded to the secretary of the Royal College of Veterinary Surgeons. Without this certificate a pupil will not be eligible to be examined by the court of examiners appointed by the council of that body.

XVI.—Should the preliminary examination of a pupil prove unsatisfactory, the principal professor shall inform him in what branch of his education he has failed, and also direct his subsequent course of study until he be subjected to another examination.

XVII.—When a pupil has obtained his diploma, he shall then receive certificates from the professors of attendance on their respective lectures, or one signed by all of them, as may be hereafter determined upon, and likewise any other testimonial of merit that may have been awarded him.

These rules will show you at a glance the range of subjects which are deemed essentially necessary for a sound veterinary

education, and also the means and provisions which are thought conducive to this end.

"The anatomy, physiology, and pathology of the horse, and all other domesticated animals," stand first on the record. These branches of science are not in themselves medicine, nor do they constitute practice; yet they are indispensable telegraphs as it were of knowledge, enabling the medical man to operate with precision on the organs and viscera of the body, which, without the application of them, nature conceals from his view. In former days the practice of the veterinary art was necessarily founded on empiricism, and remedies were given for the merest superficial symptoms; often, it is true, with good results, but without any principles to guide the administrator.

The difference which now exists in the practice of the profession is very much like what has been recently effected by the laying down of the wires of the electric telegraph to the seat of war, as, without this means, we have no knowledge of what is taking place in that distant, and, so to speak, concealed part of the world; for it is hidden from our view, by its distance, as the lungs or the intestines are hidden by the boundary walls of their respective cavities. It is true we feel anxious and ill at ease; we endure the pains and suffer the penalties of our distant army, for it is really bound up with our hearts and living sympathies; yet we could not know what is going on, or what are its requirements, but for the telegraph as a means for communicating knowledge. Thus it is that we know from hour to hour what are the disasters, or successes of our arms in that remote and previously concealed part of the body-politic, so to speak; and the state doctors can, so far as their skill extends, treat the case, although they cannot see it but through the eyes of science, nor feel it but by the ministering hand of skill.

Just in the same way, anatomy, physiology and pathology are the conducting wires through the avenues of the animal body, and enable the veterinary surgeon first to know where the morbid action is going on, and then to attack the disease in its seat. This constitutes the difference between the well-educated veterinarian, and the charlatan. The man of education proceeds according to his knowledge of nature, whereas the other has nothing but general indications to guide him, which are often delusive. Both, however, may not unfrequently be wrong, so difficult and uncertain is the practice of veterinary medicine; yet there can be no question that a sound education in these fundamental sciences is the road towards certainty and safety in practice.

We have, therefore, prescribed for you the "careful dissection of as many subjects as the professor of each department shall think necessary for the attainment of a practical knowledge of anatomy;" besides, also, the attendance on at least two sessional courses of lectures on the same subjects; and by your diligent attention in this theatre you will, I have no doubt, carry away with you a general knowledge of these highly important branches of your study, to which your own dissections will give a full practical value.

You will observe in Rule X, that some of you are allowed to avail yourselves of the advantages of being "prosectors," that is to say, of preparing the parts for the lecturer or demonstrator. This office is necessarily limited to pupils attending their second session, and I venture to hope there will be many candidates for it.

Your conduct in the dissecting-room is also alluded to in the Rules. That place, I would remark, is the test of the assiduity and gentlemanly conduct of the student. Men of disorder, the spirits of idleness, are pretty sure to develop their vicious propensities there, if anywhere. Look well to yourselves then when you are performing that part of your duties. Do not allow loitering and play, or vulgarity, to creep in among you. Do not behave as if you thought you were dealing with so much offal; but comport yourselves as learners in the wonderful mysteries of animated nature. Regard your "subject" as a book replete with the most curious and useful interest, and one which demands your undivided attention. Associate yourselves only with the diligent at the dissecting-tables; and if you maintain habits of industry and dignity in the dissecting-room I have no fear for you in the other departments of the College.

The next subjects which are mentioned in the rules are "chemistry, veterinary medicine, and pharmacy." I scarcely need urge anything regarding the importance of these, for, in one short word, they are to constitute the apex of the pyramid. You will find it useful to take notes of all the lectures which you attend, yet not to such an extent as to aim at being reporters, but rather for the purpose of fixing valuable and practical facts on your memories. In your diligent attendance upon these lectures, you will find every day the link that exists between your various studies; and especially will your knowledge of anatomy and physiology be a perpetual illustration and commentary upon the practice of veterinary medicine.

The science of medicine divides itself into two branches, with both of which you must become intimately conversant,

in order to be good practitioners. These branches are *Diagnosis*, and *Treatment*. Diagnosis consists in determining by the symptoms, the seat and nature of diseases; and of distinguishing the differences that exist in the varied morbid states of the system; in plain English, diagnosis means knowing exactly what is the matter with your patient. If you have the discriminative power to find out this, the presumption is that you are fairly on the high road to administer your remedial measures with safety and certainty. The comparison between one who can diagnose well and accurately, and one who pursues a blind routine, or is content with merely a superficial observation of symptoms, is as the distinction between taking a good aim, and firing quite at random. You may hit sometimes even in the latter case, but with no certainty, and unquestionably with no credit. Moreover, success arising from ignorance leads to no further advantage; it does not establish the reputation of the practitioner, nor enable him to feel at home in his practice; but it often misleads, and causes him to adopt the same mode of treatment for very different conditional states of the organism. It is this chance success which has probably brought into use many of the panaceas and nostrums that disgrace both the practice of veterinary and human medicine, and which are the only resources of the idle, the careless, and the incompetent. On the other hand, when scientific knowledge is combined with close examination, and you are enabled to fix upon the seat and nature of the disease, and successfully to administer to the necessities of the case, it becomes as a light in your path which shines in two directions; in the first place, it enables you successfully to combat with the like forms of diseased action; and, in the second, to select remedies with even greater precision than at first. In short it opens your eyes to a world which the charlatan never enters, nor would he if he practised a thousand years,—I mean the world of causes and effects, the chosen sphere of all the sciences. This is a world full of light and edification; full of pleasure also to the successful investigator and practitioner, and where mere conjecture is not only dark, but replete with uncertainty, which is, to say the least of it, most unsatisfactory to the honest mind. Diagnosis is comprehended in the combination and harmony subsisting between anatomy, physiology, and pathology on the one hand, and morbid symptoms on the other; by its aid we assign to the true cause the symptoms which are present, whether the disease lies in the inward or outward parts of the frame. Thus the rational faculties of the human mind are

enabled to take cognizance of cause and effect, and of giving to the malady its local habitation and name.

It is difficult to say how much we are indebted to the practitioner of human medicine for the present state of veterinary science, as his division has been cultivated for a much longer time than ours, and the labourers in this field have of course far exceeded our own in number. Moreover, some of our own great authorities have been, in the first instance, medical men. We need, however, feel no jealousy on this account, for we have our own difficulties and peculiarities, in which the sister profession but faintly resembles us. For example, the medical profession has to do with beings, who, to a certain extent, can describe their ailments. We, on the other hand, have to deal with *dumb* animals; and I have often heard my medical friends express their wonder how we ever arrive at a knowledge of the disease. This you may rely upon,—such knowledge is only to be attained by rigid and close observation. Moreover, when you take into account that human medicine has to do with only one species, while we have the whole series of domesticated animals for our charge, you will be at no loss to discover that we have a field before us in which scientific glory may be won, if we choose to labour for it.

On another ground veterinary medicine deserves credit. It has risen to its present state quite unprotected; with no police to enforce it, and no laws to shield it. No man is responsible to society for the medical treatment of his horses or his cattle. He can call in a practitioner or not, as he pleases, and his neighbours will neither blame nor praise him much, beyond approving his wisdom, or censuring his imprudence, as it regards the care of his property. The only claim which dumb animals can make is to a common feeling of humanity; but which, as far as their medical treatment is concerned, it is not written in any statute-book. Look, however, at the different position of human medicine. Not a man, woman, or child, in this country, can die and be entombed without the doctor. Not a burial can take place without a qualified practitioner's certificate. No man can show his face in society, who has not provided satisfactory treatment for his ailing or dying family or friend. No man can die without leaving to the sister profession the legacy of a doctor's bill. Here, indeed, is a mine of practice, of even arbitrary power, and of wealth, for the medical profession. We have nothing like this to build upon; and yet, in spite of the absence of legal patronage and of public constraint, the veterinary profession has become recognised; has passed

from the forge and the farriery, into the pharmacy, the dissecting-room, and the lecture-hall; has developed its own resources; has acquired its own social position; has earned for its members the rank of gentlemen; has become part and parcel of the honour of the British and Indian army; and has succeeded in implanting the sentiments of humanity in the popular mind; so that this feeling, as directed towards the brute creation, has become a powerful law of society. It has done all this; and year by year it is acting with greater power. I think I am not wrong in drawing this deduction, that the present state of our profession, since it does not depend upon legal sanction and protection, but upon the free will of the community, is a proof that we have to a great extent, been faithful to our trust; and that the country feels a real want of our services; also, that whatever privileges the state may hereafter be pleased to bestow upon us, they have been legitimately earned. Our *status* in the world does undoubtedly depend upon the progressive advancement which has long been taking place in veterinary science; and it is your duty, as pupils, to prepare yourselves within these walls for the continuance of the work that has made the profession what it is, and ultimately to earn for it even a better standing than that attained by your predecessors.

From Professor Simonds you will receive instructions on general Physiology, and on the Anatomy and Pathology of other Domesticated Animals, excepting the Horse.

Professor Morton will be your guide and director through the beautiful paths of science which lead to a knowledge of Chemistry, Materia Medica, and Pharmacy.

To Assistant-Professor Varnell you will have to look for information on Descriptive Anatomy and the art of Dissecting. Mr. Varnell will also assist me in the clinical instructions and the general practice of the infirmary.

The lectures on the Anatomy, Physiology, and Pathology of the Horse, will be delivered by myself. Each of these subjects must receive your earnest attention, for they are indispensable to your complete education. Thus, without materia medica you would be uninformed respecting the substances which are used in the treatment of disease; without pharmacy, you would have no idea of how these substances are combined or correctly prescribed; and without proficiency in chemistry, you would have merely an empirical knowledge of materia medica. Besides which, chemistry is absolutely necessary for the education of every professional man who has any pretensions to a standing in society.

The Rules further provide for your regular attendance to the

practice of the College, the neglect of which will be followed by certain penalties, and these, I am sure, all of you who are desirous to improve, will sedulously avoid. I shall not pursue the ungracious task of recapitulating these stringent, but needful regulations, but content myself with observing, that your duty to your teachers, to your parents and guardians, and to yourselves, will be best fulfilled by an honorable compliance with the regulations imposed regarding the hours to be spent in acquiring knowledge within the walls of this institution. I would especially recommend you to observe the various cases which are under treatment from day to day; to make notes of what you see, and, as far as possible, to regard each case as your own. By attending to this, you will acquire a large amount of information.

For the purpose also of furthering your improvement, pupils of the second session will, in rotation, hold the office of clinical clerks; and they and the prosectors, when they have obtained their diploma, will receive certificates to that effect.

In the regulations you will likewise notice another provision, according to which, no certificates of attendance on lectures, or of merit, will be granted until after you have obtained your diploma from the Royal College of Veterinary Surgeons. This measure brings the examining body of the profession, and the Royal Veterinary College, into the closest union, so as to effect that object which is desired by both, namely, the elevation of the standard of veterinary education and competency.

In a word, we make *our* verdict of approval of your conduct and attainments contingent upon your successful passage through their examination. This I regard as a practical proof on our part, that we value the integrity and completeness of your professional education. For so long as this regulation exists, no isolated certificate will be granted by us, but you will receive *all* after obtaining your diploma.

No man henceforth will be enabled to palm upon the country a certificate merely from one professor, or to found a title to practise on any such partial and incomplete document. We expect that this will work well for all those who are diligent in their studies, and who have resolved to acquire that which is the necessary passport into society as a recognised member of the profession.

Another reason which makes this more creditable to the aspirant is, the *preliminary* examination you will have to undergo at the end of your second session, before you can be admitted by the Royal College of Veterinary Surgeons for

an examination for your diploma. The professors of this institution will ascertain by their examination of you whether you have a fair title to present yourselves or not before the examining body. Thus you will have virtually two examinations to undergo. In this respect we are following the same course which the spirit of the age has already dictated to the medical profession, in the various bodies of which there are several examinations, and candidates can take different degrees of rank or honour.

At present we have only one degree, but it would not surprise me if there should be a creation of a second order of merit, somewhat corresponding to that which exists in the College of Surgeons, between *Members* and *Fellows*. The necessity of the times, the awakened competition of all classes, the strokes of an ever busy industry throbbing in the heart of the country, the increased strain put upon all bodies of men, as well as upon each individual,—these are our excuses, if excuse were needed, for demanding more of you than we could reasonably ask of your predecessors. We are all of us linked to the car of a progressive science and civilization; and the velocity of 1855 is necessarily greater than that which existed only ten years since.

You will do well to remember, that in the course which you have to run, you must take good heed to one of the essential conditions of successful racing. You must not carry about you any great weights. Bad habits of all kinds are tremendous weights in the prosecution of any calling, and you will have no good speed if these press you down. Intemperance, immorality, and the association with low company, have been the bane of many a young man who began with the fairest prospects, and who might have trodden the path of honour and distinction. The dignity of our profession depends entirely upon the good character of its members. Unlike lawyers, you are not gentlemen by Act of Parliament, but you are gentlemen when you earn the title by the free voice of your clients and your country. You must therefore be the architects of your own honour and good fortune; and you will find that temperance, good conduct, and gentlemanly bearing, are the very foundations of that edifice you are desirous to rear.

I speak to you on these matters as not ignorant of your wants. Long experience, and an intimate acquaintance with the excellences and the frailties of many of your predecessors, have given me the privilege of addressing you freely, but in a most friendly spirit. As one of the representatives of your little state, I think I understand pretty well the

wants and the necessities of the veterinary republic; and whilst I admonish you of dangers, urge you to exertion, and excite your good intentions with bright hopes of success, I would also assure you that no personal sacrifice or labour shall be wanting on my part to meet your just wishes, or to start you fair in your professional career.

There are many other topics on which I should wish to address you did time permit, but at present I will only observe, that your scientific attainments will inevitably lead you into an association with the educated classes of the country, and thus improve your standing in the profession. No knowledge which you may bring to bear upon your studies will be thrown away. Although, for obvious reasons, an acquaintance with the Latin, French, and German languages, is not an indispensably necessary part of your education. Yet those of you who possess such knowledge, or have the energy to acquire it, will find it very profitable. Besides which, it is always a passport into good society. Most of our scientific terms are derived from the dead languages, and those of you who understand something of Greek or Latin, will be better enabled to comprehend the meanings of these terms, as well as the whole language of science. As for French and German, we have many valuable works on veterinary science in those languages well worth your perusal; and, moreover, none of you know where your lot may be cast, or what benefit or advantage you may some day derive from being the master of a foreign tongue.

The war is opening up a considerable field for the members of our profession; and the longer the great contest in which we are engaged shall continue, the more will the public find out the worth, in a national point of view, of veterinary science. There will be numerous appointments yet to make, to replace casualties, and to supply new places; and we may augur that a larger number of young men of respectability, energy, and education, will come into our ranks. And, indeed, one of the most pleasant considerations for you who are just entering upon your studies, is presented by the fact, that you have chosen a calling which is in the ascendant, and, unlike many others, is not overstocked. In our profession, which is a natural part and parcel of civilized and wealthy community, the supply of educated, enlightened, and humane practitioners, is that which actually creates the demand. So long as the profession is limited in number, and low in its tone and attainments, it will gain but little patronage. When it is numerous, united, and well educated, then the public will follow its rise, and become its supporter.

And, as this institution is now so intimately connected with the corporate body, I will venture to express a hope that that body, which represents the collective wisdom of our profession, will take into its consideration the lowering of the fee which is demanded for its deploma. Ten guineas is the present amount. This I confess I consider as excessive; it being half the sum which is paid by you for the whole of your instructions during the period of your education at this College. I see no necessary connection between the high standing of the profession, and a high rate of fee for entering it. The stringency of the examination should be a sufficient provision for maintaining a high standing.

After all, the quality which we wish to attract within these walls, and ultimately into our ranks, is not wealth, but merit; and it seems to me to militate against that "*merit service*" which cries so loudly on all sides, to raise any pecuniary barrier against the admission of deserving pupils to our examinations. But I feel I may very safely leave the decision of this question to the council of the body corporate, whose especial business it is.

As our institution is now firmly united in the bonds of amity with the corporate body, it may be fairly expected that that strength which belongs to union will be obtained in a larger measure than heretofore.

By the possession of our Charter our position in the state would seem to be materially improved; and whatever just demands we make, are likely to be listened to with at least respectful attention. Thus we may anticipate that some of the same privileges and immunities as are enjoyed by the medical profession will be granted to us. In times of great change like the present, it is not easy to foretell what may happen; and therefore I cannot express more than an anticipation on this subject. But, at all events, it is not unreasonable to expect that all appointments in the Army and in the service of the Honorable the East India Company, will be conferred upon the members of the Royal College of Veterinary Surgeons only. This will be no more than carrying out the objects the government must have had in view in the granting of the Charter.

It is a satisfaction to me to be enabled to announce to you, that the Royal Agricultural Society of England affords us the same hearty support as in previous years. It recognises the value of this institution, and the oneness of the object between it and the College. In proof of this, we receive from it an annual grant of £200, to be expended in lectures and demonstrations, having for their object the ad-

vancement of veterinary science. I hope we may long continue to deserve the support of this important body. For assuredly the best interests of agriculture are bound up with the interests of our profession. The breeding and rearing of stock of all descriptions; the importation of sheep and cattle, which is increasing enormously, as our population and means of transport increase, are matters not alien to the daily calling of the veterinarian. Nor can his education or opinion on such subjects be regarded otherwise than with deep interest by the enlightened agriculturist. I regard our connection with this body as a happy alliance of powers, and as a means which promises to be of essential service to agriculture; while, at the same time, it immensely extends the usefulness and the field of veterinary science.

The books which I would recommend you to procure for your studies, are 'The Anatomy of the Horse,' by Mr. Percivall; and also his valuable Lectures on 'Physiology and Diseases;' likewise Blaine's 'Veterinary Outlines, and Canine Pathology,' but in the anatomical part you had better follow Percivall than Blaine. You will also find Mr. Youatt's works of great value in your studies.

Mr. Morton's 'Manual of Pharmacy,' and his 'Toxicological Chart' are, I need hardly say, indispensable to you. The 'Hippo-pathology' of Mr. Percivall is a great and a national work, which you will no doubt possess.

The library of the Veterinary Medical Association, a society which I have always looked upon as forming an integral part of the education of the pupil, will furnish you with many valuable works for your perusal. You will do well to become members of this association. Any further recommendation of books, I leave to my colleagues, who will I am sure, in their respective departments, furnish you with all the details by which your studies may be prosecuted successfully.

The benches of our theatre are graced on this opening day with the presence of many, who have long ceased to be pupils here, yet whose reputation and standing in the profession are a proof that they know full well that their education never ceases so long as they live. I am sure I express the unanimous feeling of myself and colleagues, when I say, that we are truly sensible of the compliment paid us by their attendance. It is an assurance, that the youngest here, and the most venerable, are members of but one body, and that we have only one common end in view—the good of the profession. And whilst the aspirations of the pupils are necessarily heightened by this association, for even this brief hour, with the now distinguished and experienced men who were

once pupils within these walls, I would fain hope that our friends are pleased with revisiting, if I may be allowed the phrase, their scientific birthplace, their *alma mater*.

On such occasions as this, it is impossible not to revert to many who are no longer amongst us, but whose works and examples are a valuable legacy to their successors. Already, though the college is hardly to be called an old institution, the muster-roll of the names of those who have presided in this theatre, and have been the instructors of previous generations of pupils, begins to augment and shape itself into something like a history. St. Bel, Morecroft, Coleman, Sewell, these have gone before us. Blaine, Youatt, Percivall, and many others, are also passed away; but have left us the inheritance of their industry, and the fruits of their great attainments. It was not without great perseverance that any of these men founded the reputation which they have left behind them; nor assuredly without inward satisfaction did they expend their lives and energies upon a profession which they felt to be identified with humanity, science, and the good of their country. As the interval lengthens which separates us from them, we begin to estimate their worth, and to pass a more impartial verdict upon their labours. I will not venture to say anything in detail which I might consider characteristic of those who have preceded me in this College. I will not amplify upon the comprehensive mind of Coleman, or the single-hearted dignity of Sewell; but I will be content with the remark, that these names which are enshrined in our memories, owe their elevation to qualities which nature has sown broadcast among you, if you will only determine to cultivate them by consistency of conduct, steadiness, industry, careful observation, rectitude of purpose, and the postponement of pleasure to duty: and although we may not occupy the same position they did, yet there is a place of honour and respect within the reach of every one of us.

And now, gentlemen to work! To-morrow morning you must be with Professor Simonds in the trenches of peaceful knowledge and exploration, digging for the treasures which only labour yields. It is yours to supply the casualties that time makes in our ranks: yours, to carry on another stage of that old and never-ending siege which we have to wage on the one hand against ignorance, and on the other against suffering and disease. May we always present the imposing front of a truly united army! May we all be enabled to sink personal in public considerations, and may the destinies of those who begin their career to day, eclipse the brightest hopes which any of us have ever entertained for the future.

Communications and Cases.

SESAMOIDITIS;

OR THE SEAT OF OBSCURE LEG-LAMENESS OF HORSES UNMASKED.

By James Turner, M.R.C.V.S., Regent Street.

(*Continued from p.* 187.)

With the hope of substantiating the views which I have for many years propounded to the veterinary profession, of the formidable character of this disease, it is my intention to publish a series of sesamoidal cases, with their histories; such illustrations being especially called for, as the extreme complexity of the treble joint involved, gives rise to numerous varieties of the complaint, some being readily apparent both to sight and touch, and others occult in the living animal.

I am, however, constrained abruptly to put forth two cases *instanter*, because they are in point, and happen to have just fallen under my dissecting-knife through fortuitous circumstances.

First Case.—A street cab mare, a small game animal, thorough bred, or nearly so, very lame of her near fore leg, but workable. The flexor tendons, the suspensory ligament, and all the other ligaments of the affected limb, were clean and perfectly sound. Two indications only were present to guide to the exact seat of mischief, and which, to the common observer, would have passed unheeded, while an experienced eye would have discovered ample for his accurate diagnosis; viz., a small angular tumour jutting out from the inner ankle, about the seat of the common *cutting place*, or rather behind it, of the size only of a small hazel nut, solid to the feel as bone, and conspicuous to the sight; the other accompaniment being preternatural heat over the fetlock joint generally, with intensity of heat towards its inner front.

Dissection of the Limb.—Immediately on the removal of the common integuments, a small *node* presented itself, which proved to be *exostosis* of the external surface of the inner *sesamoid* bone.

Upon making an opening into the capsule of the joint, which forms a theca for the passage of the flexor tendon, there was observed to be a total absence of synovia, or fluid of any kind; but, although nothing remained to lubricate the parts, no adhesions had been formed.

Upon laying open the principal *sesamoidal* joint, which articulates with the metacarpal bone, a considerable portion of the articular surface was absent, this being lost either by attrition or absorption.

The disorganization was principally confined to the articular cartilage belonging to the *inner* sesamoid bone, which had the small exostosis attached to it, in conjunction with the corresponding articulating condyle of the metacarpal; this extremity of the bone being completely denuded of its cartilage.

Second Case.—A weight-carrying hunter of repute, slightly lame of his near fore leg. The projecting tumour in this instance was situated upon the *outer* ankle, and was more than double the size of that in the foregoing case, solid as bone, and situated exactly in the sesamoidal region, but surrounded by chronic ligamentous enlargement of the outside of the fetlock joint generally. The principal suspensory ligament and flexor tendons were in their normal condition.

Dissection proved it to be the fac-simile of a bone-spavin upon the external surface of the *outer* sesamoid bone: an excrescence of solid bone, which was surrounded with many layers of condensed cellular tissue and thickened ligaments, especially the outer branch of the suspensory, a portion of which was completely embedded in the osseous protuberance.

Upon exposing to view the extensive articular surfaces in contiguity with the diseased sesamoid bone, they were found quite *intact*, there being no abrasion of any portion of the synovial membrane; neither was it discoloured; so that the delicate structure of the *interior* of this complex joint appears to have escaped the invasion of disease, although morbid action must have prevailed in its very walls for a lengthened period.

Remarks upon the above Cases.—These cases have been seized upon with avidity, because each is a type of the most important division of the subject: viz., the one sesamoiditis *within* the joint, and the other sesamoiditis *external* to the joint.

An attempt at the elucidation of the several varieties of this concealed unsoundness is a task which I have set myself. It may appear strange, but it is not the less true, that its classification, or subdivision, will claim no inconsiderable space in all future dissertations upon veterinary pathological anatomy.

Through the kindness of the worthy Secretary of the Royal College of Veterinary Surgeons, the two morbid specimens above referred to may be seen at Red Lion Square by any member of the profession having such a desire.

(*To be continued.*)

CASE OF INTERNAL HEMORRHAGE.

By B. B. Aris, M.R.C.V.S., Wellingborough.

On the 18th of June, 1855, I was requested to see a black horse of the cart-breed, eight years old, at Mears Ashby, four miles distant. The animal had been sent that morning to draw a light load of grass about the distance of two miles, and when near home he was observed to breathe very short, and to become weak and unsteady in his movements; soon after which he began to purge, the fæces being mingled with blood.

I found him standing in the stable, with his head hanging down, the breathing heavy and laboured, with frequent sobbings, no pulse at the jaw, the heart beating quick, but feebly, the visible mucous membranes as white as the paper on which I am writing, and he was very weak and unsteady in his movements. My opinion, given at once, was that it was a case of internal hemorrhage of a passive character. I attempted to give the animal some medicine, but failed, from his being very bad tempered. I was therefore obliged to desist, and contented myself with placing him in a cool, darkened box, and ordered him to be kept very quiet, and left him for the night.

19th.—The symptoms are the same as yesterday. He has passed a good deal of blood with his fæces, but has not lain down, and refuses both food and drink.

20th.—Symptoms much the same as yesterday: fæces semifluid, and darker in colour, with which clots of blood are passed; the evacuations are very fetid; the animal is quite blind, the pupils much dilated, and the eyes amaurotic; the pulse quick, and very weak.

21st.—The animal looks somewhat better, will eat a little green clover, and drink linseed gruel; the pulse is still weak, and about 60. The stench from the fæces is now almost intolerable, arising from the blood becoming partially decomposed.

22d.—Appetite better; he has not passed so much blood

and the breathing is natural. From this time he gradually recovered.

I saw him on the 1st of October last; he was then very fat, but quite blind of both eyes from amaurosis. I would just add, that I tried injections of a stimulating kind to the eyes, with blisters applied to the cheeks, but without any permanent good.

Never having seen or read of a similar case I have thought it might prove not unworthy of a place in your very valuable Journal, and elicit the opinion of the profession as to the seat of the lesion. I confess I am at a loss to say whether the ciliac or anterior mesenteric arteries, or the vessels of the liver or the spleen, were the seat of the lesion.

ON THE STANDING AND EDUCATION OF THE VETERINARY SURGEON.

By W. G. Reeve, M.R.C.V.S.

"Ingenuas didicisse fideliter artes
Emollit mores, nec sinit esse feros."—Ovid.

To the Editors of the 'Veterinarian.'

Sirs, — As the *status* of the veterinary surgeon seems, some time since, to have engaged the attention of several of your correspondents, I have waited with much expectation for some further remarks respecting so engrossing a subject, and cannot but feel disappointed that a question so interesting and important should have received so little attention. In the absence, therefore, of a more able pen, I take the liberty of reviving the discussion, trusting that the sentiment contained in the above motto may be accepted as my apology.

Upon referring to the Journal, I find that a "sporting surgeon" has gratuitously insulted the profession by some rude, egotistical remarks, and subsequently, he has been well castigated for his pains. This he deserved, for however well he may have striven to hide the appendages, the ears too plainly passed through the skin he had donned to prevent the recognition of the quadruped. I would not have honoured him with notice, but that the very insignificance of the animal has, in a measure, made him serviceable.

He has suggested a disparity between the veterinary sur-

geon and the human practitioner, and this alone is sufficient to elicit the inquiry. Does the study of the veterinary profession, considered in a philosophical and scientific point of view, rank beneath that of the human? *i. e.*, is there necessarily anything in the pursuit of that profession which investigates the conformation and alleviates the diseases of the brute creation, which can render it inferior to that whose object is to investigate and alleviate the infirmities of man?

To arrive at the solution of this, let us contrast the one with the other. The human practitioner concentrates his studies upon the structure and diseases of *one* animal only—a being endowed with reason, language, and docility; who can describe his pains and feelings, relate his symptoms, and point unerringly to the precise spot affected; and, as man, in the scale of creation, stands higher than the horse or dog, and the life of the human being is more valued than that of the brute, so does the surgeon receive a greater meed of praise for his success, and is stimulated by the reward of higher honours.

The veterinary practitioner pursues the same inquiry under great and numerous disadvantages. His patients are dumb; they cannot say "my pain is here or there;" nor can they afford a voluntary help to his investigations. It is only by dint of close and repeated observation, by indications oftentimes obtained amidst the throes of the animal, that he forms his diagnosis; and yet, with all these disadvantages, does he do so less correctly than the human surgeon? Our ever recurring *post mortems* plainly answer in the negative. The veterinary surgeon comprises amongst his patients, animals the most different, in nature, habits, conformation, and use. Each one in itself, is in fact, a *separate* study. The diseases of one are widely different from those of another; and medicines the most active with the former, may become inert in the latter.

How different is the anatomy of the ruminant from that of the carnivora! Compare the elaborate stomachs of the one with the simple receptacle for food of the other. Contrast the hoof of the horse with the foot of the dog. Each wonderful in its mechanism, yet how strangely and beautifully varied in its construction, and the adaptation to its purpose. Their diseases, too, how opposite. What more dissimilar than glanders, canine madness, and pleuro-pneumonia? Whilst one patient obstinately stands during inflammation of the lungs, another will be recumbent and recline upon the sternum. In the dog, we have a patient whose *natural* remedy is vomition, whilst the horse has scarcely ever been

made to vomit at all. This breathes only through the nose, that principally through the mouth.

Again, the duty of the veterinary surgeon is by no means free from danger, owing to the temper, vice, or violence of his patient. His most important operations are performed amidst struggles and plunges, that would intimidate some human practitioners, and decidedly interfere with the nerve of others. Yet amidst all these difficulties, the veterinary surgeon performs his duty satisfactorily to his employer, and humanely to his patient. The human practitioner is thanked if his patient gains but a temporary amelioration; but the veterinary surgeon is expected to perform a perfect cure. It is not the life only, but the services of his patient that are required.

If, therefore, we have greater difficulties to contend with and overcome, a greater variety of animals to study, a more difficult master to please, and are expected to be perfect in all these duties, I contend, that in a scientific, a meritorious, and useful point of view, the veterinary profession, *per se*, is not unworthy to take its stand alongside that of the human; therefore its members are justified in contending for a recognition of its merits.

But, sirs, although it has been thus shown that the veterinary profession has a right to rank itself with the sister science, the fact, I think, is indisputable that, popularly at least, its *status* is somewhat lower than could be wished.

I will not at present stay to argue the point, but take it as an admitted fact, and simply inquire, why is it so? If, as we have seen, the veterinary profession is worthy to rank with the medical, why do its members not hold that position to which their profession entitles them?

In answering this question, I do not wish to offend the sensibilities of the humblest of my *confrères*, but am compelled to say the fault

> "———— is not in our stars,
> But in ourselves."

Further that the depreciation is attributable—

Firstly, to the superiority of the human practitioner in point of education; and—

Secondly, to the connection which exists between the veterinary surgeon and the blacksmith's forge.

The veterinary surgeon does not enter life with the stamp of education demanded by his calling; since no examination of an educational nature assures the public of his suitability to rank higher than an ordinary tradesman.

I believe it is a fundamental rule with every other profession to admit none to its practice who are not qualified by a liberal education to rank with gentlemen, and do honour to the profession they wish to enter; and their capacity, in this respect, is tested by rigid examinations in the classics, mathematics, history, belles lettres, &c. &c. Thus the public have some guarantee that they are fit to occupy the position to which they aspire, and therefore tacitly admit them to the standing which is due to genius. In fact, their *diploma is a passport* to society.

The divine, the lawyer, and the physician, are known to have passed this ordeal. They may be poor, but, being educated, they are universally admitted to the privileges of gentlemen.

But no educational examination ushers the veterinary surgeon into the world, as a man fit to rank above the artizan, or to take a higher position in society than him. He *may* be an educated man; but as things are at present constituted, this is much more likely to be the exception than the rule. Should he prove himself to be this "rara avis," the public give him the full benefit of the remaining portion of the sentence, and look upon him as—

"Nigroque simillima cygno."

That there are many clever, well educated gentlemen in the veterinary profession, the pages of the *Veterinarian* and the literature of the day amply testify; but that all who are candidates for its diploma are duly qualified by education for the position to which they aspire, is I think more than problematical. At present there is no proof given or required, that the individual who presents himself for his diploma can write even ten consecutive lines of correct English. The only educational test in operation is that each student, when he enters the Royal Veterinary College, should be able to write his name in the office-book, and this, more as a proof of his daily attendance than anything else. How then can the public be expected to concede to him the standing of a gentleman, seeing they have no higher proof than this? It is possible for a man to enter the college, as a pupil, to go in, as it were, at one end of the mill uneducated, to be ground for two sessions, then to make his *début* as a veterinary surgeon, and, whatever may have been his previous occupation, he thinks himself a gentleman, and expects to be acknowledged as such! Can anything be more preposterous?

Truly, a man may possess natural talent, although no

scholar, but it is education which refines, dignifies, elevates, and ennobles him; from it he imbibes sentiments of liberality and honour; his habits become established, and his taste refined; and whilst he strives to emulate the noble and the good, he acquires no less an abhorrence of that which is vulgar and ignoble.

It is the acknowledgment of this principle, that gives to the educated man a standing in society, and raises him to the social position of a gentleman. Therefore, in my opinion, what is wanting to give *éclat* to the veterinary profession is an EDUCATIONAL EXAMINATION. Let it only be publicly known, that no person can be admitted as a member of the Royal College of Veterinary Surgeons unless he has received a liberal education, and we shall have little to complain of respecting our "status."

What! I would ask, has our profession degenerated? Are we making no progress with the present march of intellect? Are we less required than formerly, that we should not demand of our young men an effort to keep pace with the advance of other sciences? Look at the facts. How often is the veterinary surgeon called upon to give evidence in important cases—to examine animals worth hundreds of pounds —to decide at a race, where thousands are at stake? Has not the value of horses almost doubly increased, and the demand for scientific knowledge in improving the breeds become a subject of national importance? Are not the army appointments daily calling the intelligent young veterinarian to duties that at once give him the position of "an officer and a gentleman;" and, to crown all, has not royalty condescended to sit at our convivial board, and wish success to our progress? What further incentives could we require? Is there a more honorable or profitable career? And shall it be said, we are still without education?

I am sure, sirs, the question only requires to be asked to receive an unequivocal reply. I do not say nothing has been done; but I think much yet remains to be accomplished.

It may be contended that by instituting an educational examination, we should exclude many deserving men from pursuing a calling congenial to their habits, tastes, and inclinations; but this is far from my meaning. By all means let the temple of knowledge be open. The intelligent groom or farrier might attend the lectures of the college, and go forth with his certificate of such attendance; but before admitting any persons to present themselves for their diploma, they should be required to undergo an educational examination to an extent commensurate with the dignity of the profession

they are about to enter. What the amount of education required would be, must rest with the profession, or rather with those to whom the authority would be delegated. Thus, the veterinary schools or colleges would be open to all, but the Royal College of Veterinary Surgeons closed to the illiterate. It would soon be publicly known, that each member entitled to sign himself a M.R.C.V.S. was an educated man; the diploma of the body corporate would be a passport to good society, and the term veterinary surgeon would be synonymous with that of gentleman.

Fearful of trespassing too far upon your valuable space, I am compelled to stop. Should these few observations, however, be favorably received, I will do myself the honour, in the succeeding number of your Journal, of addressing to you a few words upon the second drawback to the profession, viz., its connection with the shoeing forge.

I have the honour to subscribe myself, sirs,

Your obedient servant.

Stirling Terrace, Camberwell.

REMOVAL OF A LARGE MALIGNANT TUMOUR FROM THE NECK OF A HORSE.

By R. P. Foster, Spalding.

In May last I was consulted respecting an enlargement upon a mare's neck, which had been forming for four years, but of late it had become so large that the collar could not be got off and on. When I saw her, I found she was one of my old patients, which I had treated several times before for the same malady, but without success. This was before she was in the present owner's possession. When I was first called to her, I wanted to dissect the tumour out, as it was then only about the size of a swan's egg. To this, however, the owner would not consent. The treatment I then adopted consisted of setons, blisters, and the application of preparations of iodine; all which were tried without effect; and since then it has continued to enlarge, until now it is as big as a large pumpkin. Upon examining it, I gave the owner but little hope of cure, as it was, as I thought, situated in a very dangerous place, namely, on the front of the trachea; and it extended, from the throat down as far as where the collar rests, and up both sides of the neck, under, and misplacing both

jugular veins. I therefore thought it most likely that an operation would be attended with much danger; but, notwithstanding my opinion, he was determined to have it done. On the 21st of June, therefore, I had the mare cast, and being kindly assisted by Mr. Sharman, M.R.C.V.S., I dissected out no less than 7 lbs. of the tumour. The hemorrhage was very great, and the mass, when cut into, was found to be of a scirrhous nature, without sensibility, but supplied with numerous blood-vessels; and about the centre was a small abscess, containing a little greyish matter. I stopped the bleeding, and left her almost to nature for the next and two or three following days, as I thought all was going on well, merely dressing the parts with mild caustics, and anticipated a speedy termination to the case. The remaining portion of the tumour protruded itself much below the surrounding muscles, from which it was easily separated, and I could get my hand quite round it, as deep as its roots, and I thought I should be able to pluck it out by the roots, but determined not to do so for two or three more days. But in this time it had got so large that I found my hopes of plucking it out were at an end. I therefore excised it again, taking off 4½ lbs. more of it as the mare stood; for I might here observe, that I did not cast her any more, she standing well to have it either dressed or cut. Much bleeding took place from several arteries, and mostly from the larger one, to which I applied the cautery. The substance being of a tough and elastic nature, I soon succeeded in plugging them up. In three days more the tumour was again as large as ever. I now cut off 4 lb. more, and to the bleeding vessels applied the cautery, as before. I now began to think that something else must be done. I therefore determined on trying to destroy the organized mass. To effect this, I made incisions with a scapel, transversely round the tumour, and as near to its base as possible, which now covered a space as large round as half a peck measure; these I filled with cut tow, on which was sprinkled arsenious acid. This I repeated three times, introducing half an ounce of the acid each time, but less and less quantities afterwards, as I thought the case required. I soon found that its structure was destroyed, and when cut into it had a dark grey aspect. No bleeding took place, but instead, a watery fluid exuded; and I dissected out at different times 20 lb. of the disorganized mass. About this time the animal showed symptoms of the acid having entered the system, as she was a little off her feed. A few days after, as I was cutting away some of the dead parts from between the left side of the trachea and jugular vein, I accidentally divided a

large branch of the common carotid, from which there was considerable hemorrhage, and not being able to get at it to take it up, it set at defiance all other means of arresting the escape of blood for a long time, when the mare became very weak. This was very much against me, for I found afterwards that the acid entered the system much more than it had done before; I therefore did not apply any more of it, but attended to the system, by giving two or three doses of linseed oil, and the usual antidotes to the poison; and now she is looking well, and the wound has nearly healed. I might be permitted to state, that the trachea had been bared by the operation more than half way round, and to the extent of a foot in length; and several of its rings in the front having sloughed away, the tube has consequently been open more than a month, but it is now nearly closed. The portions I send you for examination are parts of the whole that have been taken off; the softest portion coming directly from the front of the trachea, and near to the chest.

I am, sirs,
Yours respectfully.

[A microscopical examination of the portions of the tumour sent showed it to be of a cancerous nature. The cells making up the great bulk differed in no important particular from those of similar morbid growths.]

ELECTRICITY SUCCESSFULLY RESORTED TO IN A CASE OF PUERPERAL FEVER.

By J. Holden, Burley.

Gentlemen,—Should you consider the following cursory remarks suitable to the pages of your interesting and instructive Journal, I shall feel pleased by their insertion, as illustrative of the old motto "*nil desperandum.*"

Some time ago I was consulted in a case of puerperal fever. The patient was a young beast of great value, and high pedigree, and in first-rate condition. From the first impression made upon my mind, the case presented unfavorable omens. I was alarmed by the rapid progress of the disease, and the many unfavorable symptoms that hourly presented themselves. The bowels were incorrigibly torpid, the breathing laborious, the extremities cold, the head protruding, the

pulse feeble, the muzzle dry, and the eyes sunken. I threw up injections, by means of Read's enema syringe, and exhibited the usual aperients, combined with aromatics, repeatedly, but all failed to produce an action of the bowels. I was almost induced to give up the case as hopeless, when an intelligent friend suggested the passing of the electric fluid through the brain and along the spinal column. Scarcely had the first charge, of a quart Leyden-jar, been transmitted in that direction, by means of the discharger, than several ineffectual attempts were made by the patient to regain the standing position: a wild stare succeeded to perfect coma; gentle diaphoresis took place; the pulse became greatly accelerated, and its volume increased; and to my utter astonishment, after a second application of the same agent, an immense quantity of fæcal matter was voided; the bladder, also, was perfectly emptied, and the symptoms were evidently more favorable. The subsequent treatment consisted of febrifuge medicines, with diffusible stimulants, and vegetable tonics; in three days (five from the commencement of the attack) the beast had regained the use of the extremities, and was progressing favorably towards recovery.

P.S.—At some future opportunity I shall call attention to the use of the trocar in this insidious and fatal malady.

Yours truly.

[This is the first time, so far as we are aware, that electricity has been employed as a remedial measure in this fatal disease, although a trial of it has often been suggested in the lecture-room.]

ON CANNABIS INDICA.

By F. G. C. Shaw, Student R.V.C.

Dear Sirs,—I have observed with pleasure the successful treatment of tetanus with the *cannabis indica*, by Mr. Fulton, and I hope that the publication of his case will be the means of giving the drug a still further trial. Perhaps the following may not be out of place here, which fell under my notice when I was residing at Mussoorir, a sanitorium on the HimalayaMountains. An old goat belonging to some native servants was attacked with paralysis, which deprived her of the use of one of her fore-limbs. A consultation was held among them

as to what would be the best to do with her, and they at length, with one accord, came to the decision that she was "Bhōōt Luggā," *i. e.* possessed of a devil; a very common conclusion they are apt to arrive at in such cases as have a mysterious origin. To drive the devil out of the poor animal they singed her nose, and beat her with sticks; but finding the devil would not so easily be driven out, they left her for the night. I inquired the next morning if his satanic majesty had departed, and was replied to in the negative, but that they had adopted another mode to effect their purpose, namely, the application of a poultice made from the bruised leaves of the *cannabis indica*, in the green state. This, I was told by them, would surely have a beneficial effect; however, after the lapse of a few days, during which time the goat did not seem to improve, they followed my advice, and destroyed her. I mention this fact merely to show that the medicinal properties of the drug are known to the natives of India.

The way in which I have seen the natives procure the "churrus," is by first crushing the green leaf in the hands, and then rubbing them together, till the waxy-like substance forms into thin long rolls, like pins and needles, on the palms of the hands. This they are very fond of inhaling through the "hookah," and it produces a pleasant exciting effect. I have inhaled it myself, but not to such an extent as to produce catalepsy, which state the natives frequently bring about. I have recently sent to India for some of the churrus, and if you wish I will with pleasure give you some when it arrives.

Believe me, yours obediently.

ON THE MODE OF PREPARING THE WOORARA POISON.

To the Editors of 'The Veterinarian.'

Messrs. Editors,—Seeing in one of your later numbers an account of the source and physiological action of the Woorara poison, I have thought the following description of its preparation by the Indians, extracted from "Waterton's Wanderings in South America," might prove interesting to some of your readers.

It is now some years since, that several experiments were instituted with this poisonous agent at, I believe, the Nottingham Infirmary, which were published in the medical

journals of the day; and although it has been tried on the horse as a therapeutic, I am not aware that its action can be relied upon. Probably this arises from the state in which it is obtained from the native Indians, who can ill afford to part with this, to them, indispensable agent.

Should the present communication be admissible to your pages, I may, in a succeeding number, venture to record some experiments performed on animals by Waterton. I am respectfully yours, "AMATEUR."

"Wishful to obtain the best information concerning this poison, and as repeated inquiries, in lieu of dissipating the surrounding shade, did but tend more and more to darken the little light that existed; I determined to penetrate into the country where the poisonous ingredients grow, where this pernicious composition is prepared, and where it is constantly used. Success attended the adventure; and the information acquired made amends for one hundred and twenty days passed in the solitudes of Guiana, and afforded a balm to the wounds and bruises which every traveller must expect to receive who wanders through a thorny and obstructed path.

"Thou must not, courteous reader, expect a dissertation on the manner in which the wourali poison operates on the system; a treatise has been already written on the subject, and after all, there is probably still reason to doubt. It is supposed to affect the nervous system, and thus destroy the vital functions; it is also said to be perfectly harmless, provided it does not touch the blood. However, this is certain, when a sufficient quantity of it enters the blood, death is the inevitable consequence; but there is no alteration in the colour of the blood, and both the blood and flesh may be eaten with safety.

"All that thou wilt find here is a concise, unadorned account of the wourali poison. It may be of service to thee some time or other, shouldst thou ever travel through the wilds where it is used. Neither attribute to cruelty, nor to a want of feeling for the sufferings of the inferior animals, the ensuing experiments. The larger animals were destroyed in order to have proof positive of the strength of a poison which hath hitherto been doubted; and the smaller ones were killed with the hope of substantiating that which has commonly been supposed to be an antidote.

"It makes a pitying heart ache to see a poor creature in distress and pain; and too often has the compassionate traveller occasion to heave a sigh as he journeys on. However,

here, though the kind-hearted will be sorry to read of an unoffending animal doomed to death, in order to satisfy a doubt, still it will be a relief to know that the victim was not tortured. The wourali poison destroys life's action so gently, that the victim appears to be in no pain whatever; and probably, were the truth known, it feels none, saving the momentary smart at the time the arrow enters.

"A day or two before the Macoushi Indian prepares his poison, he goes into the forest, in quest of the ingredients. A vine grows in these wilds, which is called wourali. It is from this that the poison takes its name, and it is the principal ingredient. When he has procured enough of this, he digs up a root of a very bitter taste, ties them together, and then looks about for two kinds of bulbous plants, which contain a green and glutinous juice. He fills a little quake, which he carries on his back, with the stalks of these; and lastly, ranges up and down till he finds two species of ants. One of them is very large and black, and so venomous, that its sting produces a fever; it is most commonly to be met with on the ground. The other is a little red ant, which stings like a nettle, and generally has its nest under the leaf of a shrub. After obtaining these, he has no more need to range the forest.

"A quantity of the strongest Indian pepper is used; but this he has already planted round his hut. The pounded fangs of the Labarri snake, and those of the Counacouchi, are likewise added. These he commonly has in store; for when he kills a snake, he generally extracts the fangs, and keeps them by him.

"Having thus found the necessary ingredients, he scrapes the wourali vine and bitter root into thin shavings, and puts them into a kind of colander made of leaves: this he holds over an earthen pot, and pours water on the shavings: the liquor which comes through has the appearance of coffee. When a sufficient quantity has been procured, the shavings are thrown aside. He then bruises the bulbous stalks, and squeezes a proportionate quantity of their juice through his hands into the pot. Lastly, the snakes' fangs, ants, and pepper are bruised, and thrown into it. It is then placed on a slow fire, and as it boils, more of the juice of the wourali is added, according as it may be found necessary, and the scum is taken off with a leaf: it remains on the fire till reduced to a thick syrup of a deep brown colour. As soon as it has arrived at this state, a few arrows are poisoned with it, to try its strength. If it answer the expectations, it is poured out into a calabash, or little pot of Indian manufacture, which is

carefully covered with a couple of leaves, and over them a piece of deer's skin, tied round with a cord. They keep it in the most dry part of the hut; and from time to time suspend it over the fire, to counteract the effects of dampness.

"The act of preparing this poison is not considered as a common one: the savage may shape his bow, fasten the barb on the point of his arrow, and make his other implements of destruction, either lying in his hammock, or in the midst of his family; but, if he has to prepare the wourali poison, many precautions are supposed to be necessary.

"The women and young girls are not allowed to be present, lest the Yabahou, or evil spirit, should do them harm. The shed under which it has been boiled, is pronounced polluted, and abandoned ever after. He who makes the poison must eat nothing that morning, and must continue fasting as long as the operation lasts. The pot in which it is boiled must be a new one, and must never have held anything before, otherwise the poison would be deficient in strength: add to this, that the operator must take particular care not to expose himself to the vapour which arises from it while on the fire.

"Though this and other precautions are taken, such as frequently washing the face and hands, still the Indians think that it affects the health; and the operator either is, or, what is more probable, supposes himself to be, sick for some days after.

"Thus it appears that the making the wourali poison is considered as a gloomy and mysterious operation; and it would seem that they imagine it affects others as well as him who boils it; for an Indian agreed one evening to make some for me, but the next morning he declined having anything to do with it, alleging that his wife was with child!"

CONTEMPORARY PROGRESS OF VETERINARY SCIENCE AND ART.

By John Gamgee, M.R.C.V.S.

(*Continued from p.* 578.)

Absence of Cerebellum in a living Calf.—A living male calf, two days old, was sent to Professor Hering by Rebmann, a veterinarian, on the 6th of November, 1854. It had on its head a round bag of normal hairy skin, appearing like a hood, and measuring eighteen inches in circumference. It evidently contained water, and floating solid matter, and its interior was thought most probably to com-

municate with the cranial cavity, and in fact that it was a case of congenital hydrocephalus.

The animal was unable to stand, though its limbs were well formed; lying down, it chiefly held its head somewhat reclining backwards, and the hairy bag above hung a little sideways. It would drink milk out of a tub, provided a finger was placed in its mouth as is usual in teaching these animals to drink. Either in this way, or by drenching, 4 lb. of fresh milk were consumed daily, and the animal lived on. On the 11th of November, Hering discharged the contents of the head with a small trochar, and obtained 15 ounces of dull-reddish serum, producing no change whatever in the general state.

On the 13th of November, cramps appeared, nourishment was refused, and the calf was therefore killed by bleeding. It was found that the viscera of the abdomen and chest were healthy; the tumour on the head consisted of skin covered with thick and woolly hair, and within was a considerable layer of loose, spongy, cellular tissue; it had a fibrous lining, partly smooth, and in part beset by irregular granulations. The sack contained 3¾ ounces and of dull serum, as was obtained by operation, and in it shreds of organized lymph were floating. Situated a little on the mesian line of the forehead, was an aperture admitting the little finger, which was readily passed into the cranial cavity. The aperture on the dried head measured nine lines in diameter, and through it there was a communication between the external sac and the cavity of the brain.

On opening the cranial cavity the thickened pia mater which passed through the aperture is traced to the fourth ventricle, and where the cerebellum should have existed were found prolongations of this membrane. The cerebellum itself was entirely absent, as well as its middle and posterior crura. The cerebrum was normally developed, as also all parts at the base, the origins of the nerves, &c. The pons varolii is faintly delineated, though perceptible at the juncture of the sixth pair. The crura cerebri were larger than natural. The whole brain weighed about three ounces.

The question presented itself, whether the cerebellum had ever existed, or whether it had begun to be developed, and then disappeared? Hering thinks evidence is in favour of the latter. Dropsy of the brain, occurring at an early state, as is proved by the round aperture in the skull having a thick margin, and the thickened state of the dura mater contributing to form the outer sack, a prolapsus of the cerebellum probably ensued, which, as the skull closed, became detached and wasted.

A similar specimen exists in the Stuttgart Museum; it occurred in a lamb, which Hering observed alive for several days; the cerebellum was lying in a small bag on the occiput, only covered by the membranes of the brain.

The tissues or shreds discoverable in the sack, of the case Hering has recently observed, were doubtless the remains of the vascular network. The dura mater thickened, because covered with granulations where the cranial cavity had given way, and the cerebellum separated thus from the other parts of the brain, was absorbed. This is seen in those monsters with absence of the spinal canal and cord, in which the nerves exist from their very origin.

When monsters are deprived of a portion of brain, they are generally the cerebral hemispheres which are found wanting, the optic thalami and corpora quadrigemina remaining intact. In some monstrosities, it is true, only the medulla oblongata has been found; but in these cases the monsters died immediately after birth.

According to the experiments of Magendie, Flourens, Hertwig, Longet, Krauss, and others, the superficial parts of the cerebellum can be removed without proving fatal to animals; they display weakness and insecurity in their movements, and, when the cerebellum is entirely extirpated, death is not necessarily its sequel. Sucking animals outlived the experiments several hours, and birds several days. This is clearly explained by the cerebellum guiding the performance of certain movements not absolutely necessary for the preservation of the individual; the action of the respiratory and circulatory organs depending on the spinal chord, and when this is injured, death must necessarily ensue.

The preceding observations demonstrate that an animal may live without cerebellum; it confirms the opinions of physiologists, that the cerebellum rules the movements of animal life, destined for special purposes, as walking, standing, or grasping; the above-mentioned calf could move all its limbs, but could not co-ordinate those movements requisite for standing, walking, &c.—*Repertor. der Thierheil, April*, 1855.

The above case, so thoroughly studied by the learned Hering, is sufficient to excite a love for teratological investigations. It is replete with facts for consideration, especially in these times, when the physiology of the nervous system attracts so much attention, and that even Sir Charles Bell's and Longet's views of the excito-motory system have been impugned. I shall shortly consider the whole subject in reviewing a 'Memoir' by Brown-Sequard, recently read before the Academy of Sciences of Paris.

16, Upper Woburn Place.

Facts and Observations.

ON THE USE OF GENTIAN IN COMBINATION WITH ALOES, AND THE FROG-SETON IN LAMINITIS.

By T. Hurford, M.R.C.V.S., V.S. 12th Lancers.

Mr. Hurford, writing from Balaklava, informs us that it was the European Gentian and not the Chiraita, he used combined with Aloes, as a purge, when in India; and that from it, he invariably derived all that he has stated. Mr. J. Thacker, M.R.C.V.S., and V.S. H.E.I.C. Service, in a note received by us from Madras, says that he also has found the combination of Gentian with Aloes materially increase the action of the last-named drug; so that we were in error in supposing it was the Chiraita.

Mr. Hurford adds, "for a long time past I have employed frog-setons in laminitis. As soon as the horse is attacked, I have him cast, insert setons, give a full dose of physic, and have no fear of the result."

TORMENTILLA AS AN ASTRINGENT.

"The decoction of Tormentilla, a remedy in not very general use, is, we observe, a great favorite with Mr. Hilton, of Guy's Hospital. It is employed in cases of piles, passive hemorrhages, diarrhœa, &c., as a tonic and astringent. A few weeks ago, Mr. Hilton ordered it (in doses of an ounce and a half every three hours) to a patient in whom hemorrhage from the bowel had occurred four days after an operation for hernia; and took the opportunity of observing to his class that it was one of the most efficient vegetable astringents that he knew."—*Medical Times and Gazette.*

[The Tormentilla, common Tormentil or Septfoil, belongs to the genus *Potentilla*, of which two kinds appear to be employed medicinally, and are often confounded, the *P. reptans* and *P. tormentilla.*

The plant is indigenous, and common in pastures and on heaths. The root is officinal. Its action that of an astringent, and considered by some writers, one of the best of this

class of medicines, as it acts without causing any excitement. It is reported as being very efficacious in the dysentery of cattle. Its composition, as given by Neumann and Pfaff, is—

Tannin	17·4
Volatile Oil	a trace
Colouring Matter	18·05
Ditto altered	2·57
Resin	0·42
Cerine and Myricine	0·73
Gummy Extractive	4·32
Gum	28·20
Extractive Matter	7·70
Woody Fibre	15·0
Water	6·45
	100·84 (excess 84.)

Professor Burnett, respecting these plants, says—

"Potentilla is a large genus of very ornamental plants, some of which were once supposed to afford very potential medicines, and hence the generic name. None of them are deleterious, but they are not possessed of any very active properties. They are more or less astringent and bitter; and the root of *Potentilla reptans*, which appears to have been the officinal plant of the ancients, is still reputed a febrifuge, although in far less esteem than before other more potent drugs were known. Economical advantage has also been taken of the astringency of these plants, and they have been employed in the process of tanning.

"The leaves of *P. anserina* form a favorite food with geese; and they are occasionally used as potherbs. Its roots also are relished both by hogs and men; they have something the flavour of a parsnip, but are small. They are nevertheless frequently eaten by the common people in Scotland, both roasted and boiled. In the islands of Tiray and Col they answer in some measure the purposes of bread, and they have been known to support the inhabitants for months together, during a scarcity of provisions.

"The leaves of *P. fruticosa* and *rupestris* are employed in Siberia as a substitute for tea.

"*Potentilla fragariastum*, once considered a species of Fragaria, shows the close affinity of this genus with the last; and *Tormentilla*, often still blended with it, has scarcely any constant differential characters, flowers with 4 and 5 petals being occasionally on the same plant. The *Tormentils* are much more astringent than the *Potentillæ;* and, from their moderating the discharges and relieving the *tormina* in dysentery, they have received their generic name. *T. officinalis* is still retained in our lists of medicines, and is a valuable remedy for diarrhœa. The rootstakes are so very astringent that they are used in the Hebrides and Orkneys to tan leather, for which purpose they are said to be superior even to oak-bark; 1lb. being equal to 7lb. of ordinary tan, according to a report published in the 'Transactions of the Natural History Society of Berlin.' In Lapland the the roots are used for dying skins of a red colour. Mr. Young informs us that swine are fed on them in Killarney; and they are also thought to be serviceable in some of the diseases to which sheep are subject."]

NITRIC ACID AND SULPHUR AS AN ESCHAROTIC.

"Mr. Cock has recently been employing in some cases under his care in Guy's Hospital, as an escharotic, a compound of Nitric Acid and Sulphur. A paste is made by mixing the strongest nitric acid with sublimated sulphur, until of a proper consistence. This paste is applied to the diseased surface, the surrounding parts having been protected by plaster, as when chloride of zinc is used. The mixture does not run about. It appears to give less pain than the nitric acid alone, and acts longer, producing more of eschar. In one case Mr. Cock employed it to remove a prominent mass of granulations in fungous testis, and it succeeded well. A cure, however, did not result, as a subsequent attack of inflammation aggravated the condition. We understood Mr. Cock that the formula had been suggested to him by Sir Benjamin C. Brodie."—*Medical Times and Gazette.*

Some years since, we were made acquainted with a recipe, so-called, for the removal of warts from the horse, which consisted of Sulphuric Acid made into a paste with Sulphur, and applied around the base of the excrescence. Its action has been said to be most decided and effective. For some time a pretender sold the formula to the profession, but Mr. Woodger having purchased it, at once made it known to us.]

ON ALUMINIUM.

It has been poetically said, that

"The ground we tread on once had life."

For a knowledge of this, we are indebted to the microscope, which, in the hands of Ehrenberg especially, has shown that the chalk formation, which in this country alone is many hundred feet thick, and many miles in extent, is made up of the skeleton shells of myriads of millions of extremely minute animals, as many as ten millions of them lying within the space of a cubic inch.

The same professor has also demonstrated, that the polishing slate—the Tripoli stone—is constituted of an aggregation of fossilized infusoria, much smaller than the chalk animalcule. A cubic line will contain twenty-three millions of these creatures, and a cubic inch has been designated as the cenotaph of forty thousand millions of them! The iron-clay stone, and the lime-stone formations, are stated to have a similar origin. A kind of silicious marl is met with in

Tuscany, called "mountain meal" from its appearance; and a similar earth is found in Lapland, which is mixed with ground bark of trees, and eaten by the natives in times of scarcity. Here, again, the microscope, in the hands of Ehrenberg, has demonstrated this to consist of skeletons of infusoriæ; and so excessively minute are their forms, that a cubic inch is estimated to contain forty-one thousand millions of them, and these weigh only 220 grains, so that each single skeleton weighs about the 187 millionth of a grain. Yet they actually constitute beds several feet in thickness, extending over areas of many acres. How stupendously sublime are these illustrations of creative power!

In 1849 Ehrenberg was requested to examine some red spots found on potatoes, bread, &c., which were conjectured to be a species of fungi, but on examination he found them to be exceedingly minute monads, which he has termed the "purple monad," or *monas prodigiosa*. The body of the animal is but from the $\frac{1}{3000}$th to the $\frac{1}{8000}$th part of a line ($\frac{1}{12}$th of an inch,) in length, and it has a proboscis half as long as its body.

In a cubic inch from 46 trillions, 656 billions, to 884 trillions, 736 billions, of these minute animals may exist! Surely if greatness has its sublimity, so has littleness!

But the microscope is not alone in developing these wonders. Chemistry comes in for her share in the investigation of nature's works; and the leading inquiry at the present day is, how *cheaply* to obtain from the aluminous clays a metal that shall rival and supersede the use of silver. Nor is it at all improbable that this will soon be obtained.

The splendid discovery of Sir H. Davy, in 1807, of potassium, the metallic base of the alcali potassa, followed in the succeeding year by that of sodium, the base of soda, opened up new views of the constitution of both the alkalies and the earths, which before this time were ranked among the simple substances, although doubts were entertained of their being so.

It was by the aid of the powerful voltaic battery of the Royal Institution, arranged in accordance with his own wishes, that Sir Humphrey succeeded in effecting the decomposition of these bodies. Hydrate of potassa was submitted by him to the influence of voltaic electricity, thus generated, when the metal was slowly evolved along with hydrogen at the negative electrode.

In the notes of a manuscript lecture, recorded by his brother, in his life, Sir Humphrey thus modestly expresses himself: "In my first trials on potash I used strong aqueous solutions: dry potash is a non-conductor. I then employed *fused potash;* and in this instance inflammable matter was

developed. Then a piece of potash moistened; and to my great surprise, I found *metallic* matter formed.

"*October 6th.*—This matter instantly burnt when it touched water—swam on its surface, reproducing potash.

"In dry oxygen gas, likewise, it burnt into perfectly dry potash."

It is stated, that when he saw the minute globules of potassium burst through the crust of potash, and take fire as they entered the atmosphere, he could not contain his joy; he actually danced about the room in ecstatic delight, and some little time was required for him to compose himself sufficiently to continue the experiment.

The earths had been suspected by the elder chemists, particularly by Boyle, Becher, and Stahl, to be capable of conversion into metallic substances, although they had vainly sought for modes of effecting this important desideratum. The discovery of potassium, however, sometimes aided by a modified application of the galvanic force, soon completely established the truthfulness of their conjectures.

Among the metallic bases of the earths we find *aluminum*, or *alumium*, or, as it is now called, aluminium. The earth *alumina* is a substance of common occurrence in the mineral world, and of great importance to the arts. According to Brande, its nature was ascertained by Sir H. Davy, in 1808, who found that potassa was generated by passing the vapour of potassium over white-hot alumina: he did not, however, determine the properties of its base. This has since been more accurately effected by Wöhler. His plan consists in heating the chloride of aluminum, by means of a spirit lamp, with pure potassium, in a small platinum or porcelain crucible. When the crucible is cold, its contents are well washed with cold water, when a finely-divided gray substance, having a degree of metallic lustre, is obtained, which is *aluminum*. Of this new metal, so called, the following glowing description a short time since appeared in the scientific journals:

"A New Metal.—A very remarkable discovery was announced to the Academy of Sciences, by M. Dumas, at its last sitting. He stated that M. Saint Clair Deville had succeeded in obtaining from clay a metal as white and brilliant as silver, as malleable as gold, and as light as glass; it is fusible at a moderate temperature. Air and damp do not affect this metal, which is called aluminium; it retains its brilliancy, and is not affected by nitric, sulphuric, or hydrosulphuric acid, either strong or diluted, if the temperature be not raised. It is only dissolved by very hot chlorhydric acid. Several specimens of this metal were exhibited to the Academy,

and on the proposition of Baron Thenard, it was voted unanimously, that a sufficient sum should be placed at the disposal of M. Sainte-Claire Deville, to enable him to make experiments on a large scale."

It would appear that the method resorted to by M. Deville differs not in *principle* from that devised by Wöhler, sodium only being substituted by him for potassium; but for the obtainment of this metal (sodium), it seems, he has discovered some more facile and cheaper method, although Dr. Gregory speaking of it says, "From the extreme cheapness of carbonate of soda, and the productiveness of the operation, sodium can be prepared far cheaper than potassium, and may, in most cases, be substituted for that metal, as its affinities are almost equally powerful. Should this metal ever be required on the large scale, it might be obtained for a price little, if at all, higher than that of zinc."

We are informed that the Emperor of the French has given 100,000 francs for the purpose of founding a new laboratory, to be placed under the direction of M. Sainte-Claire Deville, for the purpose of making researches and analyses in mineral chemistry; and more especially with a view to "the facile procuration of the metal aluminium," of which it is intended to form cuirasses and other military armour. In the present Exhibition at Paris, are spoons, forks, tankards, and other vessels of domestic use made of it; likewise a watch, which is said to keep time "very satisfactorily." A bar of this interesting metal, several ounces in weight, is now being exhibited at the Polytechnic Institution, London.

MINERAL WEALTH OF GREAT BRITAIN.

Our mineral wealth, for so small an island as Great Britain, is immense. Professor Hunt estimates the raw material in 1854 as being worth above twenty-four millions of pounds sterling; and were this worked, of course its value would be swelled a hundred fold.

Coal, at the pit's mouth	£11,000,000
Iron	10,000,000
Copper	1,500,000
Lead	1,000,000
Tin	400,000
Silver	210,000
Zinc	10,000
Salt, Clays, &c.	500,000
	£24,620,000

Extracts from British and Foreign Journals.

MANUFACTURE OF ALUMINIUM.

By M. H. Sainte-Claire Deville.

I have the honour of presenting to the Academy the first samples of aluminium, which I have made at the expense of the Emperor, in the manufactory of chemical products of the Société Générale of Javel, by a process which I shall make known in detail hereafter, but which I shall mention summarily in this note.

The industrial preparation of the materials which I employed for producing aluminium, that is to say, chloride of aluminium and sodium, appear to me to be a solved problem, with the exception of the improvements which the study of every question of large manufacture will necessarily lead to by the daily employment of the apparatus.

The chloride of aluminium is obtained by making chlorine react on a mixture of aluminium and coal tar previously calcined. The operation is effected in a gas retort with remarkable facility and perfection. It results, from my observations, that the action of chlorine is complete on a layer of one or two decimetres at most of the mixture, so that the absorption of the gas is always total. The condensation of the chloride of aluminium is operated in a chamber of brickwork lined with delft. As may be judged from the specimen which I submit to the examination of the Academy, it is a compact matter of sulphur-yellow crystals. This chloride contains very little iron; it is purified entirely in its treatment for aluminium, because its vapour is passed over points of iron heated to about 400° C. (752° F.). The sesquichloride of iron, which is as volatile as the chloride of aluminium, is converted, by contact with the iron, into protochloride, and becomes comparatively very fixed. The vapour of chloride of aluminium issues from the apparatus, giving colourless and transparent crystals.

The sodium is now prepared, in large and small vessels, with great facility. I have most carefully studied the influence of the temperature, of surfaces of heating, and of the force of the vapour of sodium issuing from my apparatus, and I am convinced that we may, by properly regulating the relation between the heating surface and section of the tubes

which give issue to the sodium, produce this metal at a low temperature, perhaps near to the fusing point of silver. At present our cylinders are heated much less than the vessels which are employed in the manufacture of zinc. I am, at this moment, occupying myself with the production of sodium in continuous apparatus.

I have entirely suppressed the distillation of sodium, which is now obtained pure from the first jet.

As regards the reaction of chloride of aluminium on sodium, it is performed also in metallic tubes, whose form and management are not very industrial. In this last operation, my yield still leaves something to be desired; but I think that these difficulties, which can be solved only by experiments, the plan of which is already devised, will not long impede my progress. I shall soon, I hope, have the honour of submitting them to the Academy.

The specimens mentioned in this note were submitted by the Academy of Sciences to a Committee composed of MM. Elie de Beaumont, Dufrénoy, Babinet, and De Senarmont.

M. Dumas, in presenting the note and the specimens (large and beautiful masses of chloride of aluminium, and metallic sodium, and aluminium in bars), on the part of M. H. Sainte-Claire Deville, made the following observations:

The manufacture of chloride of aluminium having already been carried to the extent of between 200 and 300 kilogrammes, we may be satisfied that it has become susceptible of a completely industrial progress.

That of sodium, so happily transformed by M. Deville, furnishes this metal with surprising regularity and facility. As both the chloride of aluminium and the sodium are pure, the aluminium which they furnish is equally so.

The materials for making one kilogramme of aluminium, that is to say, ammonia-alum, the alumina which results from it, the chlorine, the charcoal, the carbonate of soda, and the chalk, are all very cheap; it would not appear surprising that their total is already reduced to 32 francs at most (about 13 shillings per pound), if, when the experiments in question were commenced, sodium had not cost 1000 francs the kilogramme (£20 per pound), which, on this head alone, brought the cost of aluminium to nearly 3000 francs the kilogramme (£60 per pound).

The Academy will remark, that not only have the operations at the manufactory of St. Javel placed beyond doubt the possibility of extracting aluminium, on a large scale, by

completely industrial processes, but that they have also secured to science the possession, at a very moderate price, of a reagent of the highest importance—sodium.

Indeed, this metal, which rivals potassium in energy, does not present, in its preparation or management, any of the difficulties which the latter would present. The numerous trials made, prove that its extraction is as easy as that of zinc; that it may remain in contact with the air, in full fusion, without inflaming; finally, that it may flow from the first jet of the continuous apparatus used for preparing it. Its preparation is as easy as that of lighting-gas.

Such an agent as that of sodium, put at a moderate price at the disposal of the arts, will not remain long without taking a large part in them; this is certain.

The Academy will likewise remark, that the labours at the manufactory of Javel open up a new path to metallurgical industry. Hitherto, the metals utilised were native metals, or metals liberated by modes of treatment which consisted always, definitively, in reducing their oxides with charcoal. The extraction of aluminium in this large way opens then a new way, since it teaches us that we may extract the metals from their chlorides. For certain metals this process is indispensable; for others, the old methods may be preferred. Certain metals, unknown to industry, may be brought within its domain.

M. Dumas concluded by calling the attention of the Academy to the sonorousness of aluminium, which might be compared, in this respect, to the most sonorous bronzes—to those of bells, for example—a quality which has not hitherto existed in any metal in the pure state, and which adds another singularity to this curious metal.—*Chemist.*

ON THE DEVELOPMENT OF MUSCULAR FIBRE IN MAMMALIA.

By Mr. Savory.

The author's observations were made chiefly upon fœtal pigs; but they have been confirmed by repeated examinations of the embryos of many other animals, and of the human fœtus.

If a portion of tissue immediately beneath the surface from the dorsal region of a fœtal pig, from one to two inches in length, be examined microscopically, there will be seen,

besides blood-corpuscles in various stages of development, nucleated cells and free nuclei or cytoblasts scattered through a clear and structureless blastema in great abundance. These cytoblasts vary in shape and size; the smaller ones, which are by far the most numerous, being generally round, and the larger ones more or less oval. Their outline is distinct and well defined, and one or two nucleoli may be seen in their interior as small, bright, highly-refracting spots. The rest of their substance is either uniformly nebulous or faintly granular.

The first stage in the development of striated muscular fibre consists in the aggregation and adhesion of the cytoblasts, and their investment by blastema so as to form elongated masses. In these clusters the nuclei have, at first, no regular arrangement. Almost, if not quite, as soon as the cytoblasts are thus aggregated, they become invested by the blastema, and this substance at the same time appears to be much condensed, so that many of the nuclei become obscured.

These nuclei, thus aggregated and invested, next assume a much more regular position. They fall into a single row with remarkable uniformity, and the surrounding substance at the same time grows clear and more transparent, and is arranged in the form of two bands bordering the fibre and bounding the extremities of the nuclei, so that now they become distinctly visible. They are oval, and form a single row in the centre of the fibre, closely packed together side by side, their long axes lying transversely, and their extremities bounded on either side by a thin, clear, pellucid border of apparently homogeneous substance.

It is to be observed how closely the muscular fibres of mammalia at this period of their development resemble their permanent form in many insects.

The fibres next increase in length and the nuclei separate. Small intervals appear between them. The spaces rapidly widen, until at last the nuclei lie at a very considerable distance apart. At the same time the fibre strikingly decreases in diameter; for as the nuclei separate, the lateral bands fall in and ultimately coalesce.

This lengthening of the fibre and consequent separation of the nuclei is due to an increase of material, and not to a stretching of the fibre.

Soon after the nuclei have separated some of them begin to decay. They increase in size; their outline becomes indistinct; a bright border appears immediately within their margin; their contents become decidedly granular; their

outline is broken and interrupted; and presently an irregular cluster of granules is all that remains, and these soon disappear.

It sometimes happens that the nuclei perish while in contact, before the fibre elongates; but the subsequent changes are the same.

The striæ generally first become visible at this period, immediately within the margin of the fibre.

The fibre is subsequently increased in size, and its development is continued by means of the surrounding cytoblasts. These attach themselves to its exterior, and then become invested by a layer of the surrounding blastema. Thus, as it were, nodes are formed at intervals on the surface of the fibre. These invested nuclei are at first readily detached, but they soon become intimately connected and indefinitely blended with the exterior of the fibre. All its characters are soon acquired; the nuclei at the same time gradually sink into its substance, and an ill-defined elevation, which soon disappears, is all that remains.

Lastly, the substance of the fibre becomes contracted and condensed. The diameter of a fibre towards, or at the close of intra-uterine life, is considerably less than at a much earlier period.

At the period of birth muscular fibres vary much in size.

The several stages in the development of muscular fibre, above mentioned, do not succeed each other as a simple consecutive series; on the contrary, two or more are generally progressing at the same time. Nor does each commence at the same period in all cases.—*Microscopical Journal.*

ON THE VARIOUS BREEDS OF SHEEP IN GREAT BRITAIN, ESPECIALLY WITH REFERENCE TO THE CHARACTER AND VALUE OF THEIR WOOL.

By John Wilson, Professor of Agriculture in the University of Edinburgh.

(*Continued from p.* 588.)

Romney Marsh.—The breed of sheep met with in the Romney Marshes has long been recorded as peculiar to the district, occupying the same locality, and still to a great extent preserving its own particular characteristics amidst the many changes and improvements that have so materially

influenced other breeds. Attempts have been made at various times to introduce Leicester blood into the flocks, but they have not been altogether successful: the shape and points of the animal have been improved, an earlier maturity and aptitude for fattening obtained, while at the same time the size of the sheep has been somewhat diminished, and the fleece, though improved in staple, has been reduced in weight. It has also been found that if the Leicester stain predominate, or even exceed a certain point, the natural hardihood of constitution is changed, and the sheep become too tender for their exposed pastures. The characteristics of the pure breed are as follows:—The head and legs are white; the head long and broad, with a tuft of wool on the forehead; no horns; neck long and thin; breast narrow with moderate forequarters; the body long with flattish sides and sharp chine; loins wide and strong; the belly large; thighs broad and thick; and legs and feet large, with coarse bone and muscle. They are very hardy, and are well adapted for the bleak and exposed district of the Romney Marshes. They also bear stocking closer than other breeds, as it is not unusual to see six to eight fattening sheep placed to the acre. The improved breed produces sheep ready for market at from 2 to 3 years old, weighing from 120 to 140lb. The fleece is valuable, weighing on the average 8lb. Being long in the staple, with a bright and glossy surface, it is sought after for special uses, and is sold largely in the French and other markets on the continent.

Black-faced Scotch.—The origin of this breed is somewhat uncertain. By some it is considered to be an indigenous breed; by others to have been introduced from England about the middle of the last century, when sheep-farming began to occupy the attention of the Highland farmers, and gradually to displace the herds of cattle that then formed their chief support. The characteristics of this picturesque breed readily distinguish it from the other breeds. They have horns: those of the male are of large size and spirally twisted, with two or more curves; in the female sometimes they are absent. The face is black, rather thick at the muzzle, the eye bright and wild, the body somewhat short and square, the fore quarter not so low, and the legs not so long as in most mountain sheep. They are muscular and very active, of a hardy constitution, and well adapted to endure the privations and severe climate of the hilly districts in which they are kept. They have also the important property of finding a subsistence upon the *heather* with which the Highlands generally abound, and which affords them food even when the surface

of the ground is covered with snow. Though a pure mountain breed, their habits are not so restless, and they are more docile than might be expected, and thrive well in the lowland enclosures where the keep is good. Large numbers are annually prepared for market in this way. At three or four years old they average about 60 to 65lb. each. The ewes are strong and good mothers and rear their lambs well, even under the privations and exposure to which they are themselves liable at that season.

Latterly considerable attention has been paid to the breed: not only are the points and weight of the animal improved, but the fleece, which possessed certain defects, has been improved also. The wool, which is loose and shaggy, is lessened in value by the "kemps" or hairs which are mixed up in it. These, of course, reduce the quality of the fleece, which can be used only for the coarsest goods. Good feeding, and a judicious selection in breeding from animals the most free from this defect, have already effected a marked improvement in this respect. The fleece, when washed, averages about 3lb.; the practice of smearing, however, is very general with this breed, which, consequently, increases the weight but decreases the value of the clip.

Many crosses are met with between this breed and others, both long and short woolled. That with the long-woolled Leicester and with the short-woolled South Down appear to be the most successful.

Exmoor.—This is a pure mountain breed, indigenous to the forest of Exmoor and its immediate vicinity, the hilly districts of North Devonshire and West Somersetshire, where it has existed from a very early period. These sheep have horns of varied growth, according to the richness of the pasture on which they feed: the horns of those fed on the richer cultivated lands are valuable for ornamental purposes. Their heads and legs are white, and covered in a remarkable manner with short, thick-set wool. In many cases the head is so completely enveloped, that it is with difficulty that the animal can see through it. The shape of their body resembles that of a barrel, *being rounded at all points*, thus differing materially from the square form of the cultivated breeds; this shape enables them probably the better to withstand the rude climate of their native hills. Such are the principal external characteristics of the pure mountain breed. In the lowland districts the farmers have been in the habit of crossing them with Leicesters and other long-wooled sheep, and have obtained a breed known locally by the name of "Notts" (not horned), which in many respects are con-

sidered more profitable. The "Exmoor" ewes drop their lambs very early, and have the reputation of good mothers for the production of fat lambs for the London and other early markets. The wethers are generally grazed until they are four or five years old, according to their condition and wool-producing powers; they are then sent down to the lowland farms, where they are fattened on turnips, and sent to market, weighing on the average from 60 to 75lb. each. This is found to be a more advantageous system than feeding them at an earlier age, when the gross weight is less, and the market value of the meat not so high. The meat is much esteemed for its fine flavour, and always commands a high price. The fleece weighs on the average from 4 to 5lb.; the wool belongs to the *long* wool class, and is of excellent quality, being grown very fine and close upon the body, and of a moderate length. It is the practice also to clip the *stock lambs*, which produce each from 1½ to 2lb. of beautiful fine wool, according to their age and the treatment they have received. When these sheep are carefully kept and attended to, on well-cultivated farms, their size, fleece, and general characters rapidly improve, and many farmers assert that they will return more profit per acre than the more highly cultivated and less hardy breeds.

The principal crosses are with the Lincoln and Leicester breeds: these improve both the size of the animal and also the weight and quality of the fleece. Other crosses have been tried with Bampton, Dorset, and Cheviot sheep, but they have not been continued.

Devonshire South Hams.—The district in which this breed is met with is extremely limited, being principally the southern portion of Devonshire, extending from the Vale of Honiton up to the borders of Dartmoor. In physical characters they more resembled the Romney Marsh than any other breed, though they differed from them in having brown faces and legs. Latterly they have been improved by the introduction of Leicester blood; this has had the effect of somewhat reducing the size of the sheep, and of causing the colour of their faces and legs gradually to disappear. The points of the animal have been materially improved, a disposition to fatten at an earlier age obtained, and a finer fleece secured. When ready for market, at about two years old, the sheep weigh from 100 to 120lb. each; the mutton is well flavoured and commands a good market. The fleece averages 9lb. in weight; the wool is long in the staple and of moderate quality. The practice of smearing the sheep is

still followed in the hill districts; this of course lessens the value of the wool produce.

Bampton.—This breed takes its name from Bampton, a village in Devonshire, in the vicinity of which it has existed for some centuries past. Like most of the old indigenous breeds of the country it has gradually been displaced by the improved breeds, and now it is very difficult to find the pure Bampton unmixed with other blood; a few only remaining in Devonshire and West Somerset. They are usually met with crossed with the Leicester breed, and very much resembling them in shape, though somewhat larger in size and hardly so fine in general characters. They are without horns and with white clean faces and legs; they are hardy, but require good pasture. At two years old, if well kept, they average 120 to 150lb. each. The meat is juicy, but like that of all large sheep, inferior in quality to the smaller breeds. The wool produce is good; the fleece, averaging 7lb., is rather coarse in quality. They are now so intermixed with Leicester blood as to partake more of the character of that breed than of the old stock. Crosses with Lincolnshire and with the Exmoor breed are also met with.

Herdwicks.—This breed is confined to the mountain districts of Cumberland and Westmoreland, where it enjoys the reputation of a hardy and profitable animal, well adapted for the rough and bleak country in which it is kept. The sheep are without horns, and have generally speckled or mottled faces and legs, which become gradually greyish or white as the age of the animal increases. The fleece weighs about 3 to 4 lb. The wool is coarse and open. On the shoulders and neck it becomes matted and kempy, and is only fit for the common description of goods, as rugs, coarse woollens, &c. When left on the hill-pasturage the wethers generally remain until they are four or five years old before they are fit for the butcher; they then average from 40 to 50lb. each. The quality of the meat is first-rate, and always commands a good price. The ewes are good mothers and produce generally fine strong lambs. They display great sagacity on the approach of snow-storms in choosing situations free from the danger of deep drifts. When the storm reaches them they seek the most exposed part of the mountain, which by the violence of the wind is usually swept clear of snow, and here they remain herded together until the storm has passed, taking care to keep up a continual movement, and thus to trample down the snow as it falls. They possess also the peculiar feature for a mountain breed, that they remain

attached to a particular spot or locality, and rarely are met with straying far away from it.

Intermediate.

Dorset.—This is a breed peculiar to a certain district in the south of England, where it has been preserved for a very long period. Both male and female possess horns; they have white legs and faces, the face long and broad with a tuft of wool on the forehead; the nose and lips black; shoulders low, with straight back and good brisket; the loins broad and deep; legs somewhat long, but with small bone. A breed exists in Somersetshire having the general character of the Dorset, with the exception of the coloured noses and lips; these are of a *pinkish hue*, and the breed is known as the "Pink-nosed Somersets." The Dorsets possess, as their frame would indicate, the physical characters of a hardy, useful breed; they are very quiet and docile, and readily adapt themselves to the different modes of management to which they are subjected. They thrive well on moderate keep, arrive at maturity early, and will feed on turnips up to 80 to 100 lb. weight at two years old. The peculiar characteristic of the breed, which indeed constitutes its principal value, is the fecundity of the females, and their readiness to receive the male at an early season. If well kept and in good condition, this takes place as early as April; thus the yeaning commences in September, and the lambs are fit for the market by Christmas, at which time of the year they fetch a very high price. Some additional care and feeding are of course required. The ewes, however, are excellent mothers, giving a large supply of nutritious milk, while at the same time they are again ready to take the ram and become impregnated while rearing their early offspring. The fleece is close and heavy, with a staple of moderate length; the average weight may be taken at 6 lb.

The practice of crossing with the South Down is becoming very general, especially when only lambs are desired; these are shorn and produce from $1\frac{1}{2}$ to 2 lb. of wool each, which fetches always a higher price than the "teg" wool. For store sheep it is a valuable cross, the produce feeds better, grows to a good size, and yields a finer and heavier fleece than the pure Dorset.

Cheviots.—The long line of hills, the Cheviots, traversing the border counties of England and Scotland, have given their name to a breed of sheep which seem to occupy an intermediate position between the black-faced breed of the

Highlands and the more cultivated flocks of the Lowlands and of the south. These sheep are without horns; their heads and legs are white in colour—sometimes, but rarely, dun or speckled; the face good, with lively eyes; the body rather long, on clean, fine legs; the neck and fore quarter, like those of all mountain breeds, are rather light. These, by judicious breeding and management, have been considerably improved of late years. They are exceedingly hardy, and although possessing all the vigour and constitution of a mountain breed, exhibit none of their restless habits, and submit with great docility to the restraint of the Lowland farms. The natural pasture of the Cheviot range is very good and nutritious, and has aided in the development of a larger-framed animal than that of other mountain districts. The wethers are usually kept till they are three years old, when they fatten readily on turnips, and are sent to market weighing on the average from 70 to 80 lb. each. Owing to the climate, the lambing is very late, not until the end of April or the beginning of May. This is always a period of anxiety, as great attention and care are required. The ewes are good mothers; in some districts it is still the practice to milk them for six or eight weeks. This, though yielding a small produce in cheese, is very detrimental to both the ewes and the lambs, who are injured to a greater extent than the return obtained by the sale of the cheese. The breed is met with throughout the whole of Scotland, and in the border counties of England. In Ireland and Wales also it has been introduced very successfully into several of the more elevated districts. The fleece averages about 5 lb. The wool is of medium length and quality. The practice of smearing or salving the sheep before winter is becoming less general every year; it is now confined chiefly to the more elevated districts, or the more exposed pastures of the northern counties. The operation, intended chiefly as a protection from the climate, has the effect of lowering the value of the fleece, while at the same time it entails a certain cost both in materials and in labour. The Cheviots have been crossed successfully with the Leicester and South Downs; in both cases the produce has been very satisfactory, showing an improvement in the carcase, the weight and quantity of wool, and an aptitude to fatten at an earlier age than the pure breed. At the same time the crossed breed is more delicate in constitution, and better suited for the Lowland farms than for the exposed pastures of their native hills.

Radnor and Welsh Sheep.—The different breeds of sheep met with in Wales need but a passing notice, as, under an

improving system of farming, they are gradually being replaced by others possessing superior qualities, and at the same time sufficiently hardy in constitution to withstand the lower temperature and humidity of a mountainous country. The native breeds have but few qualities to recommend them; they are hardy, active animals, capable of finding a subsistence wherever they are placed, but they are very small in size, and produce but little wool, and that greatly deteriorated in value by the "kemps" or hairs with which it is mixed. The *higher mountain* breed is horned, with black faces and legs, and sometimes with and sometimes without horns. They rarely weigh more than from 30 to 40 lb., even at four and five years old, and their wool produce may be taken at 1 to 1½ lb. each. The Radnorshire breed has assumed almost a distinct character; more attention has been paid both to the breeding and to the general cultivation of the animal. The size of the sheep is increased and its general character improved; the fleece is heavier, and the quality of the wool is seen by the comparative absence of the "kempy" portions which lower the value of the mountain breed. Leicesters and South Downs are now met with on the rich cultivated lowlands of Wales, while the Cheviot and Highland breeds are seen gradually increasing even on the higher mountain districts of the Principality. The principal crosses are with the South Down and the Leicester breeds; these, upon the lowland farms, are very successful.

(To be continued.)

HYDROPHOBIA IN FRANCE.

Hydrophobia in France.—From an inquiry instituted by the French Government it appears that, in 1852, no less than forty-eight cases of hydrophobia occurred in France, these being distributed over fourteen departments. Returns are now ordered to be made every year; and one consequence of drawing attention to the subject has been the inundation of the government with infallible specifics. These have been handed over to the *Académie de Médecine* for examination, and M. Bouchardat, in a recent report, exposes their ridiculous pretensions. He observes that there is not one of these recipes which has not at some former epoch been brought forward, and allowed to fall into deserved oblivion. The authors of these communications must also be edified at learning that the *arcana*, which they flattered themselves they alone possessed, reach the government by different channels, and are, indeed, traceable to quite the infancy of art.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Our readers will remember that in a late number we gave an account of the visit of the deputation of the Royal Agricultural Society of England to the French International Exhibition of Cattle, held in Paris. Since then, each member of the deputation has been honoured by the presentation of several volumes of books connected with agricultural science as a *souvenir* from the Minister of Agriculture. The following is an outline of the contents of those we have received.

Report on the execution of the Decree of the 3d of October 1848, *referring to the Academical Teaching of Agriculture.*

The organization of Agricultural Colleges in France under the auspices of government, dates only since 1848. The above work gives interesting accounts of all the secondary agricultural schools, accounts which were collected with a view to prove the utility of a national establishment, such as was established at Versailles in 1849.

"*The Royal Dairy of Pim.*"

There is no date to this Atlas. It is a collection of illustrations by Gustave le Conteulx. The drawings on the whole are very inferior, and offer a striking contrast with those in the works mentioned below. The animals from which they were taken were good specimens of short-horns, still holding a good repute in the dairies of his Majesty the French Emperor.

The Short-Horn, or Durham Breed of Cattle in England, America, and France. By M. G. Lefebvre Sante Marie, Inspector-General of Agriculture, &c. Paris, 1849.

This contains a very interesting historical sketch of the short-horns in England, speaking in praise of our breeders; also, of the importation of the short-horns in France, the foundation of appropriate dairies, and experiments undertaken to establish the importance of crossing the French with this English breed. Similar reflections are made respecting

the United States. This work shows how the French admire and wish to benefit by our exertions this side of the Channel.

On the Institutions of "Trust on Land" and "Agricultural Credit" in the various States of Europe. New Documents collected by order of M. Dumas, Minister of Agriculture. Paris, 1851.

These institutions are destined to favour credit, on mortgage upon land, or on the moveable property of agriculturists. It is a work interesting beyond measure to those who make economic science their study.

A Guide to Landed Proprietors who let their Land to Farmers for an Annual Rent. Second edition. By De Gasparin.

A Guide to Landed Proprietors, who let their Land to Farmers for the Half of its Yearly Produce. Second edition. By the same.

In France more than half the land is cultivated by farmers, who, instead of paying rent, divide the produce between themselves and the proprietor of the land. This is a practice common in many countries on the Continent, and disadvantageous to the owner of an estate, as he is generally cheated of all that comes under the name of perquisites, and such perquisites are neither small nor few. Some farmers, like in England, pay an annual rent, and inasmuch as the working of a farm in either case is different, a separate 'Guide' for each kind of farmer has been written by De Gasparin.

De Gasparin is known to us, as veterinarians, for his elaborate treatise on the 'Contagious Maladies of Sheep.' He was originally a student in the Lyons' Veterinary School, and, engaged since in the study of agriculture, has raised himself to the enviable position of Member of the French Institute, and Minister of Agriculture and Commerce.

The Agricultural Show held in Paris in 1854 *entitled "Concours régioneuse d'Animaux Reproducteurs," &c. &c.*

This work, like all other similar reports, is intended to furnish data whereby to appreciate the successful efforts of French agriculturists, and their successful advances in all rural matters. In this are lists of the many prizes given, and drawings of the best animals. Some of the illustrations are the most accurate of the kind we have yet seen. The

reason of this is, they are copied on stone from daguerreotypes or photographs, and whereas artistic elegance in composition is not sought after, in order to have a side view of all the animals, nothing is sacrificed to having accurate portraits. An artist, with a rather fanciful idea of animal beauty, having the "ideal" deeply graven in his mind, strives to make a perfect animal, and often corrects defects which, for the benefit of agriculturists, should be always shown up, with a view to their correction. Apart from all such considerations, many of the illustrations in this volume are masterpieces, and, to award merit where it is due, establish the priority of the French as lithographers. We strongly recommend the use of photography and stone in all cases of the kind.

Reports on the Shows of Animals for Consumption since their establishment in 1844 *up to the present day.* Published by order of the Minister of Agriculture. Paris, 1849-55.

We have received six elegant volumes, comprising tables of animals shown, and plates of the best exhibited, at Lyons, Bordeaux, Lille, Nimes, Nantes, and Poissy. Some of the plates are exquisite as works of art. In the first book is a historical sketch of these shows, especially given, in the form of a long extract from M. Yvart's speech before the committee chosen to establish them. Our neighbours were seemingly first stirred by our Smithfield cattle-shows, and have established laws by which prizes are given to animals in France, according to the purposes required of them under many different and ever-varying circumstances. In the working, the French and English shows differ somewhat; but they have one common object in view, the improvement of our domestic breeds. Yvart is inspector of the veterinary schools, and a gentleman well acquainted with the agriculture of England and other countries, and learned in veterinary science.

An Exploratory Journey on the French and Italian Sea Coast, &c. A Report by M. Coste, Member of the Institute, &c., &c.

In the work under notice, certain spots are described famed for fisheries, oyster-beds, &c. The artificial propagation of fish, especially of salmon and trout, is a subject which

has excited the interest, and is engaging the attention of monarchs and legislators, of men of science, and men of commerce, and of the people in general of many countries. In Great Britain, as in France, striking results have been obtained; and last year alone, in the fisheries of Lough Corrib, in Ireland, 260,000 salmon were artificially hatched; 350,000 were brought to life on the borders of the river Tay, and nearly the same number in the Dee.

Coste, known to every physiologist for his researches in embryology, has brought his knowledge to bear on practice, and has rendered physiology of immediate service and direct application. It was at his instigation that the French government founded an establishment at Huninguen, for the artificial propagation of the choice produce of the Rhine, the Danube, and Swiss Lakes; and, in a great measure, it is M. Coste we shall have to thank, if those rivers in which choice fish had become scarce, are again replenished, and made to team with life, valuable to the public, as it is interesting and agreeable to the naturalist and sportsman.

In connection with this subject, we observe that His Imperial Majesty the Emperor, has forwarded to Mr. Jonas Webb, in acknowledgment of his present of the *first prize* Southdown ram, a handsome candelabrum, of which the following description has been given in the public prints:

"The Emperor of the French has honoured Mr. Jonas Webb, of Babenham, with a testimony of his regard, in the shape of a splendid silver candelabrum, of the most exquisite workmanship. It is in the form of an oak tree, containing five burners; the foliage is of frosted silver, and the acorns burnished, giving it, when lighted, an exceedingly dazzling appearance. Beneath the tree, are the figures of horses grazing, and of a mare and foal. It is an instance of his Majesty's appreciation of the success which has attended Mr. Webb's endeavours to improve the breed of sheep."

THE VETERINARIAN, NOVEMBER 1, 1855.

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

COMMENCEMENT OF THE SCHOLASTIC SESSION AT THE ROYAL VETERINARY COLLEGE, LONDON.

THE commencement of "another" Session is an event looked forward to, both by the teacher and the taught, with some degree of anxiety. Each is conscious of the responsibility that attaches itself to the position in which he is placed, and having to buckle on the armour afresh, he feels as though new duties devolved upon him, and he cannot boast as he does, who, after having gotten the victory, throws it off. Yet, nothing daunted, each prepares himself for the combat with a determination to succeed, sustained by hope, who lends her cheering aid to courage.

It may be that some are placed in this situation for the first time, and then the seeming difficulties to be overcome, render them doubly solicitous, since, to a person of rightly-constituted mind, the degree of apprehension will be commensurate with the weight and importance of the subject in which he is engaged. Not that this will damp his ardour; on the contrary, it will awaken in him a determination that no opportunity shall be lost for the acquirement of those principles which, being implanted in the mind, like good seed, will, after due culture, "spring up and bring forth fruit." This will apply, in part, both to the preceptor and the pupil; yet it may be that the student thinks his is the more arduous task. But he knows little of what his instructor has to contend with. He cannot estimate the amount of research involved, and the nicety of discrimination that is called for in the disentanglement of truth from error, so that in the performance of his prevenient duties, he does not promulgate that which is incorrect, thus leading the minds of others astray. It is imperative on him that he be

constantly on his watch-tower, to guard against assailants, for 'tis his to direct, and should he be at fault, the consequences may prove serious, although not perhaps so much to himself as to others. But does this render him less solicitous? Rather, does it not impose on him greater carefulness and circumspection? His mental solicitude often causes him to consume the midnight taper, and awakens him at early dawn. His mind is ever on the alert to acquire fresh facts whence to deduce principles that shall be the guide of those he is privileged to instruct. Nor does it rest here; the force and correctness of expression wherewith rightly to impress these truths are to be acquired, so that his class may become thoroughly imbued with them.

Yet, in common with Professor Spooner, we have no wish to lessen nor remove the weight of the responsibility felt by the student, believing, as we do, that it will have a salutary influence on him, and determine his future course of conduct. The labour of thought will strengthen his mind in the acquirement of knowledge; and, although much that is apparently incomprehensible, will present itself at the first, having been rightly instructed, he steadily pursues his studies, confident that in the end all difficulties will be surmounted. Others have pursued the same path before him, and attained to honour and success in life, and why may not he? Moreover, he finds himself associated with those who are entering on the same course, and the interchange of thoughts and of hopes stimulates him to go onwards. He feels assured that by and by the thin veil will be removed, and the mind, becoming expanded by what it has acquired, will possess new powers, and thus be enabled to comprehend those things which at one time appeared to him to be both perplexing and abstruse. Further, he will see their utility, and thus appreciate their worth, and this conviction will strengthen his resolution to persevere, conscious that he alone wins the race who strives for it. The very difficulties, indeed, excite attention and create an interest, and ere long he becomes convinced that it is only by intense mental labour that the possession of knowledge is to be ensured; while a

antagonistic opinion advanced, only acts as an incentive to further inquiry and investigation, and thus that at length becomes pleasing and profitable which once seemed to be uninviting and worthless.

But equally as varied as those of the teacher and the taught will be the thoughts that pass through the minds of the members of the profession who may be present on such an occasion. They can recollect many an event that transpired when they took their places in the theatre, or accompanied their instructor in his daily rounds through the infirmary, anxious to catch the passing comment, and to impress it on the tablet of their memories. Life has presented many a chequered scene since then, still the tie is not yet broken that binds them to the place where they first imbibed professional knowledge. Some, too, with whom life has passed into "the sere and yellow leaf of autumn," looking back twenty or thirty years, can remember others who have filled the professor's chair; especially one, who for a long period was so honoured, and who, in a free and conversational style, was wont to inculcate principles they have never forgotten. It is true he had his peculiarities, and it may be he rode his favorite hobby a little too hard, but—

"Take him for all in all
We ne'er shall look upon his like again."

He was succeeded by one, not possessed of equal talents certainly, but who was thoroughly in love with his profession; and by quiet perseverance in well-doing and gentlemanly demeanour, succeeded in obtaining the good opinions of most of those with whom he had to do.

These, however, have passed "to that bourne whence no traveller returns" to tell us what is doing on the other side, and their place is now occupied by one on whom the snows of age have not yet fallen. May his career be long and useful, even more so than that of those who have gone before him. In ample folds may the mantle of his predecessors rest on him, for there is much yet to be done, the present being an age of progress.

We, too, once were young, and then the world to us a more inviting aspect bore than now. While its smiles were not uncourted by us, its frowns were but little heeded, for we rose above them. There were also the sweets of social friendship enjoyed; and much more than these, there was the desire to be conversant with whatever was new and useful, not even now altogether lost; and although unquestionably there is a high gratification in social intercourse, from the heaven-born influence of friendship being to those who have "found a friend" of inestimable worth, still the truest pleasure is doubtless that of which knowledge is the fruit. "The soul of man," says Heber, "is not only delighted with knowledge, but if she be in a healthy and natural condition, she is also delighted with the act of learning. But that this act should be either agreeable or efficacious, it is necessary that we should do it for ourselves."

Feelings akin to those we have thus expressed came over our minds when we attended the inauguratory lecture of Professor Spooner, at the Royal Veterinary College, on the 16th ult. It was gratifying to see the theatre filled with a large and an intelligent-looking class of pupils, but this gratification was considerably heightened by the attendance of so many eminent members of the profession. This is an encouragement that he alone can estimate on whom the duty has devolved of opening the session, which, while it is one of honour, has, nevertheless, that which counterbalances it. Still it is a stimulus that works for good, and being thus opportunely applied, it always produces its desired end. "*Esto perpetua*" we would say.

As we have been favoured with the notes of the lecture, which has been inserted nearly in full, to it with pleasure we refer our readers. No comments of ours are called for: it speaks for itself. The professor delivered it with his wonted energy; and it was listened to throughout with marked approval. Its salient feature was, doubtless, the new laws that have been formed for the guidance of the pupils during their attendance at the College. The spirit of these laws may have existed in the archives of the institution

from its very beginning, but this is the first time they have been brought together as a code, and promulgated. The period, however, had fully arrived when this was required to be done. Often had they been asked for, and the answer was always of necessity vague and unsatisfactory. They are now given publicity to; and although, perhaps, the perfect working of one or two of them may be doubtful, arising from the absence of the collegiate system in our "alma mater," *as a whole* we give to them our assent and approval. The object in view has been but one,—the benefit of the student. They contain an outline of the studies to be pursued by him and, the laudable stimulus thereto is a reward for his industry and talent; while at the same time new sources for the acquirement of practical information are opened to him.

We may not—we do not—like restraint. All, perhaps, are too apt boastingly to speak of their freedom of thought and action, and, as Englishmen, we pride ourselves on it, forgetful that at times we need both to be checked and advised. Impressions, too, are easily made in early life, for good or ill, and both are alike progressive.

"Bad leads to worse, and better leads to best."

It is, therefore, that we express our earnest hope that this, which has been intended for good, will prove successful, and "the end will justify the means."

MR. VARNELL'S QUESTIONS ON THE BREEDING OF ANIMALS.

May we be permitted to call the attention of our readers to the above important subject, inserted in our July number? We have received several interesting and valuable replies, but not so many as we could have wished or had anticipated. The close of the year is approaching, and we are desirous of placing on record an analysis of the communications we have been favoured with, convinced as we are that the profession cannot fail to be benefited by it.

VETERINARY MEDICAL ASSOCIATION.

The first meeting for the session of the Members of the Veterinary Medical Association, was held in the theatre of the Royal Veterinary College, on Tuesday, Oct. 23d, 1855.

After the election of officers, it was announced that the large Silver Medal had been awarded to Mr. G. Western for his Essay "On the descriptive Anatomy of the Liver of the Horse, Ox, Sheep, Pig, and Dog; that of the Horse being taken as the standard of comparison." Likewise that "Certificates of Merit" had been granted to Mr. Clement Lowe, and Mr. Clement Stephenson, jun., for their theses on the same subject.

Further, that the "Thanks of the Association" had been awarded to Messrs. E. Howes, J. E. Peele, H. Procter, and G. Evans, for the best papers introduced for discussion during the last session.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING, August 22, 1855.

The Supervision Committee regret having omitted in the last Report the remarks of Professor Spooner on the policy of the reduction of the Examination Fee. They have now consequently to state, that he spoke strongly in favour of the motion, and considered it most desirable, both for the London and Edinburgh schools, that such diminution of the fee should take place, and that every endeavour should be made to bring about a complete union of the profession.

SPECIAL MEETING OF THE COUNCIL, Sept. 5, 1855.

This was a Special Meeting held in accordance with the provisions of the charter to confirm the proceedings of the last special meeting. Present—Messrs. Braby, Dickens, Goodwin, Hallen, Jex, Peech, Stockley, Varnell, Wilkinson, Withers, and the Secretary. H. Hallen, Esq. Vice-President, in the chair. A letter was read from Professor Dick, acknowledging the receipt of the communication of the proceedings of the last meeting, but not giving any decided opinion on the same.

The purport of the present meeting having been stated, a discussion ensued, in which the desirability of obtaining the

opinions of the authorities of the Edinburgh School, as to how far the proceedings of the last meeting would meet with that degree of amity and co-operation, without which the sole object in view, namely, unity between the College and the School, could not be ensured, was mooted.

In accordance with this, it was moved by *Mr. Withers*, and seconded by *Mr. Braby*, "That this meeting do adjourn for the purpose of ascertaining whether or not the alterations proposed at the last meeting of Council, will, if confirmed, effect the purpose intended."

It was moved as an amendment by *Mr. Goodwin*, and seconded by *Mr. Varnell*, "That this meeting do adjourn for the further consideration of the resolutions passed at the last meeting with reference to the school of Mr. Dick." The amendment, on being put from the chair, was lost, and the original motion carried.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Jex*, "That the Secretary be requested to communicate with Professor Dick, forwarding a copy of the resolution passed this evening, and requesting his early attention to the same." This was put, and carried unanimously.

Messrs. Wilkinson, Ernes, and the Secretary, were named as the Committee of Supervision; and the proceedings terminated.

J. Wilkinson,
W. Ernes,
E. N. Gabriel.

ARMY APPOINTMENT.

Staff.—George Western, Gent., to be Veterinary Surgeon to the Forces.

OBITUARY.

We have been informed of the death of Mr. William Lacey, of Adbolton, Nottingham; and of Mr. T. Turner, jun., Australia. Truly death knows no distinctions: alike to him are the aged and the young.

ERRATUM IN NO. 334.

Page 571, line 19, *for* and Pot. Tart. *read* Antim. Pot. Tart.

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Communications and Cases.

ON CANCER AS AFFECTING THE HORSE.

By Arthur Cherry, M.R.C.V.S., Gresse Street.

In the last number of the *Veterinarian*, a paper on Malignant Tumour, by Mr. Foster, of Spalding, is published, appended to which is a foot-note, in which it is stated that by a microscopical examination the deposition was shown to be of a cancerous nature.

The diagnosis and treatment in this case do not admit of comment; because the first is not stated in such a way that we can learn much from it; and of the second, it may be remarked that the obscurity under which we labour from the first cause, would render any observations invidious, and therefore improper.

This paper, however, brings to my recollection a case of cancer which came under my care some fifteen years ago, a short history of which may not be uninstructive, and especially to a tyro in the practice of the veterinary art.

I was requested to look at a small underbred cart-horse, which had a large swelling beneath the jaw, for which he had been under the treatment of one or more farriers, or quacks, for a long period, and while so, the enlargement had become greater.

I found a tumour occupying the space between the rami of the lower maxillary bones, involving the submaxillary glands, and also the contiguous structures. A wound existed in the part, evidently the result of the application of some escharotic mixture, besides this, there were also other signs of local treatment.

The tumour was indurated and indistinctly lobular—the wound had a bright or shining appearance, and but very little discharge came from it, and this only from the surface, having an ichorous character.

It was quite clear that the only chance for a cure was excision by the knife; and though a very difficult and dangerous operation, still one that was practicable to an operator possessed of a correct knowledge of the anatomy of the parts, and likewise the perfect use of his hands.

Having thus far considered the case, as to the means whereby the malady was to be removed, other points arose for consideration; and, *first*, of what nature was the disease? Was it a case of simple induration—scirrhus, cancer, or what?

The lobulated form, as well as the indurated condition of the tumour and appearance of the wound, led me to suspect that it was a case of true cancer of the submaxillary glands; and I was further induced to suspect this from the length of time, as I was informed, that the disease had existed. I inferred, likewise, that in all probability the cancerous diathesis had extended, or at all events it was likely so to do, even if an operation was successfully performed.

As cancerous matter has been shown to be capable of being absorbed into the system, and affect the lymphatic glands in the course of the absorbents from the tumour, firstly; and secondly, other similar glands of the system, I proceeded to ascertain the condition of the absorbents and lymphatic glands proceeding direct from the tumour and along the course of the jugular veins. I found, as I had anticipated, that these glands were enlarged, especially those situated at the lower part of the neck, and close to the origin of the carotids. A superficial examination showed, however, but a small increase in their size; so little, in fact, that it might have been overlooked by a casual observer. On carefully examining beneath the sterno-mastoid muscles, I found that only a small portion of the glands was visible beyond their edge, but I succeeded in satisfying myself that the glands on both sides were as large as a medium sized orange, and were distinctly lobulated.

I was now perfectly satisfied of three things: *firstly*, that the malady was true cancer; *secondly*, that the diseased elements were absorbed into the system, and, consequently, if the *glandulæ jugulares* were affected to so great an extent, that in all probability other similar glands were in a like state of disease; and, *thirdly*, that under these circumstances, an operation would be totally inadmissible, with any hopes of its proving a cure. I therefore advised that the animal should be destroyed.

After an interval of some weeks this was done, and though very imperfect means existed for a post-mortem examination,

I succeeded in proving most satisfactorily the correctness of my *diagnosis*—for not only were the glands already described affected with true scirrhus, but also both the inguinal and several of the mesenteric glands, three of which especially were of very large size. All these presented the same appearance of hard, lobulated, and rounded tumours. On dividing them they showed the condition of true scirrhus, just prior to the taking on of the ulcerated form, and which is more properly known as cancer.

I preserved one of these tumours, and which I have still in my museum.

This was a case of *true scirrhus;* and although the mesenteric glands were affected, the animal had not any appearance whatever of *tabes mesenterica*,—a very different disease, and of which I have met with several cases. One of these showed, in addition to the diseased state of the mesenteric glands, ossification, to a very considerable extent, of the mesenteric arteries.

This was certainly the most marked case of the kind that has occurred to me in the course of a long practice, and it will tend to show how cautious a practitioner should be in minutely examining for points apparently unconnected with a disease, and carefully noting *minutiæ* and deliberating on even remote probabilities, ere he commits himself, either by an operation, or an opinion as to the future results.

I know that it had on myself a good effect, for though, as will be seen by the above recital of the simple facts, I was not previously disposed to be incautious, it made me very much more so, for if it has acted by staying my hand from more than one or two operations by which I might have gained repute as an operator, it has left me the far greater satisfaction of having judged wisely, and thereby prevented, on the one hand, a subsequent unfavorable termination; and the avoidance to the animal of an unnecessary operation, and consequently of pain—for I need not say that any operation performed without a reasonable prospect of benefit is cruelty to the suffering, uncomplaining animal, and to be most strenuously deprecated.

CASE OF INTESTINAL CALCULUS.

By Josiah Hutton, M.R.C.V.S., Sudbury, Suffolk.

On Friday, September 21st, 1855, an aged chestnut horse belonging to the Eastern Counties Railway Company, and

employed on the Sudbury branch, came into my infirmary, suffering from spasms of the bowels, or, as they are commonly called "gripes." My assistant gave him an antispasmodic draught, and an enema, which afforded temporary relief.

At 12 at night the pain returned with increased severity, when my attention was more especially directed to him. On examination, I found the pulse had risen to 76; the extremities were cold and clammy, and moisture bedewed the surface of the body. The mucous membranes were injected, and the respiration much increased. There was a "care-worn" condition of the countenance, and the animal was very restless, frequently getting up and lying down. A draught composed of Ether. Sulphuric., Tinct. Aconiti, et Oleum Lini, was given. Enemata were repeated, and a mustard embrocation applied to the abdomen. The animal was also put into a loose box, and left in charge of the servant, with directions for his general management.

Sept. 22d, 2 a.m.—The pulse now numbers 80; the pains are not in any way abated, and a considerable amount of moisture exists on the surface of the body. I gave

Aloës, ʒiv;
Hydr. Chlorid., ʒj;

and an hour afterwards repeated the draught and enema. Gruel was also ordered to be administered every two hours, and enemata thrown up, and the comforts of the animal attended to.

7 a.m.—The pulse is beating 90 per minute, and the respiration is likewise more laboured. The animal had passed some fæces during the night, but in small quantities: there were still uninterrupted pains present. Examining the rectum I found the bladder distended with urine, and a portion of the intestines forced back into the pelvis: all the other symptoms are unabated in severity. I passed the catheter, when three quarts of urine, having a very offensive odour, were drawn off. Gave a draught composed of Tinct. Aconiti, Sp. Ether. Nit. et Oleum Lini. An hour afterwards—

Hydr. Chlorid., ʒss;
Aloës, ʒiij,

were administered, and the enemas repeated. Ol. Cantharidis et Oleum Tereb. were also applied to the abdomen.

At 1 p.m., the pains for the first time were somewhat abated, and the pulse was lower. The breathing, however, was hurried, and occasionally heavy sighing accompanied; no

fæces had been passed. Ordered gruel, linseed tea, and enemata as before, and the abdomen to be blistered. The absence of pain I feared was referable to sphacelus having set in.

6 p.m. The pain has returned again with all its severity; the pulse is ranging at 86; the mucous membranes are changed to a leaden hue; the breathing is hurried, and frequent sighing is also present; the mouth is hot and dry, with a fetid smell from it; the extremities are cold, the eyes fixed, and the animal walks round the box, apparently in much agony, turning his head towards his side. The bladder had been relieved several times during the day. The blister had taken no effect. My *prognosis* could now be no other but unfavorable. I, however, gave

Hydr. Chlor., ʒss;
Antim. Tart., ʒj;
Sp. Ether. Nit., ʒij;
Tinct. Aconiti, 40 drops;
Sodæ Carb., ʒjss. In draught.

Ordered the enemata to be repeated, and the animal to have chilled water frequently, and be well attended to during the night. My *diagnosis* was that a calculus existed in the intestines; which would account for the obstinate constipation and inflammation of the bowels. At 10 o'clock on the following morning death put an end to my patient's sufferings.

Being Sunday, I was prevented making a post-mortem examination, but was obliged to have the animal removed by the "knacker," whom I particularly requested to closely examine the intestines. The following day he sent me the calculus, weighing, when wet, 4 lb. 3 oz. He informed me that it was taken from the colon, and was imbedded in a large mass of fæces.

I am informed that the horse had performed his usual duties in good spirits on the day he was taken ill; that his food consisted of hay, chaff, ground beans, and oats, and that he had been at the station for about three years, and never was known to suffer any abdominal pain. Previous to his removal to Sudbury, he had been working on the Ipswich line of rails.

[*Examination of the Calculus.*—The concretion was one of the kind we have ventured to designate "mixed calculi;" these being composed principally of the ammonio-magnesian phosphate mixed with the hairs of the oat.

Being much drier than when sent by Mr. Hutton, its

weight was found to be 3 lb. 6 oz. avoirdupois; its form spherical; its surface convoluted; its colour dark brown. On making a section of it, part of a nail was found as a central nucleus, immediately investing which was a film of phosphate, the vegetable hairs being superposited on this. These alternated thoughout the mass in interrupted circular layers. Arranged in a radiated form, as seen on the cut surface, was coarser vegetable matter, resembling partially digested ingesta. On the external surface these radii terminated in depressions, the elevated parts of the convolutions being made up of the hair of the oat. Chemical analysis showed the proportion of vegetable matter to be 60 per cent. the remainder consisting of the phosphate with a little silex.

It is not necessary to state the origin of these constituents, both being derived from the food. Their accumulation, however, may be referred to derangement of the digestive organs, probably caused by the provender not having been carefully selected, as oats which are thin and poor abound in these hairs, while the amylaceous matter they contain is small in proportion.]

STRAY CASES.

By John Aitken, V.S., Dalkeith, N.B.

DEPOSIT OF BONE IN THE TESTIS OF A COLT.

Recently I castrated a bay colt, one of three belonging to Robert Hislop, Esq., brewer and farmer, Prestonpans, which operation I performed by cutting through the skin and tunica vaginalis, and applying wooden clams filled with caustic, immediately above the testicle, embracing the spermatic cord and that portion of the vaginal tunic attached to the epididymis, the usual mode of operating when the clams are used; although I have lately cut away that portion of the vaginal coat attached to the epididymis, with the vas deferens, and applied the clams upon the spermatic cord alone, about its middle, when a little more blood has flowed from the division of some small vessels, but less swelling has followed. According to the usual custom, all the parts below the clams are cut away to within a quarter of an inch of them, they being allowed to remain on from twenty-four to thirty-six hours afterwards, when they are removed,

and the cord returned into the scrotal bag by being pushed back through the opening made for the escape of the testicle. In grasping one of the testicles I detected something hard in its structure, and consequently I cut into it, after its removal, and found a sharp-pointed piece of bone, of an oval shape, which may perhaps be better understood by professional readers if I describe it as being something like a four-drachm ball in form, hollowed out, flattened a little, and sharpened at its ends.

All the colts did well, although some severe weather happened immediately after the operation, to which they were exposed.

WORMS IN THE SPERMATIC ARTERY OF A COLT.

Sometime ago I castrated a black cart-colt, one of two, for Mr. Henderson, Torsonce Mains, Gala Water, in the same manner as described above, and on cutting off one of the testicles below the clams, two live worms escaped. They were about three quarters of an inch in length, round shaped, not jointed, whitish in colour, and somewhat sharp pointed at both ends. The two colts did well.

MAD STAGGERS (PHRENITIS) IN A MARE.

I was lately called to attend a brown thoroughbred mare, aged, that was said to be so violent, from some cause or other, that they suspected madness to exist. She had been accustomed to draw bathing machines in and out of the water, on the seabeach at Portobello, a famed watering place, three miles from Edinburgh. On visiting my patient, I found that she was so violent as to render it almost impossible to get near her; at times she even attempted to climb up the wall, as if to escape from the stable by the roof, the door being barricaded. She was seen to be standing on her hind legs like a dog, with her fore-legs raised to the coping of the wall, and firmly grasping by her teeth one of the joists that supported the roof. On inquiring further into the history of her case, I was informed that she had been noticed to be dull and heavy the day previous, and had not answered to the bit when attempted to be pulled up by the boy, but went onward into the sea with him on her back, and two ladies in a bathing-machine, until all were nearly afloat, causing much alarm for the safety of the parties. She was with difficulty got back and brought home, when she continued in a dull state until the next morning, being then found in the excited condition I have described.

Before adopting measures for her recovery I had to determine whether it was a case of hydrophobia or not, and the chief things that made me conclude it was not, were her dullness, stupidity, and her not offering to bite any one. I managed to get a cord tied round her neck so as to distend the jugular veins, one of which I opened and allowed the blood to flow until she staggered and threatened to fall. After the bleeding I succeeded in giving her an eight-drachm aloetic ball. She continued much in the same state all that day and night, during which time she knocked off the whole covering of the stable within her reach; the joists also bore marks of her catching hold of them with her teeth; indeed it was the owner's opinion that she would eventually bring down the whole stable about her. My engagements did not allow of my seeing her until the next morning when I found but little alteration in her symptoms except that she was rather weaker. The physic not having operated, I gave her another four-drachm ball, and in the course of the day the medicine began to produce catharsis, the alvine evacuations being very watery. The urgent symptoms now abated, and she gradually improved and was enabled to resume her usual work within a few days.

SLEEPY STAGGERS (COMA) IN A HORSE.

I will now relate a case that came under my notice a short time after the preceding one, so as to bring out in a broad light the differences of the two affections and the occasional effectiveness of the treatment. On being called to the animal, a bay-carriage horse, I found him pressing his head, like a bull, against the stable wall, as if he were attempting to push it down. His eyes were dull and sleepy, pupils dilated, pulse about 90, ears, muzzle, and legs cold, coat staring, nasal lining purplish in colour and suffused with blood, symptomatic of congestion; the breathing was not accelerated, but rather heavy, with an occasional sigh; the abdomen also was full and rather tense. On inquiring into the history and previous treatment of the animal, the groom informed me that he had no appearance of ill-health until he was found in this state on that morning. He likewise said that no change had been made in his food, nor had he got loose in the night. I considered it a case of congestion of the brain from overloading of the stomach and bowels with nutritious diet, the horse having had only rather light work to perform. Taking this view of the case I bled him freely from a large orifice until syncope threatened to supervene. This was followed

by an eight drachm physic ball, which, however, as in the previous case, did not operate until four drachms more of aloes had been administered next morning. As soon as the medicine operated freely, all the symptoms remitted, and the animal was evidently very much relieved. The physic had, however, no sooner begun to set than all the symptoms returned, and the animal appeared as bad as ever. I then applied a blister to the poll, and on each side of the neck along the course of the cervical vertebræ, and gave more cathartic medicine. The symptoms were again relieved on the action of the medicine being established, but he once more became ill when it stopped. I then bled him in the palate, scarifying the part deeply with the lancet, and no doubt wounding both the palatine vessels, as there was a plentiful flow of scarlet blood, which I had some difficulty in stopping. This latter step in the treatment seemed to give him more permanent relief than anything that had as yet been done, as he began from that time to improve, and in a few days was quite convalescent.

PROTRUSION OF THE RECTUM IN A PIG.

While attending some other cases at a farm in the neighbourhood of this place, my attention was called to a pig with inversion of the rectum. It was so much swollen as to render it almost impossible to return it until reduced in size. I first scarified the intestine, so as to allow the serum effused between the mucous and muscular coats to escape, and then replaced it by gently pushing it in. Reprotrusion did not occur, and the pig was soon running about and feeding with the rest, and ultimately did quite well.

ON DIARRHŒA IN LAMBS.

By E. J. Parsons, M.R.C.V.S., Tiverton.

Throughout the summer months the pages of your Journal have been unusually quiet respecting the diseases to which cattle are incident; although these have been more rife than for some few years past, and far more so than those of the equine tribe; at least such has been the case lately in my neighbourhood, and particularly amongst sheep. Among lambs, during the past few months, diarrhœa, or the disease vulgarly termed "green scour," has been very prevalent. I have

anxiously looked for a practical article from one of your numerous friends on this subject; but as none has appeared, I am inclined to adopt the opinion that we, as a body, pay but comparatively little attention to this branch of our profession. For myself, I would quite as soon have a "cow-case" on my list as one of a horse belonging to a farmer; indeed, it proves more lucrative, and this by-the-bye seems, now-a-days, to form the basis of most men's willingness to help others out of their difficulties.

But to return to my subject, and carry out my first intention of giving you a few facts which have come under my observation.

In the month of May last, most of the low-conditioned lambs in this district became the subjects of a disease which proved most fatal to them, carrying off in most instances one third or one half of the animals affected. It was only the larger or better-conditioned lambs that outrode the attack. The nature of the first outbreak, which, as I said before, was in May, extending even to the latter part of June, was altogether different to that manifested of late.

In the commencement, diarrhœa was the first and most prominent feature of the malady, and it was followed by cough, and great weakness; the lambs walking with their noses close to the ground, and their ears pendulous, and dragging their hind extremities after them. These symptoms soon became more aggravated, when the animals showed a great desire for water; indeed, I have seen them drink so much as to cause their immediate death by the side of the stream. Other minor symptoms were also present, but which I need not detail, they being similar to those described by me in a number of the *Veterinarian* for 1852, in a paper bearing the signature of "Young Practitioner." At that time, and until last June, I considered the cause of the disease to exist in the digestive organs, and treated it accordingly, searching throughout our manual of Veterinary Pharmacy for something to arrest its progress; but all I tried seemed to be of no avail.

From some cause or other, the lambs after June became more healthy until the latter part of July, when the disease again broke out with increased violence, and extended so generally as to affect almost every flock; the strong as well as the debilitated ones being now affected. They were swept away in such numbers, that the shepherd, on visiting his charge in the morning, very commonly found eight or ten dead, and others dying.

Symptoms.—At first, slight cough existed, but which

soon became more distressing; and indeed so much so, that the shepherd was unable to send his dog for them without endangering their lives from over-exertion. The breathing, likewise, was very quick and laboured; the fore as well as the hind legs very much abducted from the body; pulse quick and thready, with all the visible mucous membranes injected; diarrhœa was only seen here and there, but in no case was it violent.

On a post-mortem examination, the *filariæ bronchi* were seen in the nostrils and at the back of the mouth; while the bronchial tubes and their ramifications were literally crammed with these entozoa. The whole structure of the lungs was likewise much inflated with blood. The intestines presented a normal appearance, excepting in a few patches, and here also were to be found worms similar to those in the tubes of the lungs.

This state of things caused me to alter my opinion, and to adopt the one I now hold: viz., that the seat of the disease is in the air-passages, giving rise to so much irritation, as to disorder the functions of almost all the other organs essential to life. Hence arose my present mode of treatment, which has proved very successful in every case where my instructions have been properly carried out.

My first step is, to get the animals removed from low meadows or succulent grasses to an older pasture facing the south. I then proceed to drench every one with a mixture composed of the following: Sp. Tereb., Sp. Nit. Æther, Ol. Petrol., Ext. Belladonnæ, et Ol. Lini. At the same time, I pour a small quantity of the compound into each nostril. The following day I have them confined in a close house, and fumigate them with burnt sulphur, petroleum, and turpentine; using with it some chlorine gas. My method of disengaging the latter is by mixing together in a basin, Plumbi Rubr., Sodii Chlorid., Acid. Sulph., and this kept well stirred with a stick will soon give off a sufficient quantity of the gas. This fumigation I repeat every third day for a fortnight; and from the commencement of this treatment I have had the satisfaction of finding the cough, together with all the other symptoms, lessen; and at the end of the above-named period have generally been able to discharge my patients. If the approaching cold and wet season should have any other than a favorable effect, I will communicate in another letter, but now I pause, fearing I shall otherwise weary your readers.

Yours, &c.

CASE OF UMBILICAL AND SCROTAL HERNIÆ.

By Andrew Cunningham, V.S., Inverkeillor, N. B.

On the 17th July, 1853, I was requested to see a thoroughbred foal, five months old, the property of Mr. Wm. Jamieson, Colliston Mains. On examination I found a large sac of integument hanging at the inferior part of the abdomen, with an opening through the umbilicus sufficient to admit four fingers, and also an enlargement of the scrotum; making it evident that both umbilical and scrotal herniæ were present. The owner being anxious that I should do something to reduce the herniæ, I applied the common elastic bandage, which I generally use, and have always found to succeed in cases of umbilical hernia. Owing, however, to the foal being grazing at the time, I found it impossible to apply any kind of pad or bandage to the scrotum, with any prospect of its remaining in the proper place for sufficient length of time to be beneficial. I therefore resolved to leave the enlargement of the scrotum without any treatment until after the weaning of the foal. I repeatedly saw the animal through the months of August and September, and was told that it often exhibited symptoms of abdominal pain at times, but which soon passed off. These paroxysms they ascribed to the effects of the bandage around the body, but I knew this could not be the cause, and gave it as my opinion that the pain arose from a portion of intestine becoming impacted and partially strangulated within the scrotum. I had an early opportunity of proving the correctness of this opinion, for on the 1st of November I was requested to see the foal, which was said to be suffering great pain, and on my visiting it I found all symptoms of enteritis present. On applying my hand to the scrotum, I ascertained that the swelling was quite hard, so large a quantity of intestine had passed into the cavity; but by careful manipulations with the fingers, and the exercise of patience, I succeeded in emptying the scrotum of its contents, and in the course of twenty minutes all the violent pain had subsided. I then had a bandage put on, and the scrotum well fomented with cold water several times in the day, which was continued for a considerable time. I also ordered that the animal should be supplied with soft or succulent food.

By January 1854, the umbilical hernia had completely disappeared, but the enlargement of the scrotum had gradually got worse, in spite of everything that was tried to

prevent it. From this time up to the month of April, the colt fell away in condition, and the enlargement of the scrotum had now become of such a size, that the owner had no hopes of the animal ever being of any use. As a last resource I determined to have him prepared for castration, and on the 19th of April I performed this operation. On having him cast, I found the enlargement on one side, involving both the scrotum and inside of the thigh, to be as large as a person's head. I immediately removed one testicle in the usual manner, and then applied the caustic clam; after which, with a great deal of trouble and continued manipulation, I succeeded in reducing the hernia on the other side, and getting hold of the testicle. I adopted the covered operation for the removal of the organ by cutting through the integuments only, and then dissecting them from the tunica vaginalis. This being done I put the clam on as high up as I could possibly get it, and made it perfectly secure, after which the colt was allowed to rise. Two days subsequently I had the clam taken from the side the hernia did not exist, but allowed the other to remain on until its detachment by the sloughing process, and which was effected in about ten days. By proper attention to feeding, and the selection of appropriate food, the colt in the course of about three weeks was perfectly well and cured of both herniæ. He is now 2 years old, and has been sold for a great sum of money, there being no signs of his ever having been ruptured.

In operating for scrotal hernia much advantage would be derived by an assistant introducing his hand into the rectum, and in this way endeavouring to draw the intestine out of the scrotum, but in the case of a young animal it might be attended with danger.

OSSIFICATION OF THE TESTICLES IN A YEAR-OLD COLT.

By the Same.

On the 17th April, 1855, I was requested to go a considerable distance to see a valuable year-old colt, of the farm breed, belonging to a gentleman, which was intended to be kept entire; but owing to an enlargement of one of the testicles having been observed to gradually take place, my opinion was asked concerning it. On examination of the parts, I found *both* testicles increased in size to such an

extent, that on standing behind the animal, the scrotum had the appearance of being as large as in a horse of four years old. Manipulation showed one of the testicles to be as hard as bone, and to have every indication of being adherent to the surrounding parts. The other felt quite loose and not nearly so hard. I told the owner he would never do for an entire horse, and as far as I was able to judge, both testicles were in a state of disease. On hearing this, he said that he would leave me to do as I thought proper, and at once I had the colt thrown for castration. On making an incision through the scrotum, I had to dissect completely around the testicle to free it from its adhesions; which being done, the caustic clam was put on in the usual way. The other testicle I removed more easily, although it was far larger than is usually found in so young an animal. Two days after the operation, I removed the clams, and the colt continued well ever after. On cutting into the testicles after their removal, I found one of them to be nearly all composed of a cartilaginous substance; and the other made up of bone, and so hard that no scalpel could penetrate it. On removing its covering, all the rest of its substance seemed to be thoroughly ossified together, and in its present dry state it resembles nothing but a solid piece of bone, of a size as large as a hen's egg.

ACCUMULATION OF INGESTA RESULTING IN DEATH.

By J. Brown, London.

On Monday, August 20th, 1855, I was sent for to see a brown gelding belonging to Messrs. H. & C., which was said to be griped. I found him suffering a great deal of abdominal pain, which led to his frequently lying down and quickly rising again. The pulse and respiration were undisturbed, except during the paroxysms. I gave him the usual anti-spasmodic draught, but which failed in affording relief; and therefore, after a short interval, I repeated it, when he became a little easier.

On the following morning he seemed free from pain, but as his alvine evacuations were hard and dry, I administered three drachms of aloes in solution, and threw up an enema, to which the bowels responded a little on the next day.

On Thursday, the bowels not being sufficiently acted on,

I repeated the aloetic draught. He now seemed tolerably easy, had a regular pulse, and showed a disposition to take food, but would drink but little.

On Friday and Saturday he purged, but the bowels did not appear to act so regularly as could be desired; I contented myself, however, by ordering him to be kept on a mash diet.

On the following Monday I was again summoned to see him, the messenger stating that he was taken much worse; I went directly, and found him wandering about the yard in great pain. He was bathed with perspiration, and was straining violently to void his fæces, but nothing came from him.

I passed my hand up the rectum and found it empty; I could, however, distinctly feel a hardened mass of fæculent matter in the large intestines. I felt satisfied that it was not a calculus, from its giving way under the pressure of my fingers. The general symptoms of the patient led me to believe that it was a hopeless case, and I reported this to the owners. He kept wandering about the yard for some time, and then went into the stable and fell down. He lay straining so violently as to force out the rectum, soon after which he died.

Autopsy.—Stomach normal in its structure; its contents fluid. Cæcum and colon much inflamed; and in addition, the cæcum was crammed with food, but which was in a pultaceous state. The distension of the viscus extended to its apex, which was equally filled.

The colon also contained a great deal of food, but there was no unpleasant smell from it, nor did it appear to have lain there long.

The rectum was ruptured; this I think was done with the violent straining.

All the rest of the viscera were healthy.

Remarks.—I have opened several horses that have died of strangulation or inflammation of the bowels, and have invariably found the colon in particular filled with hardened ingesta, differing essentially from this horse. I never saw a horse whose food was in the same pultaceous state that it was in this.

The patient was a very aged horse, and had been attacked in a similar manner about two months before, but which yielded to an aloetic draught and enemas.

Could it be that the muscular coat of the cæcum was unable to act on the contents of the bowel, from its distension; or was it from the different nature of its contents, these being usually the more fluid parts of the ingesta, that its loss of power was produced?

PARAPLEGIA IN A HORSE.

By Capt. W. Hickey, 15th Irr. Cavalry, Lahore.

On the 15th of August last, one of the troop-horses, an aged gelding, was brought to the sick lines with the following symptoms:—Profuse perspiration all over the body, flanks heaving, pulse hard and quick. As he walks his hind legs completely cross each other, and he turns with much difficulty. I learned from the trooper that the horse had refused his corn the day before; that his dung was hard and urine scanty, and that he had not been on any duty for a fortnight. Considering this to be a case of partial paralysis, of which disease I had lately two fatal cases, I treated it by opening *both* jugular veins, and did not pin either of them up till the pulse began to falter. I then gave a purge of—

Aloës, ʒvj;
Hydr. Chlorid., ʒj;

back-raked, and threw up copious injections of warm water. I afterwards shaved the hair off along the course of the spine, from the withers to the tail, and rubbed in a strong liniment of cantharides. The next day the physic operated freely, the blister had risen well; and the pulse also was less disturbed. I ordered some gruel to be given, and some fresh lucern grass, which he seemed to relish. On the following day, my assistant (a native) came and reported that the horse was worse: on going to see him I found him sitting on his haunches, and quite unable to rise on his hind legs. His pulse being soft and rather weak, I did not like to bleed again, but applied a fresh blister to his spine and gave a ball composed of,

Hydr. Chlorid. et Opii, āā ℈j;

which I repeated in the evening. On the next day he appeared to be about the same; I therefore repeated the balls morning and evening, and gave an enema. He took his gruel and ate some fresh-cut grass.

On the 19th, there being no change, I rubbed in some more liniment and gave the balls as before.

20th. No apparent improvement. Drank his gruel but refused the grass. Repeated the ball morning and evening.

21st. On visiting my patient I found him lying down in a natural position: the trooper said that during the night the horse had got up of his own accord,

and had shortly after lain down again. I made the horse get up, and which he did without much difficulty. Salivation had been freely produced. I had him led out, but he walked very "groggy." I now stopped the mercury, and gave daily a tonic composed of gentian, camphor, and ginger. My patient gradually got well, and his appetite returned. He is now perfectly recovered, and walks and trots as well as ever he did.

LETTER FROM AN EDINBURGH STUDENT.

To the Editors of 'The Veterinarian.'

Sirs,—As a pupil of the Edinburgh Veterinary College I have been interested in reading the account in this month's *Veterinarian* (October), of the proceedings at the Special Meeting of the Council, held Aug. 22d, 1855; but as I, with others of my fellow-students, do but imperfectly understand how the resolutions then passed may affect us, as Edinburgh pupils, I should feel greatly obliged if you or any of the advocates of the measure would kindly offer a few words in explanation.

One of yourselves (Prof. Morton), and Mr. Wilkinson, are reported to have spoken of a union between the two colleges as "desirable for ulterior purposes," and as "a point of so much importance that every other consideration ought to be secondary to it." Now, as one likely to be affected by this union, I am anxious to learn to what extent its importance and desirability exist.

Union, as exemplified in the fable of the bundle of sticks, we know is strength; but a union may be so constituted as to lead to the hurt or destruction of one or all of the parties concerned in it. I trust, however, that the union, if already completed, of the two schools, may give "strength" to the veterinary profession and be a means of furthering its best interests. If it be indeed a spring from which advantages important enough to have warranted its formation are likely to flow, let no invidious, unfriendly, and "I-am-better-than-thou" feelings arise, to place obstacles in the way of its 'vantage-bringing streams.

Hoping you will not consider these inquiries unworthy of notice, and wishing you every success as editors and teachers of veterinary science,

I remain, gentlemen,
Your obedient servant,
"Live and Let Live."

CONTEMPORARY PROGRESS OF VETERINARY SCIENCE AND ART.

By John Gamgee, M.R.C.V.S.,
Lecturer on Veterinary Medicine and Surgery, London.

(*Continued from p.* 647.)

Penetrating wound of the abdomen in the horse with hernia and laceration of intestine; recovery.—On the 21st of last January, M. Guilhem, V. S. at Tarsac, at ten o'clock at night, was called to a horse that, having been gored by an ox, had received a penetrating wound on the left side of the abdomen, about five inches from the umbilicus; a portion of the large intestine forming a swelling about the size of a child's head protruded, and was the seat of a large rend. Few hopes of recovery were entertained, but the animal was cast, turned on its back; the intestine, slightly red, was cleaned out, as it still contained a handful of ingesta, and was washed with cold water. The lips of the wound were sewn together to the extent of about $3\frac{1}{2}$ inches; a second suture was made through the walls of the abdomen, and a third through the skin. The animal was allowed to rise, a pledget of tow covered by a doubled-up cloth and secured by a surcingle was the only dressing applied. The horse was bled: it was requested that he should be kept quiet, at a mild temperature, and that he should be allowed sloppy mash to drink.

22d.—No fever; considerable œdema round the wound extending from scrotum to sternum; a whitish liquid exuded drop by drop from the wound, and the horse had not defecated or moved about since the operation. Same treatment adopted, with the addition of warm clysters.

24th.—Same condition: the horse eats his mash greedily; he voids urine, and defecates without difficulty.

26th.—Recovery seems certain at present. The horse moves about; tries to pick up straw from his litter; suppuration has set in. The mash is increased in quantity.

February 1st.—There has been daily progress towards a cure; the ligatures of the skin and abdominal wounds have dropped.

8th.—The wound suppurates freely; granulations are healthily developed, and the œdema has in a great measure disappeared.

23d.—M. Guilhem was told that it was eight days the animal laid down as in health, and was, in fact, completely

restored; the wound has ceased to suppurate, and all swelling has subsided.—*Journ. des Vét. du Midi*, January, 1855.

Penetrating wound of the abdomen in a mule three months old; recovery.—M. Nicoleau, a fourth year's student of the Toulouse School, was requested on the 10th of July to attend a mule that had received the above injury from the horn of an ox. There was an irregularly lacerated, contused, and penetrating wound, about from four to five inches long, and one and a half broad. Superiorly, the costal cartilages were laid bare; inferiorly, there was complete laceration of the abdominal parietes. The hernial aperture about from three to four inches in circumference, lets through from sixteen to twenty inches of small intestine. There is no constitutional disturbance; the intestine is red, but it had been protected and supported by a cloth till M. Nicoleau could arrive.

An operation is immediately resorted to; the mule is quietly cast on a thick bed of straw, the gut is methodically and readily returned in the abdomen; the wound is pared round to get rid of the injured parts; slight hemorrhage supervenes. The muscles are brought together by a glover's suture. A graduated compress is placed over them imbibed with alcohol and water; six interrupted sutures, each of which, separated from the wound by a pledget of lint, are made to unite the cutaneous wound, and the whole is supported by a bandage round the abdomen. The animal with difficulty rises and sustains the erect posture, but he is actively whisked over, and this shakes him and sets him firm on his legs again. The only treatment adopted consists in emollient clysters, frequent cold lotions, and total abstinence from food.

July 14th.—Ever since the operation the animal has been lively and well, has defecated as in a state of health, and no signs of fever have manifested themselves. There is swelling of the wound: the animal is cast, the inferior commissure of the lips of the wound is slit up for the free exit of pus. The wound is dressed with Egyptiacum,* and the cold lotions are discontinued.

17th.—Wound very healthy, granulations fill the chasm,

* Egyptiacum, or Unguentum Egyptiacum (*oxymel cuivreux*) of the French, is the "Mellitum de Acetate Cupri" or *oxymel of copper*. It consists of

Diacetate of copper, lb. j.
Vinegar, lb. j.
Honey, lb. ij.

Mix, and place in an earthen pot three times the size of the mixture; boil

and the injured tissues are sloughing. The granulations are slightly cauterized with Egyptiacum, and camphorated spirit is applied to the other parts of the wound. Two or three of the interrupted sutures having sloughed out, have been replaced.

20th.—The wound granulates rapidly, the surface is red and smooth, the pus laudable. The animal has torn away most of the dressing, owing to the pruritus which has existed round the wound. A cradle is put on his neck.

August 6th.—The wound has been dressed with a little tincture of aloes for the last eight days, and the cicatrization is now complete, a radical cure having been effected.—*Journ. des Vét. du Midi*, August and September, 1855.

In the July number of the *Veterinarian* for this year, my friend Mr. Kettle reports a case very similar to the one mentioned first in this article, and in the October number is a very interesting one by Mr. Newton. From the complete absence of any British systematic treatise of veterinary surgery to guide the young practitioner in the treatment of special wounds of any kind, I am inclined to show up the principal features of the cases quoted, that the lesson they teach us may be impressive, and of really practical worth.

Long ago did Travers* write in a most able manner on the treatment of injuries of the intestines in man and the lower animals, furnishing us with all the requisite knowledge; but this is another of those innumerable instances in which veterinarians have searched not and remained uninformed.

An important fact clearly established is that the peritoneum may be severely injured without being dangerously inflamed. It must, however, ever be borne in mind that if any foreign agent, or even air, enter the cavity of the abdomen, the danger is much increased. In the dog, lesions of the peritoneum are seldom fatal; but I have observed, in spaying bitches, that if even only a portion of omentum slips between the lips of the wound, the process of repair is interfered with, and peritonitis results. It is undoubted that in the ox there is much less susceptibility to peritonitis than in the horse; and when, in performing a series of experiments on pyæmia, I had to open the abdomen to inject pus into

and stir without ceasing, till the preparation has assumed a fine red colour and has acquired the consistence of an ointment.

The red colour of this preparation is due to the reduction of the acetate into the protoxide of copper, by the sugar of the honey. This Egyptiacum is in frequent use as a slight escharotic.

* 'An Inquiry into the process of Nature in repairing Injuries of the Intestines,' by Benjamin Travers; London, 1812.

the mesenteric veins, though the operation was performed rapidly and neatly, the horse standing, at every inspiration air would very forcibly rush into the peritoneum, unless the wound was most strictly guarded by the hands of an assistant; this was no easy matter, and was sufficient to induce an invariably fatal peritonitis, notwithstanding recourse being had to the most energetic antiphlogistic treatment. It is of immense value, however, to know that in ordinary punctured wounds of the abdomen, in the horse at least, the traumatic peritonitis is very limited and of a plastic character, simply sufficient to favour the cicatrization of the wounds. It results from my experiments, that exclusion of air from the peritoneum is strictly to be regarded, for when admitted, especially if cold, the consequences may be serious.

What occurs in penetrating wounds of the abdomen with visceral lesions, but not protrusion? Are the contents of the punctured bowel poured into the abdomen? According to Petit* the "effusion is resisted during life by the mutual contraction of the muscles and intestines, and that, consequently, when this resistance has ceased, or after death, effusion readily takes place." Two experiments on the horse, by Mr. Travers, prove that feculent effusion does not occur. In one instance, the small intestines, cæcum, and mesentery, were wounded in several places. In a second, the perforations were—one through the ilium, two through its mesentery, three in the colon and rectum, and several through the mesocolon, still not a particle of feculent matter was effused, though the animal survived sixteen hours. Effusion of fecal matter has, however, been witnessed in man when the bowels have been ruptured and the abdominal walls unabraded; it usually follows ulceration of gut. There need not then be great apprehension of intestinal effusion in penetrating abdominal wounds.

"If, in a wound of the stomach," says John Bell,† "the food could get easily out by that wound, the stomach would unload itself that way—there could be no vomiting, the patient must die; but so regular and continual is this pressure, that the instant a man is wounded in the stomach he vomits, he continues vomiting for many days, while not one particle escapes into the cavity of the abdomen. The outward wound is commonly opposite to that of the stomach, and by that passage some part of the food comes out; but

* 'Suite de l'Essai sur les Epanchemens,' par feu M. Petit le fils; tom. ii. See Travers, loc. cit., page 14.

† 'Discourses on the Nature and Cure of Wounds,' by John Bell; Edinburgh, 1812.

when any accident removes the inward wound of the stomach from the outward wound, the abdominal muscles press upon the stomach, and follow it so closely, that if there be not a mere laceration extremely wide, this pressure closes the hole, keeps the food in, enables the patient to vomit, and not a particle, even of jellies or soups, is ever lost, or goes out into the cavity of the belly." Is not this precisely what we witness in cases of ruptured stomach in the horse?

What are the appearances exhibited by wounds of the intestine, depending upon the action of the bowel? Haller and Travers have both described them. Travers* studied them on dogs, and he found that—"if a gut be punctured, the elasticity of the peritoneum and the contraction of the muscular fibres open the wound, and the villous or mucous coat forms a sort of hernial protrusion, and obliterates the aperture. If an incised wound be made, the edges are drawn asunder and reverted, so that the mucous coat is elevated in the form of a fleshy lip. If the section be transverse, the lip is broad and bulbous, and acquires tumefaction and redness from the contraction of the circular fibres behind it, which produces, relatively to the everted portion, the appearance of a cervix. If the incision is according to the length of the cylinder, the lip is narrow, and the contraction of the adjacent longitudinal, resisting that of the circular fibres, gives the orifice an oval form. This eversion and contraction is produced by that series of motions which constitutes the peristaltic action of the intestines."

Having thus shown that we have not much to fear from peritonitis and effusion of fecal matter, and having described the various kinds of wounds of the intestine, we are now ready to ask—How shall the wounded intestine be treated? The human surgeons have had more experience in these operations than veterinarians. The expert assassin stabs his man in the belly because he knows or believes it is the surest way to kill him. We must profit, then, by the experience of surgeons, and by the experiments they have purposely performed on animals. Guilhem has not informed us how he brought the lips of the wounds together. All we know is that he used sutures. Mr. Kettle used the intermittent sutures. We must ever remember, in performing this operation, that the sutures have to come away per anum, and not that they are to be left long to act as setons and induce peritonitis. The experiments of Duverger, Astley Cooper, Dr. Thomson, and Dr. Smith, are full of information in point.

* Travers, loc. cit., page 85.

"Mr. Cooper repeated the experiments of Duverger, who had succeeded in uniting by suture the divided intestine of a dog, including in it a portion of the trachea of a calf. In place of the uninterrupted suture three distinct stitches were inserted. On the sixteenth day the animal was killed, and the union was complete.

"He then made the experiment without including the foreign substance. On the second day the dog took food, and on the fifth the ligatures were drawn away, after which he suffered nothing from the experiments. In both these cases, it should be observed, the intestine rested against the wound, and was confined there, the ligatures depending externally.*

"To Dr. Thomson, Regius Professor of Military Surgery at Edinburgh, we are indebted for the following curious and important additions to our knowledge of this subject. After the transverse section of the small intestine of a dog, five uninterrupted stitches were applied at equal intervals, the ligatures cut close, and the external wound sewn. On the tenth day the animal was killed. A portion of the intestine, more thick and vascular than usual, adhered to the wound of the parietes, but the line of division was imperceptible on the outside of the intestine. On slitting it open, it was discovered that three of the stitches had disappeared, but the place of their former attachment could be distinctly perceived on the inner surface of the bowel. Two threads were still adhering to the wound. Finding that the thread had passed from the outer to the inner side of the intestine, Dr. Thomson repeated the experiment, allowing the animal which was the subject of it to survive six weeks. Upon inspection no distinct mark of division appeared externally, but on inverting a portion of the gut, two stitches were found adhering to its inner surface. The remainder had been discharged, but the traces of them were yet visible. The portions of the gut included in the remaining ligatures were obviously vascular, so that it is difficult to say when the ligatures might have separated."†

As Mr. Travers says, at page 131, it has been found sufficient for the purpose of union to include only the peritoneal covering of the intestine in the suture, a proof that provided the several extremities are fairly brought into contact, the event, under any circumstances, will be uniform.

The uninterrupted suture has been substituted for stitches, and the principles to guide us in the operation are clearly set forth in a most interesting case, occurring in a woman, published in the 'Lancet' for 1851, in which my friend Mr. Lister operated. The wound in the abdominal walls had to be dilated to get at the injured gut, and two wounds which had been inflicted were neatly stitched up by Mr. Lister. He used a fine needle and silk, great care being taken to include in the stitches little except the peritoneal covering of the gut, and to invert the edges so that the serous surfaces were brought into apposition. The stitches were close to one another, and the suture was of the continuous kind. After the wounds had thus been closed, the silk was knotted, the ends cut off close to the knots, and the wounded intestine lightly returned.

* 'Cooper on Hernia;' part 1, ch. ii.
* Travers, loc. cit., pp. 123—126.

Mr. Kettle applied, in his case, "interrupted sutures of fine white silk." It were important to know if any special precaution was taken by Mr. Kettle, and whether in saying "the sutures were now removed" he refers also to the stitches in the gut.

The wound in the abdominal wall, in these instances, has been variously handled by practitioners. Mr. Kettle used the metallic sutures. I have found, in performing the experiments referred to in the back pages, that the so-called "quilled suture," using *sticks* instead of *quills*, is the most effectual and safe to bring the lips of the wound in contact throughout, and ensuring that the sutures do not prematurely slough out.

Lastly,—what should be the after treatment in these cases of eventration and wounded intestine? It is questionable whether a purge is always indicated; clysters, I believe, invariably are. Mr. Kettle is no doubt right in his observations on bloodletting, and I thus think M. Guilhem might have avoided it. Nicoleau's treatment is as good as can be pursued. Mr. Newton's treatment is also much to be commended. Wine or any stimulant sometimes causes an animal to rally, if labouring under the shock of an injury or operation; but great judgment is required not to step over the mark. In man, Mr. Erichsen recommends solid opium to be administered to allay peristaltic action, and thus diminish the chances of extravasation. The bowels to be relieved by enemata.

COMPLETE DISLOCATION AND FRACTURE OF THE THIRD CERVICAL VERTEBRA IN A HORSE.—The dead body of a mare, a trooper, 12 years old, was carried into the veterinary school of Bruxelles on the 20th April last. Whilst in a fast trot, the mare had fallen violently on to her head, and had died instantaneously. She had always been very apt to stumble, and it appeared that the case was one of violent concussion to the head.

Post-mortem examination five hours after death.—The animal has been lying on her left side; the abdomen is very tense; the visible mucous membranes gorged with blood and of a bluish colour; the recti muscles of the abdomen and the panniculus are discoloured. These were evidently not cadaveric lesions. A good deal of colourless serosity is found in the abdomen; the blood is very black. No marked lesion of the alimentary canal, nevertheless there is punctiform congestion, the villi being gorged with blood producing dark spots here and there. This fact, says M. Husson, though so slight, is of very great importance, as it constitutes a characteristic

lesion in all cases of asphyxia. Lungs and heart perfectly healthy. Lungs both slightly gorged with very dark blood.

On the forehead is a very large circular ecchymosis, about one third of an inch in diameter.

The brain is intact and normal.

At the neck was an unnatural prominence, corresponding to the articulation between the second and third cervical vertebræ; the muscles in this region are ruptured, and there is considerable extravasation of blood. On carefully dissecting this part, the superior common vertebral ligament is found ruptured; the ligamentous capsule between the oblique processes is torn, and such is the case also with the inter-annular ligament. In fact, all the connecting bonds round this articulation had given way with the exception of the inferior common cervical ligament, which was considerably relaxed, and the ligamentum nuchæ, which was forcibly extended. The transverse processes were fractured; some detached fragments of bone had remained adherent to the dentator by a portion of the ligament which had remained intact. There was considerable displacement, and the articular surfaces of the oblique processes were at a distance of one third of an inch from each other. The neck was twisted downwards a little to the right.

Having discovered these serious lesions, Husson was no more astonished at the death of the animal. The vertebral canal was displaced; the spinal cord had been compressed; evidently there had occurred instantaneous paralysis, as well as asphyxia dependent on the injury being above the origin of the phrenic nerves.—*Ann. de Méd. Vét. Bruxelles*, May, 1855.

16, Upper Woburn Place.

(*To be continued.*)

Extracts from British and Foreign Journals.

ON THE VARIOUS BREEDS OF SHEEP IN GREAT BRITAIN, ESPECIALLY WITH REFERENCE TO THE CHARACTER AND VALUE OF THEIR WOOL.

By John Wilson, Professor of Agriculture in the University of Edinburgh.

(*Continued from p.* 665.)

Short-woolled Breeds.

South Downs.—The name of this breed is taken from the range of Chalk Hills which, running in an east and westerly direction through the southern portions of the counties of Kent, Sussex, Hampshire, and Dorsetshire, are known generally as the "South Downs." Their elevation is nowhere very great; their breadth varies from one mile to six or eight; and their surface is firm and dry, and covered with a close, short, and sweet herbage. On the south side they dip gradually towards the sea; on the north they are bounded by the rich lands of the Lower Chalk, or of the Wealden formations. The entire district is admirably adapted for the successful development of sheep-farming, both in the wide range and nutritious vegetation of the hill pastures and in the climate; while the proximity to well-cultivated lands stretching along their base insures an abundance of keep, so necessary to sustain the condition and the character of our improved breeds. The South Downs of the present day present probably as marked an improvement upon the original breed as that exhibited by the Leicesters or any other breed. To the late Mr. Ellman, of Glynde, we are indebted for the high estimation in which they are now generally held. When he commenced his experiments in breeding he found the sheep of small size and far from possessing good points; being long and thin in the neck; narrow in the fore-quarters; high on the shoulders, low behind, yet high on the loins, sharp on the back; the ribs flat, drooping behind, with the tail set very low; good in the leg, though somewhat coarse in the bone. By a careful and unremitting attention during a series of years to the defective points in the animal, and a judicious selection of his breeding flock, his progressive improvements were at length acknowledged far and wide; and he closed a

useful and honorable career of some fifty years with the satisfactory conviction that he had obtained for his favorite breed a reputation and character which would secure them a place as the first of our short-woolled sheep. The South Down sheep of the present day are without horns, and with dark brown faces and legs; the size and weight have been increased; the fore quarters improved in width and depth; the back and loins have become broader and the ribs more curved, so as to form a straight and level back; the hind quarters are square and full, the tail well set on, and the limbs shorter and finer in the bone. These results are due to the great and constant care which has been bestowed on the breed by Ellman and his cotemporaries, as well as by his successors, whose flocks fully sustain the character of the improved breed. The sheep, though fine in form and symmetrical in appearance, are very hardy, keeping up their condition on moderate pastures, and readily adapting themselves to the different districts and system of farming in which they are now met with. They are very docile, and thrive well even when folded on the artificial pastures of an arable farm.* Their disposition to fatten enables them to be brought into the market at twelve and fifteen months old, when they average 80 lbs. each. At two years old they will weigh from 100 to 120 lbs. each. The meat is of fine quality, and always commands the highest price in the market. The ewes are very prolific, and are excellent mothers, commonly rearing 120 to 130 lambs to the 100 ewes. The fleece, which closely covers the body, produces the most valuable of our native wools. It is short in the staple, fine and curling, with spiral ends, and is used for carding purposes generally.

This is one of the breeds in which the breeding of rams, both for sale and for hire, forms a peculiar feature, as indicative of the value generally assigned to the breed, both for its own intrinsic qualities and for the advantages it offers for crossing with other breeds.

Hampshire Downs.—This rapidly increasing breed of sheep appears to be the result of a recent cross between the pure South Down and the old horned white face sheep of Hampshire and Wiltshire, by which the hardworking, though fine quality of the former is combined with the superior size and constitution of the latter. The breed was commenced at the early part of the present century; and by a system of judicious crossing now possesses the leading characters of the

* The farm of Mr. Jonas Webb, of Babraham, is mostly under tillage cultivation.

two parent breeds. In some of the best-farmed districts of Wiltshire, Hampshire, and Berkshire, they have gradually displaced the South Downs, and have in themselves afforded another distinct breed for crossing with the long-woolled sheep. Their leading characteristics are, as compared with the South Down, an increased size, equal maturity, and a hardier constitution. The face and head are larger and coarser in their character; the frame is heavier throughout; the carcase is long, roomy, though less symmetrical than the South Down, and the wool of a coarser though longer staple. Their fattening propensity is scarcely equal to that of the South Down. These points have all received great attention lately from the breeders; and the *improved* Hampshire Down now possesses, both in shape, qualitity of wool, aptitude to fatten, and early maturity, all the qualities for which the pure South Down has been so long and so justly celebrated. The lambs are usually dropped early and fed for the markets as lamb, or kept until the following spring, when, if well fed, they weigh from 80 to 100 lbs. and command a good market.

The Hampshire Downs are used like the South Downs, for the purpose of crossing with other breeds; being hardier in constitution they are perhaps better calculated for the northern districts, where the climate is sometimes very severe.

Norfolk Down.—This is one of the rapidly declining breeds, having been gradually forced to give way to the superior merits of the South Down. It is now very rarely to be met, with, and is confined entirely to one or two flocks in Norfolk and in Suffolk. At the beginning of the present century when the sandy wastes of the Eastern Counties were being brought into improved tillage cultivation, the hardy nature and constitution of the Norfolk Downs rendered them very suitable for a country where they had to travel daily backwards and forwards from a distant fold, and where the herbage was both scant and inferior in quality. They are horned, and had black faces and legs; rather low in the shoulders and neck, and generally deficient in those points which we are accustomed to look for in our improved breeds. At the same time they were good doers; fattened early, even on poor keep, and produced excellent mutton, with a large proportion of loose fat, which even now renders them favorites with the butcher when they are met with. As the cultivation of those counties advanced, the comparative merits of the district breed and of the South Downs became more decided; and in some trials made on an extensive scale by the Earl of Albemarle and others, it was found that the latter consumed a smaller quantity of food for their size,

and gained from that food a superior weight; that being less restless than the Norfolk, they destroyed less by running over it; that the ewes produced a greater proportion of lambs; that the casualties in lambing were less; and that the produce of wool was heavier in quantity and higher in market value. These points, clearly demonstrated, told their tale, and now a pure bred Norfolk Down is but rarely met with.

The cross breed between the Norfolk and the South Down is commonly met with in the Eastern Counties. They are lighter than the South Downs, with very dark faces and legs, and small curved horns.

Shropshire Downs.—In our early records of sheep-farming Shropshire is described as possessing a peculiar and distinct variety of sheep, to which the name of "Morfe Common" sheep was given, from the locality to which the breed was principally confined. This is a tract of land on the borders of the Severn, near Bridgenorth, which, originally of vast area, has of late been considerably diminished in extent under the influence of cultivation and the general improved condition of the country. In 1792, when the Bristol Wool Society procured as much information as possible regarding sheep in England, they reported as follows in reference to the Morfe Common breed:—"On Morfe Common, near Bridgenorth, which contains about 600,000 acres, there are about 10,000 sheep kept during the summer months, which produce wool of superior quality. They are considered a native breed—are black-faced or brown, or a spotted faced, horned sheep, little subject either to rot or scab—weighing, the wethers from 11 lb. to 14 lb., and the ewes from 9 lb. to 11 lb. per quarter, after being fed with clover and turnips; and clipping nearly 2 lb. per fleece, exclusive of the breeching, which may be taken at one seventh or one eighth part of the whole. The fine wool sells at 2*s.* per lb., and the breeching at 1*s.* per lb., making the produce of the fleece about 3*s.* 2*d.* It is sold to Yorkshire." This appears to have been the original stock from which the present breed of Shropshire Downs has sprung. As the country advanced, and the breeds became valuable for their carcases as well as for their wool, the Morfe Common sheep were crossed with other breeds, but more particularly with the long-woolled Leicesters and Cotswolds, or the short-woolled South Downs. The admixture of such different blood has produced a corresponding variation in the characters of the present breed of Shropshire Downs, and has tended materially to sustain the hesitation which still exists to allow them a place as a distinct breed. Where,

however, the original cross was with the South Down, and the breed has been continued unmixed with the long-woolled sheep, they present the characteristics of a short-woolled breed, and as such are already recognised in the Yorkshire and other markets. At the Gloucester Meeting of the Royal Agricultural Society (1853) the breed was well represented, and a large number exhibited, which were thus referred to in the Report:—"The new class of Shropshire Downs was very successful, and it is to be hoped that the Society will recognise them as a distinct breed." These sheep are without horns, with faces and legs of a grey or spotted grey colour; the neck is thick, with excellent scrag: the head well shaped rather small than large, with ears well set on; breast broad and deep, back straight, with good carcase; hind quarters hardly so wide as the South Down, and the legs clean with stronger bone. They are very hardy, thrive well on moderate keep, and are readily prepared for market as tegs, weighing on the average 80 lbs. to 100 lbs. each. The meat is of excellent quality, and commands the best prices. The ewes are prolific and are good mothers. The fleece, which is heavier than the South Down, is longer and more glossy in the staple than the other short-wools, and weighs on the average 7 lbs.—*Journal of the Royal Agricultural Society.*

(*To be continued.*)

WHY HAVE WE SO FEW AGRICULTURAL COLLEGES IN ENGLAND?

[A WRITER in the *Farmer's Magazine*, who signs himself "An Old Norfolk Farmer," asks the above question. We annex the greater part of his communication, as we consider it a sign of the times in which we live, and that it behoves the members of our profession to be on the alert lest their kibes be trod upon.]

There is no question now of the connection of agriculture with physical science, and that almost, if not quite, all the operations of that art are based upon scientific principles, whether the practitioner be aware of it or not. In the implements he uses, the power applied to them, the work he performs with them; in the selection, preparation, and application of his manures; in the selection of his seed corn; in the treatment of his cattle, and mode of feeding them, with a thousand other things which it would tire your readers to enumerate, science is the foundation upon which they all rest. And it is through the knowledge of the prin-

ciples by which they are governed that we are to ascribe those extraordinary results which of late have been produced by scientific farming. It is, I say, to the knowledge diffused by a Liebig, a Kane, a Davy, and other men of mark—who have dived into the secrets of nature, and turned them, in a manner, inside out—that agriculture has attained that eminence we now witness. It may be fairly questioned whether there be any branch of science which is not, in one way or other, beneficially applicable to agriculture.

This question is much better understood than formerly, even by the less enlightened farmers—those of the old school, if there be any such left. They begin to see that those of their neighbours who have paid the most attention to it produce the best heads of cattle, and the heaviest crops of corn, hay, and roots. I therefore have a right to presume that the mind of the agricultural public is prepared for taking a decided step in this matter, by being convinced of its importance, and that they only require some leading man in their own community to set them going. With this conviction, I shall endeavour to point out some of those desiderata which a course of agricultural academic education should embrace.

I take it for granted that the pupil who would enter the college will be previously well versed in the usual branches of a common English education, with a knowledge of the rudiments of the mathematics and mensuration, both of which will be essential to the practical application of most of the other sciences. The academical course of a student, in the proposed college, ought to embrace geology, mechanics, hydraulics, pneumatics, botany, veterinary medicine and surgery, and, above all, chemistry, which should constitute the alpha and omega of the student's acquirements. The practical use of the steam-engine should be combined with a knowledge of all its parts, so as to be able to superintend its use upon a farm, if necessary. Certainly the time is fast approaching when the steam of the boiler will supersede the sweat of the horse or man; when the labour of a farm will be performed by mechanical, instead of human or brute power; and when the efforts of these latter, relieved from the severest and most onerous of their toil, will be profitably employed, under scientific direction, in imparting, in various ways, additional fertility to the lands now cultivated, and in subduing the sterility of those hitherto considered unprofitable.

But let us look a little more closely into these proposed scientific acquisitions of a young farmer, and see how they bear upon his future profession. For this purpose I shall

take them *seriatim*, as I have casually set them down; and to begin with geology, or the doctrine of the earth, and an acquaintance with its stratical structure. This surely cannot be considered a useless study to the farmer, whose whole business relates to, and whose whole profit is derived from, the earth. To know the nature of the soils of a farm, both above and beneath—to be acquainted with their names, properties, and compositions, is, in connection with chemistry, to become acquainted with the most beneficial mode of using or treating them. I shall give one instance in proof of the utility of such knowledge.

In the great limestone plain of Ireland, extending over some of the most fertile portions of that fertile country, the produce of wheat had fallen off since the famine (1846), from twenty barrels (400 stones) per acre to from four to eight barrels. Various causes were assigned for this enormous deficiency. It was ascribed to the loss of the potato, the wearing out of the soil, &c., and even to more occult and moral causes, which it is needless to repeat. Upon a chemical analysis, however, of the surface soil at different points of this plain, by Sir Robert Kane, Professor Davy, and other scientific men, it was found that notwithstanding the abundance of limestone in the sub-strata, not a particle of lime could be detected in the upper soil; consequently, the discontinuance of the use of lime, which took place after the famine, deprived the land of those substances without which wheat cannot be profitably cultivated.

A knowledge of mechanics embraces that of the principles on which all the operations of a farm are conducted; and I have no hesitation in saying that, if such knowledge were generally diffused amongst the agriculturists, one third of the labour of the farm might be saved in many districts of this country, and a much larger produce obtained. This branch of science is closely allied with the two following—namely, pneumatics, or the doctrine of the air; and hydraulics, or the science of the conveyance of water—this latter so essential in the irrigation of land, as well as in draining it. What do we not owe to the machinists of the present day for the vast improvements derived from the mechanical science they have brought to bear upon the subject of the construction of machinery of every description used in husbandry? What fortunes and what mental efforts have been spent in the process between the first conception of an instrument—say the reaping machine, for instance—and its arrival at perfection! And yet, when the incipient idea is started, the projector is either too often ridiculed as

a visionary, or condemned as a schemer; or, more frequently, some other person improves upon his plan, remedies his defects, and ultimately robs him of the fruit of his talents and the profit of his outlay.

The advantage of a knowledge of hydraulics I need not descant upon. The scientific application of water upon, or its abstraction (in excess) by draining from, the land is too palpable to require enforcing. Perhaps more labour and expense has been bestowed upon draining and irrigation the last twenty years than for a century previous; and we anticipate the time when all the bogs and marshes of this country will be freed from surface water, by the passing of an act for general arterial draining. The rivers of England, in fact, form the principal obstruction to the universal relief of the land from those physical blemishes which meet us in different parts of the kingdom in the shape of shaking bogs and flooded marshes. When this desideratum—arterial drainage—is carried into effect by a legislative enactment, as in Ireland, the local drainage of the land will be an easy task.

"The science of pneumatics includes, or is closely allied to, meteorology; and both are essentially necessary in the proper education of an agriculturist. The thermometer and barometer are to be found in most farm-houses, but a scientific acquaintance with their use is not generally possessed; and although experience and observation of the various atmospheric phenomena have given the farmer—ignorant otherwise of science—a portion of knowledge useful to him in the various operations of husbandry, it will surely be advantageous to him to become acquainted with the principles upon which those phenomena proceed or are founded. It is true the science of meteorology is far from having arrived at any degree of perfection, and, indeed, may yet be considered to be in its infancy; yet much light has been thrown upon it by late investigators, and many of the phenomena have been more clearly defined, classed, and explained, so as to bring out their characteristics and uses in the economy of nature, and thus render a more intimate acquaintance with them subservient to the benefit of man; especially the agriculturist, who depends so much upon atmospheric agency in the prosecution of his farming operations.

Is it needful for me to point out the benefits to a farmer of a knowledge of botany—that science which embraces the history of the most beautiful and useful of the physical creation? Would it be of no use to a farmer to know the nature, habits, uses, mode of growth, and propagation to the

best advantage, of the plants from which he is to derive his profit, or the characteristics of those which he considers it necessary to destroy? In the arrangements of the proposed College I should include a botanical garden of the first order, as an essential adjunct, with a professor attached, and that the students be thoroughly grounded in the principles of this science.

A knowledge of the veterinary art, and surgery, with an insight into comparative anatomy, would be a *sine qua non* in our institutions. How many valuable horses and cattle of every description are annually lost, through the ignorance of the farmers even of the common operation of breeding, and the distance they have to send for a veterinary surgeon! Surely a general knowledge of pathology, or of the symptoms, causes, and cure of the diseases of cattle, is an acquisition of the first importance to one who has hundreds of lives and pounds sterling at stake, and who perhaps lives far from medical aid when required.

Our last article is chemistry; and as I have on former occasions endeavoured to urge the study of this branch of science upon the agriculturists, I shall not now enlarge upon it, further than to say that it is impossible to be a *good* farmer —by which I mean one who makes the most of his land— without some knowledge of it. The whole profit of a farmer, in fact, depends upon those chemical operations which Nature herself conducts, and who demands of us only an intelligent use of those means she has put into our hands to assist those operations. But we cannot make an *intelligent* use of those means unless we are acquainted with the laws upon which the operations of Nature are conducted, so far as relates to the sustentation of her productions; and those laws can only be ascertained by chemical investigation.

I have thus briefly re-opened this interesting subject, which I consider to be of vital importance to the interests of the country, if these are at all connected with the elevation of one of its most important sources of wealth from a condition of general ignorance and prejudice, as an employment, to the dignity of a scientific and an enlightened profession. Hitherto science has pursued an *up-stream course*, commencing at consumption, and labouring her passage through commerce and manufacture with steady progress, until, arriving at perfection, she has met with a barrier of stolid indifference and self-conceited prejudice, to surmount which has required the efforts, for half a century, of the most enlightened and scientific men of the age. Their unwearied perseverance has at length been crowned with signal success, and agricul-

ture is now placed by them upon a pedestal worthy of the position originally assigned to it by the will of Providence and the laws of Nature.

The impetus having been thus given, and the momentum, I hope, attained, it remains but for those who possess the power and the will to send it forward, and raise agriculture to a science in reality, by the establishment of those educational institutions, by which the next generation of farmers may be initiated into the mysteries of Nature relating to the earth and its productions.

THE HORSE CHESTNUT (*Osculus hippocastanum*).

Now that the fruit of this tree is ripening, or ripe, falling, and encumbering the ground where it falls, it may be asked, can it not be turned to some useful account.

What is the composition of the nut? From the partial examination I have made of it, it appears to consist principally of three ingredients, viz. of starch, an albuminous substance, and a bitter principle; the former two in large proportion, the last in a greatly smaller; and on the whole to resemble greatly, both in these its ingredients and its qualities, the common acorn. This being the case, *a priori*, it might be assumed, that it would prove nutritious, and that it might with advantage be given to such animals as would not refuse to eat it.

Such experience as has come to my knowledge, is in accordance with this conclusion. I have somewhere read that in the state of powder it is given in Turkey to horses, as a corrective of "broken wind;" and that the name of horse-chestnut is hence derived.

In Switzerland it is stated that it is given to sheep, and is held to be very wholesome and nutritious for them.

The trials I have made of it are too limited to allow me to speak of it with any confidence from my own observation of its effects. The only animal I have given it to has been the pig. Even in the shell it was devoured with avidity, and when thrown amongst the straw of the pig's bed, was hunted out and eaten with evident relish.

These few remarks are made with the hope of calling attention to the subject, and of bringing into use,—if I am correct in the opinion I have formed,—a nut in many places so abundant; and which as the tree is a favorite ornamental one, might by extension of planting, without sacrifice of beauty of effect, be obtained in an almost unlimited quantity. —*J. D., Leskelh How*, October 24, 1855.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Hippopathology.—Vol. I, *Second Edition.*
Vol. II, Part II; *New Edition.*
By W. Percivall, M.R.C.S., and late Veterinary Surgeon to the First Life Guards.

We did not notice these works at the time they were announced as being published, from a conviction that every one to whom the titles are familiar would hasten to possess himself of them.

The name of Percivall will ever be held in the highest estimation by the members of our profession, as well as by every true lover of the horse. His literary labours were great, and they manifest much industry and observation. They are equally as varied, and show that his mind was always intent on promoting the onward progress of Veterinary Science; while his educational acquirements gave to his productions a *tone* that will ever stamp them as worthy a place in the library of every scientific and professional man.

It is not our intention, nor is there the least occasion for it, to compare the present with the antecedent volumes. It will be quite sufficient to say that the matter thereof has been most carefully revised, and such added as brings the subject up to a level with the state of veterinary science at the present day.

The grave has now closed over the mortal remains of our author; but that which he has left behind will not only be a treasured and valuable legacy to his family, but will extend his fame down to generations yet to come.

THE VETERINARIAN, DECEMBER 1, 1855.

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

ADULTERATION OF FOOD AND DRUGS.

OUR readers are doubtless aware that during the last session of parliament a Committee was appointed to inquire into the adulterations of food and drugs.

We have thought that a condensation of the evidence, under the last head, might prove of some service to the profession, by making them acquainted with the sophistications carried on; thus putting them on their guard, and enabling them to avoid disappointment arising from the difference in the action of medicinal substances; since this is too often the case, when the odium is always cast on the administrator or prescriber, and not on the agent employed.

With the question—Who were the originators of this investigation? we have little to do. Some of our readers may perhaps remember Accum's work, entitled "Death in the Pot," wherein it was shown by him that our daily food was then highly adulterated; for trickery did at all times exist in trade, and always will; although we might have thought that our food, and the agents by which health is restored, would at any rate have escaped—that self-interest would have been sufficiently strong to resist their adulteration; but the opposite is the fact. Hudibras has said that

> ——"the pleasure is as great
> In being cheated as to cheat."

And one is half inclined to believe it is so from the love of cheapness that prevails, and the close competition that exists at the present day.

It would appear that with Mr. Wakley, in a series of reports published in the *Lancet*, in 1851, the *present* movement began; but the statements are somewhat contradictory

and conflicting as to whom the merit of *originating* the inquiry is really due.

Dr. Hassall lays claim to the introduction of the use of the microscope as a means of detecting these adulterations; and it may be said that he "and Dr. Normandy led the van, and 'did a tale unfold' which threatened to create a panic both in the provision and the drug markets. Mr. Warrington, of Apothecaries' Hall, corroborated some of the statements made, and Dr. R. D. Thomson followed with a long catalogue of frauds, while others, on special subjects, brought up the rear; thus completing what might be termed the case for the prosecution."

The inquiry has doubtlessly exposed many startling—not to say nefarious—practices, some of which had become almost conventional; yet on the other hand, it is to be feared that in their endeavours to denounce these abuses the witnesses have allowed themselves to indulge a little in highly coloured statements and some exaggerations. This has necessarily created a recoil in the public mind. It is remarked, by the editor of the *Pharmaceutical Journal*—"Other testimony was required to place the question in its true light. Messrs. Redwood, Herring, and Scanlan, and Dr. Letheby, while corroborating the previous evidence to a certain extent, repudiated, on the part of the respectable portion of the several trades implicated in the inquiry, the general denunciation which had been passed upon them. Mr. Phillips (of the chemical department, Inland Revenue) also gives some practical information founded on personal experience in his office; and his evidence, as well as that of some other witnesses, is calculated to moderate the intensity of the cloud which seemed to overshadow the inquiry at its early stages."

But we have said ours is a *specific* object, namely, to see how far the evidences brought forward affect the practitioner of veterinary medicine in exposing the sophistications carried on in the drugs used by him.

The time is happily gone by when "anything was thought good enough for a horse;" and the educated veterinary surgeon knows full well that dependence on the action of

the medicinal agents employed by him can only be placed on such as are of comparative if not absolute purity; and to ensure this, he has only to deal with a respectable druggist, and give him a fair price for the required article. Not that this will supersede the necessity of his making himself conversant with the characters of the drugs he employs, or the means required to detect chemical impurities, far from it; it is this very knowledge that will enable him to ensure the possession of the object he has in view.

As in an introductory lecture, published in this journal, the above has been fully dwelt upon, we need not now enlarge, but we at once proceed to select from and compare the evidence brought before the Committee of the House of Commons, which is not yet completed, as the inquiry is to be resumed next session. To give, however, some idea of the extent of the adulterations carried on, we may be permitted to quote most of Dr. Hassall's evidence:

Annatto is adulterated with chalk, wheat-flour, rye-flour, salt, soap, turmeric, ferruginous earths, Venetian red, and red lead.

Arrow-root, both East and West India, with sago, tapioca, and various mixtures and combinations of these.

Anchovies, by Dutch, French, and Sicilian fish, coloured by bole-Armenian and Venetian red.

Bread, with mashed potatoes, alum, lime, sulphate of copper, bones, and other articles.

Porter, with cocculus indicus, carbonate of soda, wormwood, ginger, orange-powder, sulphate of iron, sulphuric acid, alum, oyster-shells, nux vomica, &c.

Coffee, with chicory, roasted wheat, beans, and rye, and bad flour and bones. Chicory itself with the same substances and roasted oak-bark, tan, and horses' liver, with the addition of Venetian red, umber, &c.

Curry-powder, with ground rice, red lead, &c.

Gin, with water, sugar, acetate of lead, cayenne, &c.

Mustard, with powdered linseed, flour, and turmeric.

Preserves, with salts of copper (chiefly the acetate), and ground rice.

Cayenne, with vermilion and red lead.

Vinegar, with water, pyroligneous, hydrochloric, and sulphuric acids.

Teas are most extensively adulterated, and the substances employed to give them colour are oftentimes highly injurious.

Tobacco, is mixed with cabbage-leaf, umber, sal ammoniac, nitrate of ammonia, potash, and soda; and *Snuff* with lead. Cases are recorded of paralysis being produced by it when thus contaminated, as metals do not escape readily from the system.

Who, after reading this, is not inclined to say with the late Mr. Accum, "Death is indeed in the pot."

We now come to drugs:

Scammony is often mixed with wheat-flour, chalk, &c.; and of seventeen samples purchased, one only was genuine.

Out of twenty-one samples of *Ginger*, two thirds were found to be adulterated.

In twenty-three samples of *Opium*, no less than nineteen were adulterated; chiefly with wheat-flour and poppy capsules; while the active principle of the opium was only present in the proportion of one to five.

[We need not dwell upon the value of this agent to the practitioner of veterinary medicine, nor state how desirable it is that he should possess as genuine a commercial article as possible, since opium is never absolutely pure.]

Mr. R. Warrington, of Apothecaries' Hall, after having exposed the system of glazing teas, and the formation of what is designated in China, "lie," or "false tea," which contains, he said, fifty per cent. of inorganic earthy matters, proceeded to give evidence on drugs, observing that it is rarely the case that sophisticated articles came under his notice, as the Hall always buys in the market the best that can be procured; and every article is there "tested," and all drugs ground by them. This is important, since it is very often the case that frauds are practised by the drug-grinders.

As to the quality of *Opium*, he thought that this could not seriously affect prescriptions, as the average purity was well known.

For *Turkey Rhubarb*, English rhubarb, grown in immense quantities at Banbury, and fetching about 4*d.* per pound, is often substituted.

Cod-liver Oil is another article in which there is an immense adulteration; also *Quinine*.

Chloroform is not so much adulterated. There is this danger, however, attending its use; that if kept long, it undergoes decomposition, the elements reacting on each other.

Dr. Normandy, with regard to *Milk*, stated, "He was lately in the neighbourhood of Clerkenwell, for the purpose of examining a well in that locality, when he met with a spectacle which prevented him from tasting milk for six months afterwards. He saw from thirty to forty cows in a most disgusting condition, being covered with ulcers, their teats diseased, and their legs full of tumours and abscesses—in fact, quite horrible to look at; and a fellow was milking them in the midst of all this abomination: and this was by no means an exceptional case, a great many dairies being in the same condition. The milk, in consequence, was really diseased milk. The state of the poor animals must have been produced by the manner in which they are kept."

As to the adulteration of drugs, Dr. Normandy quite agreed with Dr. Hassall; and instanced *Cream of Tartar*, which has sometimes mixed with it, chalk and sulphate of potash.

Calomel is adulterated with chalk to the extent of 60 per cent.

Carbonate of Soda with the sulphate.

Iodine, with water and black lead, to the extent of 25 per cent.

Linseed Meal, with bran and sawdust.

Litharge, with various earthy matters.

Nitrate of Silver, with nitrate of potass.

Mercury, with lead, tin, and bismuth.

Dr. R. D. Thomson, Professor of Chemistry in St. Thomas's Hospital, stated that the fluid used for flavouring sweetmeats consisted of "oil of grain," which was obtained during the distillation of grain in large quantities. It is, in fact,

amylic alcohol, and it would be unsafe to take even a small quantity of it.

In reply to a question as to *Sausages*, he said "it had often been asserted that they were made of a peculiar kind of meat, viz., horses' tongues. Indeed, he had reason to believe that the tongues of all the horses killed by the knackers were used as food." It would be well, we think, if there were nothing worse than this so used.

With regard to the adulteration of drugs, he averred that nearly every one was adulterated; and he frequently had to reject one third of the drugs he examined.

He proceeded to state, that he had known *Extract of Opium* mixed with extract of senna, and 30 to 60 per cent. of water. *Opium* itself, he believed, was less adulterated than most other articles.

Hydrocyanic Acid, one sample of which ought to have been of a certain strength, represented by 2, was only 1·32, and another sample was as high as 2·38.

Calamine, or *Carbonate of Zinc*, once very much used as an ointment for dressing wounds, was not now so much employed, owing to the difficulty of obtaining it pure. It was sometimes found to be made up of sulphate of barytes, chalk, and ochre, without a trace of the carbonate of zinc. Two samples contained white lead. He had often heard medical men complain of the uncertainty they felt as to the effect of their prescriptions, owing to the different qualities of drugs; and he believed there was no way of meeting the evil except by having a public inspector. The knowledge of there being such an officer would lead to great good, and he saw no difficulty in it.

Mr. Redwood, Professor of Chemistry to the Pharmaceutical Society, came to the rescue of the druggists who had been so unsparingly denounced by some of the witnesses, and who by their sweeping denunciations, it was evident, were doinglittle less than bidding highest for place and appointment. He thought in the evidence given before the Committee there had not been a sufficient distinction drawn between impurities and adulterations.

Absolute purity in most cases was unattainable or attained only at a cost which rendered it undesirable. For all purposes for which they were required he considered that drugs might be obtained sufficiently pure, and he thought it undesirable that any regulation should be enforced prohibiting the manufacture of cheaper drugs or chemicals. If a pure article were required, it could be procured. He illustrated this by referring to the cyanide of potassium, so largely used in electro-plating, and where absolute purity is not necessary: it was manufactured for this purpose at 3*s.* 6*d.* per pound, whereas the pure article would be 1*s.* 6*d.* per ounce. The same remark applied to carbonate of soda, which was made in large quantities in this country for the production of soap; for which purpose it was not required to be pure; and it would be a public injury to raise the price by compelling the manufacturer to make it so.

He had no doubt that in many of the low districts especially there was considerable adulteration of medicines, but the best remedy would be a better knowledge on the part of both buyer and seller. He did not wish to deny the fact of adulteration, or to justify it, but many of high standing in the commercial world were looking with great anxiety at the proceedings of the Committee, as much that had gone forth to the public had a great tendency to deceive them.

As Mr. Redwood has been for so many years connected with the Pharmaceutical Society, and his evidence is of a *practical* nature, we are disposed to insert the greater part of it, bearing as it does on the object we have in view. He now wished—

"To refer to other substances which had been described by previous witnesses as subject to great adulterations, but which according to his experience were in a state of irreproachable purity; exceptions were exceedingly rare. Carbonate of soda, for example, as it was commonly called, or bi-carbonate of soda as it was in reality, was not subject to adulteration. Of forty samples which he had obtained, in only one was there any appreciable amount of impurity. Since the last meeting of the Committee, Dr. Normandy had brought to him a sample of soda for analysis, which contained twelve per cent. of sulphate of soda. This was not an adulteration, but an impurity, which rendered it unfit for medicine; but the forty specimens, some of which were obtained from the same neighbourhood, he (Mr. Redwood) had found pure, except that some were slightly deficient in carbonic acid, owing to exposure to the air. The substance calomel was said to be adulterated

with 60 per cent. of sulphate of barytes and carbonate of lime; but in his experience he had found it in a state of great purity. There was no country in the world in which calomel was prepared in such purity as in England. He had obtained fifty-one samples of calomel from all the low neighbourhoods of London, and no one of them was adulterated. Iodine, said to be adulterated with water and blacklead, he had never found so impregnated, and large dealers had assured him that they had never met with such an adulteration. He conceived that no one would charge the retail dealers with adulterations; they were a body above suspicion, and it was owing to them cases had been detected and exposed. A certain amount of adulteration is effected by the drug-grinders, as most drugs in their crude state do not admit of it. Sometimes inert matter, such as sawdust, was found mixed with the drugs. This might arise from that substance being put into the mill for the purpose of cleaning it. He entirely acquitted the retail dealers in drugs, even in the poorest neighbourhoods, of all participation in the sort of adulteration now referred to, and divided the responsibility between the wholesale trader and the drug-grinder. He would not dispute the opinion of medical men, that you must be careful where you obtain drugs; but the evil of adulteration had been very much exaggerated, and especially by the gentlemen who had given their evidence before the Committee. Even if a stop were put to what they called adulterations, there might still be as much disparity in medicines as there was at present. Nature was by far the greatest adulterator. In the drugs derived from the vegetable kingdom, scarcely two samples were alike, and much skill and experience were required to select the best from the inferior. Much disparity in the quality of drugs and medicines arose from want of proper knowledge on the part of retail druggists. This led to defective selection and preparation of medicines. With regard to cod-liver oil, there was no doubt medical men were in the habit of recommending their patients to go to particular establishments, where they believed this or other drugs were the purest; but it was not within his (Mr. Redwood's) knowledge that cod-liver oil was extensively adulterated. It might be obtained pure from many places where it was manufactured. The same remark applied to sarsaparilla. His evidence was the result of a long course of inquiries during the last thirty years. In the majority of cases, druggists do not analyse their drugs themselves, but judge of the purity according to their external characters, and the price asked for them; but a number of druggists are capable, and also make a constant practice of analysing their drugs, and this number has greatly increased during the last ten or fourteen years. He had heard the statement of Dr. Thomson that one drug-broker offered to supply any ground drug at a uniform price of 36s. per cwt., and he (Mr. Redwood) believed, to some extent, it was true. There was a large manufacturer of chemicals, who had stated if an order was brought to him for an article at a certain price, he would supply the article at that price, and produce the best thing he could. The responsibility would rest with the person giving the order. This, no doubt, was a most fearful imposition on the public. Inferior drugs were generally confined to low neighbourhoods, and were the result of competition in price. Witness had never found magnesia to be adulterated, although lime was said to be mixed with it in some instances. He would now state what he considered the difference between impurities and adulteration. An adulteration was the addition of some substance with a view to deteriorate the quality of the body to which it was added. There were two classes—viz., 'fraudulent' adulteration and 'conventional' adulteration. By the latter term he intended those cases where the sanction of the consumer was given, whether directly or indirectly, to the practice. Fraudulent adulterations of drugs were of rare

occurrence, and as soon as detected were put a stop to. He had heard Dr. Thomson's evidence that the same adulterations were still going on as he had spoken to in his evidence in 1830, but Dr. Thomson was very much deceived on the subject.

"Mr. Redwood then proceeded to enumerate the cases of adulteration which had been brought under the notice of the Pharmaceutical Society during the last fourteen years. Among the cases were those of morphia, isinglass, borax, and lard. The latter substance was adulterated with flour, as imported from America. He believed the English lard not to be adulterated, but had not extensively examined it. The character of drugs had greatly improved lately. The druggists were better educated, and were able to make a more judicious selection of drugs for use. Drugs were not formerly produced in so pure a state as they are now. Scammony was an instance; ten years ago it was impossible to obtain a pure specimen as imported, but now, owing to druggists rejecting the adulterated article, it would be occasionally met with entirely free from any admixture, but yet at such prices that it was impossible to sell it in many places. Opium never found its way into this country pure. It was well known to be a heterogeneous substance. Dr. Thomson had stated the best opium was the Indian opium, but this sort had no sale in consequence of its inferior quality. His (Mr. Redwood's) opinion entirely differed from Dr. Thomson's on this point. The adulteration of opium was a conventional one. It was known not to be a simple substance, and was accepted by the public and medical men as such. It might be called an adulterated substance, but the adulteration was sanctioned by all parties. He should consider the colouring-matter of sugar-plums and other confectionery as a conventional adulteration, and also the colouring of anchovies. Pickles might come under the same denomination. A noxious adulteration might be a conventional one, that is, the public taste might be wrong.

"Mr. Redwood then enumerated various substances to prove that the public were not disposed at first to sanction any change in the appearance of an article, even though it might be purer. These were all what might be termed conventional adulterations. Calamine was referred to by Dr. Thomson. This substance was very little used now, and ought to be classed among such substances as 'the moss growing on a dead man's skull,' which was formerly to be found in the Pharmacopœia. The public were accustomed to judge of calamine by the brightness of its colour, but the pure substance was the reverse. He might also mention that there was no true bole Armenian in this country, and had not been for centuries. It was a mixture of chalk, pipeclay, and oxide of iron to give it a colour. Oxide of zinc was directed by the College of Physicians in 1824 to be prepared by a process which yielded a perfectly white powder. That powder, however, was not pure oxide of zinc, and in 1836 the College altered the process for one which yielded a pure oxide; but this is not quite white. The druggists and some medical men, having been accustomed to the white (impure) oxide of zinc, frequently reject the purer article, because it is not white. Milk of sulphur was ordered by the College of Physicians in 1721 to be made by a process which yielded an impure product, containing a large quantity of sulphate of lime. This process was afterwards altered; but the purer product differs in colour and other properties from the impure, and it has been found difficult to induce the public to take the pure."

Mr. Thomas Herring, wholesale chemist and druggist, said—

"He had been in business for the last forty years. He would show the Committee what was going on at the present day. At a sale during the last

week or fortnight at Garraway's some scammony, which would cost when pure 40*s.* a lb., was sold for 3*s.* It had not a particle of the original substance; and, to show how difficult it was to get a pure article, he had examined four parcels of scammony as imported by himself and others, and none were pure. One contained only 70 per cent. of scammony, and that was considered a very good article, and another contained 90 per cent. of chalk. This adulteration was very injurious, as a prescription in which this was used, instead of being an aperient, would act as an astringent. Another substance was opium. This was always adulterated, and was sometimes sold for 4*s.* per lb., when witness would have been glad to give 20*s.* for a good article. No medicine ought to be used but what was pure. In America they examine all drugs imported, and those found to be adulterated are rejected. This inspection only applied to drugs imported into the country. The opium comes from Aleppo generally. None is allowed to come from India. He was convinced that the best way of stopping adulteration would be the appointment of an inspector, who should be a pharmaceutical chemist, and should have a liberal salary, so that his attention need not be directed to other matters. He should have power to enter any shop and demand an inspection of the drugs, and any found unfit for compounding should be confiscated. Since 1841 the chemists of this country had greatly improved in education, and they must know perfectly well when they sell inferior drugs. It would be an insult now to offer to any respectable house an inferior article such as the sample of scammony produced. No doubt there was a large sale of adulterated and inferior drugs, and for the very good reason, that it gave a larger profit. This was an injury to the consumer. No doubt, some chemists and druggists did not scruple to sell impure drugs, but as a body they set their faces against anything of the kind. Had not the slightest doubt that all respectable houses would be delighted at the appointment of such an inspector. With regard to the adulteration of soda, he could see no reason for it, the price being so low. If rhubarb were sold at 8*s.* a lb. in the lump, but when powdered it could be had for 4*s.*, the public must know there was an adulteration, or it could not be sold at so low a price. He had heard there was a grower at Banbury who sold annually twenty tons of English rhubarb, and witness believed it was so far true that the person in question did grow perhaps as much as half that amount. It was worth about 40*s.* per cwt., or 5*d.* per pound, was of a very pretty colour, and produced a certain amount of irritation, but no good effect whatever. Calomel was said to be adulterated with chalk. This could not be the case, in witnesses opinion, as the substance added for the purpose of adulteration always bore a close resemblance to the original, which would not be the case here."

Mr. George Phillips, chief officer of the chemical department of the Board of Inland Revenue, seemed to consider the adulterations had been much exaggerated by some of the witnesses. That many existed was indubitable; still means of detection were at the disposal of chemists that were not formerly, especially the microscope. Mere chemical knowledge was not the only thing requisite for an examiner: he should combine scientific and practical knowledge.

Mr. R. A. Wallington, chairman of the Leamington Local Board of Health, concurred with the opinion of Mr. Red-

wood and Mr. Phillips, that the extent of adulteration had been much exaggerated, and that as far as the tests were concerned, they had not been fairly dealt with.

Mr. Postgate stated with regard to the adulteration of *Mustard*, that there was not a conventional standard by which medical men could estimate the strength in writing their prescriptions. On the contrary, medical men were greatly perplexed in consequence of the variation in quality of this substance. It was adulterated with flour and turmeric.

"Drugs were much adulterated; quinine contained an alkaloid obtained from the willow bark, called salicine, the price of which was 1*s.* 9*d.*, while quinine cost 9*s.* Quinidine was often used for it. Tamarinds were found adulterated, sometimes with sulphuric acid. Milk of sulphur contained often 50 per cent. of plaster of Paris. Scammony, white precipitate, oxide of antimony, and various other preparations were all more or less adulterated.

"The witness here produced samples of a medicine sold as 'concentrated castor-oil capsules,' which contained nothing but croton-oil, which was a very violent purgative. Castor-oil could not be concentrated, and therefore these capsules were a gross imposition, and the sale of these capsules still continued at Birmingham. He had also examined various essential oils at one shop, all of which were adulterated with fixed oils, which materially affected their value. Witness here produced to the Committee several letters from druggists and others, confirming the existence of great adulteration in drugs. One letter stated, many lives had been lost owing to the use of adulterated drugs.

"*Mr. H. Letheby, M.B.*, Professor of Chemistry and Toxicology in the Medical College of the London Hospital, said he was employed in making the analyses for the *Lancet* and had been engaged for fourteen years previous to that time in similar investigation for the work of Dr. Pereira on 'Materia Medica.' He considered adulteration in all substances was most extensive. These adulterations were of various kinds—viz., 'accidental,' including such instances as 'insects in flour,' copper in jams and jellies, in consequence of the acid of the fruits acting upon the copper vessels. Some fraudulent adulterations were for the purpose of adding weight, as, for instance, mixing inferior arrowroot with the best quality, starch sugar made from diseased potatoes with the pure sorts, and the mixture of gelatine and isinglass might come under the same head, as well as the addition of water to vinegar and porter. He did not quite agree with the evidence of Mr. Wallington with respect to gelatine and isinglass. There was no distinction chemically, but a great distinction as regarded price, flavour, and action upon the stomach. He could not agree that the only difference was that the gelatine was more pure than isinglass, or that a person would be justified in selling gelatine under the name of isinglass. Chemically they were the same, but physiologically they were quite distinct. To a delicate stomach the difference would be very great. Another class of adulteration was to give a false strength, such as adding sulphuric acid to vinegar. The mixture poor people were in the habit of pouring over the oysters they bought at the street stalls was merely diluted sulphuric acid. 'Black jack,' or roasted sugar, was employed to give false strength to coffee. A third class of adulteration was for the purpose of improving the appearance of articles. For instance, facing teas, the salts of copper found in pickles and preserved fruits,

&c. It was a common trick of the baker to introduce chalk into sour flour to improve it. The adulteration of snuff was very injurious, and possibly hundreds of people had died from its use. With regard to coloured-sugar confectionery it was the most injurious. The colour was almost always produced by the chromate of lead, and twenty-four persons had been brought to the hospital who had been poisoned by eating some of the refuse stock of a confectioner in Petticoat Lane. There was no reason for the use of such poisons, as the foreign confectionery did not contain them, and it was much superior in appearance to English. Another adulteration was where poisonous matters were introduced for the purpose of improving the flavour. The essential oil of almonds was four times as strong as the strongest prussic acid, yet it was constantly used to flavour. With regard to drugs, a great proportion of the adulteration consisted in mixing inert matter with the powdered drugs. It was the custom to send 100 lbs. of drugs to be ground, and to expect the same weight returned without regard to waste or evaporation, and in order to make up the required weight, which the druggist would have, the grinder introduced sawdust, or 'powder of post.' He had examined 200 samples of opium, and rarely found them to contain more than 5 per cent. of morphia, while the crude drug contained 12 to 14 per cent., thus showing a terrible adulteration. A medical man would consequently find the effect of his prescription very different from what he anticipated, and if he went on to increase the dose, and the prescription was taken to another druggist who sold purer drugs, the effect would be most serious.

"After enumerating several other drugs, Dr. Letheby said he thought it but right to mention that some of the evidence given before the committee possibly related to the adulteration of drugs some years ago; lately, owing to the instruction given to chemists by the Pharmaceutical Society, they had much improved. Speaking from his own experience, having examined scores of samples, he could say neither castor nor cod-liver oil were adulterated. As to a remedy for the prevention of adulteration, he would not venture an opinion with respect to food; but, as to drugs he thought all adulteration might be done away with. It might be left to the Pharmaceutical Society. The great difficulty in the appointment of inspectors was the number that would be required. Such an immense number of things were now brought to the hospital for his examination that it was impossible to find time to attend to them. An analysis required as much as four or five days sometimes.

"*Mr. Scanlan*, Apothecary to the Dublin Apothecaries' Hall, generally confirmed the preceding witness as to the adulteration of the various articles of consumption. He said he had known most of the large drug-houses in London for thirty years past, and was convinced they would not lend themselves to any adulteration whatever. He did not agree with Dr. Letheby as to the mode of adulteration by the addition of sawdust to make up for the loss by evaporation and other causes. It was not necessary to do anything of the sort. The principal check to adulteration, he considered, would be the better education of chemists and druggists, and those who bought those things."

Thus have we fulfilled our intentions; our object being twofold. First, as we said, to make our professional brethren acquainted with some of the trickeries practised on drugs; and, secondly, to show the necessity of their being conversant with the means of detection. To chemistry

and the microscope must the appeal be made for this purpose. Hence the value of scientific knowledge, and the early implanting of principles, the calling forth of which into practice will alone enable their possessor to combat with and defeat the arts of the designing and dishonest.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY AND SPECIAL MEETINGS OF COUNCIL, Octorer 24, 1855.

Present:—The President, Messrs. Dickens, Ernes, Hallen, Jex, Robinson, Stockley, Sylvester, Varnell, Wilkinson, and Withers; Professors Spooner, Simonds, and Morton (Treasurer); and the Secretary.

The President in the chair.

The Secretary stated that the business of the Special Meeting was to confirm or reject the motions of the 23d of August, relative to the reduction of the pupils' fee, and the conditional admission of persons who had passed the Highland and Agricultural Society's Board.

A letter was then read from Professor Dick, dated Oct. 21st, stating, in reply to a letter addressed to him by the Secretary, dated Sept. 6th:—"That he should be willing to lay any proposal from the Council before the Highland and Agricultural Society."

Mr. Wilkinson proposed another adjournment, with a view of submitting to Professor Dick, and, through him, to the Highland Agricultural Society, the proposed legal modifications and enactments. By thus making a distinct proposition, he said, it would rest with Professor Dick whether the contemplated union should be effected.

Professor Spooner deprecated any further adjournment; urging that the present fee was an injustice, and that it ought to be reduced irrespective of Professor Dick's acquiescence.

Mr. Wilkinson withdrew his motion for an adjournment.

Mr. Robinson then proposed an adjournment.

Mr. Withers seconded the motion, which was put and lost.

Mr. Wilkinson said he did not wish the resolutions to be confirmed unless Professor Dick's assent was attained, without which he thought the reduction of the fee would be injurious.

Mr. Ernes thought the fee should be reduced in favour of the London School apart from any other consideration.

Mr. Hallen believed Professor Dick's request a reasonable one, and that in declining to comply with it, the Council would be putting itself in a wrong position.

Mr. Dickens despaired of any satisfactory arrangement being made with Professor Dick, who had taken five weeks to answer the Secretary's letter.

Mr. Robinson said Professor Dick was indebted to the Highland Agricultural Society for his present board, and no change could be made without their sanction.

Professor Simonds thought the Council had committed an oversight in not authorising Professor Dick to lay the subject before the Society.

Mr. Stockley urged that the Council ought not to succumb to any individual.

Mr. Gabriel, believing that the reduction of the fee would be of little benefit to the pupil, while it would greatly affect the income of the College, should strenuously oppose it.

Professor Morton supported the confirmation of the minutes on the ground that there would then be something definite to lay before the Highland Agricultural Society.

The motion for the confirmation of the minutes was then put, and the result was: for the motion, 4; against, 6; majority against, 2.

The motion was consequently lost.

The Special Meeting then terminated.

At the Quarterly Meeting—

Mr. Robinson presented to the Council a portrait of Mr. Thomas Turner, the first President of the College. He said he was delighted to be a member of the committee appointed to do honour to the first President, but he wished the task of presenting the portrait had devolved on some other member of that committee. Mr. Turner's excellent qualities, however, were well known, as were the eminent services which he had rendered to the profession in procuring the charter. So highly were those services appreciated, that it was resolved to present his portrait to the College, and he had great pleasure in offering it to the Council for acceptance.

The President, in acknowledging the receipt of the portrait, fully concurred in the feelings expressed by Mr. Robinson.

The Treasurer laid before the Council the Quarterly report. The balance in hand last quarter, £410 15*s.* 4*d.*; received for copies of register, 17*s.*; total, £411 12*s.* 4*d.* Expenses, £42 3*s.* 7*d.* Balance in hand, £369 8*s.* 9*d.*

The Quarterly Balance-sheet was, on the motion of *Mr.*

Dickens, seconded by *Mr. Hallen*, unanimously received and adopted.

The registrar's report was then brought forward.

Registrar's Report.

Seven deaths have been reported during the past quarter. The uncertainty of human life is again evidenced in these returns, for while we have to regret the loss of the oldest, and one of the most respected members of the profession, Mr. William Lacey, of Adbolton, the date of whose diploma is 1800, and who was a member of the Council at the time of his decease; we have also to condole with the friends of those who, ere they have been fairly started in the great struggle, have departed hence. The son of our highly respected first President is one of these—Thomas Turner, jun., who passed in 1849. The others whose demise we have to record are Mr. John Lane, of Australia, passed in 1848; Mr. Thomas Stone Biggs, of Chippenham, in 1852; Mr. Joseph Snow, Salisbury, in 1834; Mr. Winstone Simonds, Swansea, in 1838; and Mr. Joseph Tombs, of Great Barrington, in 1828.

The Secretary read a letter addressed to the Editors of the *Veterinarian*, by Mr. G. Lewis, in reference to a refusal by a commissioner of a claim of exemption from payment of certain assessed taxes made by the writer.

Mr. Withers mentioned that a similar claim at Bristol had been allowed.

Professor Spooner said there was no such exemption granted by the charter. He also proposed that the Secretary should write to the commissioner, enclosing him a copy of the charter, and asking him whether he had made the statements imputed to him by Mr. Lewis.

Mr. Jex seconded the resolution, which was unanimously adopted.

Professor Spooner then moved for a committee to communicate with the Highland Agricultural Society, and ascertain, if possible, the reasons for their declining to send their pupils to the College board for examination.

Mr. Robinson seconded the motion, which was passed; and the gentlemen appointed were the President, Messrs. Ernes and Robinson, and the Secretary.

Messrs. Hallen, Dickens, and the Secretary were named as the committee of supervision; and the proceedings then terminated.

H. Hallen,
Charles Dickens,
E. N. Gabriel.

VETERINARY MEDICAL ASSOCIATION.

REPORT FOR THE SESSION, 1854-55.

Mr. President and Gentlemen,—It is incumbent on me, at this, the last meeting of the Association for the session, to lay before you an account of the proceedings during the period I have officiated as acting Secretary; previous to which, however, I would make a few remarks relative to the manner in which the meetings have been conducted. I am indeed happy to be able to state that the greatest harmony and good feeling have existed between the members; and the spirited discussions which from time to time have taken place on the introduction of the essays, I feel certain must prove of great value to us in our subsequent pursuits in life. It would be presumptuous on my part to attempt to explain to you the benefits that accrue from meetings of this kind, since you are all familiar with these advantages; and the regular attendance of most of the members during the session is, I think, a sufficient proof of this.

I may be allowed to remark that we have had but very few veterinary surgeons present at our weekly meetings. The Association, therefore, has become almost, if not altogether, a students' society, and in my opinion it is better that it should remain as such, for the following reason:—there is not that reserve exhibited between fellow-students during the debates, that is often witnessed when strangers are present; on which account many useful facts are elicited that in all probability would have remained in oblivion from a want of confidence to make them known on the part of the possessor; nevertheless I am quite aware that good would result from the experience of an established practitioner being at times communicated.

At the commencement of the session a few seemingly disadvantageous circumstances arose, but fortunately they were of but short duration. The officers then chosen by you from among the members still hold their several situations, with the exception of Mr. R. Hammond, who was obliged to withdraw from ill health, and Mr. G. Western, who resigned the office of vice-president.

The essays introduced have been varied, and on important subjects, and are highly creditable to their respective authors. The great object has been to convey practical information, and that in so condensed a form as to admit of an unrestrained and useful discussion.

The first meeting of the Council was held Oct. 19th, 1854, when it was found that the balance in favour of the Association was £18 17*s*.

The state of the library was brought under notice by the Librarian, who reported that several works were wanted, when it was resolved that those works which were absolutely necessary should be added to the library. This now contains above a thousand volumes. The work 'On the Age of the Ox, Sheep, and Pig,' was presented by Professor Simonds, its author; likewise the fifth edition of his 'Manual of Veterinary Pharmacy,' by Professor Morton.

At the first meeting of the Association the following were elected from among the students as vice-presidents, to act in concert with those chosen by the Council. Messrs. E. Howes, W. Ryall, E. Western, B. Wimbush, W. Bryer, and J. E. Peele. Mr. R. Hammond was elected acting Secretary.

From circumstances already alluded to, a re-election was rendered imperative, which terminated as follows: Messrs. W. Ryall, B. Wimbush, W. Bryer, J. E. Peele, T. Clarke, and W. Furnivall, were appointed vice-presidents, and Mr. E. Howes acting Secretary.

The essays considered during the session have been introduced by

Mr. W. Furnivall, on 'Counter Irritants.'
Mr. E. Howes, on 'Diseases of Young Cattle.'
Mr. W. Ryall, on 'Parturient Apoplexy.'
Mr. B. Wimbush, on 'Strangles.'
Mr. T. A. Clarke, on 'Inflammation.'
Mr. H. Proctor, on 'the Function of the Lungs, and Pneumonia.'
Mr. G. I. Evans, on 'Diseases of the Alimentary Canal of the Horse.'
Mr. J. E. Peele, on 'Pleuro-pneumonia in Cattle.'
Mr. C. Marson, on 'Sprains of the Flexor Tendon.'
Mr. G. Wyer, on the 'Anatomy and Pathology of the Pleura.'

Mr. J. M. Parker forwarded a case of 'Diseased Liver and Kidneys, with Effusion into the Thoracic Cavity;' and
Mr. W. Woodger, on 'Rupture of the Small Intestines attended with some Ambiguous Symptoms;' and
Mr. Assistant-Professor Varnell kindly described the 'Morbid Appearance of a Colt's Leg, upon which the operation of Tendiotomy had been performed.'

Having thus laid before you the above outline, it only remains for me to thank you for the kindness with which you have always received my reports of our weekly proceedings. I am aware they might have been more verbose, but I wished to be faithful, and was fearful of being tedious.

I conclude by expressing a sincere hope that our successors will derive from the discussions that may hereafter take place within these walls, as much pleasure and profit as we ourselves have done.

E. Howes.

ARMY APPOINTMENTS.

War Office, *Nov.* 2, 1855.

For Frederick Spratt, gent., to be veterinary surgeon, which appeared in the *Gazette* of the 21st of September, *read*, Frederick Horne Rush Spratt, &c.

TURKISH CONTINGENT.

To be veterinary surgeons, attached to the Osmanli Cavalry,—

Robert Wilkinson, gent.

John Dollar, gent., *vice* Lane, invalided.

From the London Gazette of Friday, Nov. 16.

BREVET.

James Quallett, gent., to have the temporary rank of veterinary surgeon while attached to the artillery of the Turkish Contingent.

From the London Gazette of Friday, Nov. 23.

Royal Artillery.—John Bunn William Skoulding, gent., to be veterinary surgeon, *vice* Briggs, resigned.

OBITUARY.

THE LATE MR. LACEY.

It will be seen that in our last number we recorded the death of this gentleman. Mr. Lacey having for so long a period occupied a position in the town and county of Nottingham which brought him frequently before the public, the following brief account will perhaps be interesting to many of our readers. He was the son of Mr. Daniel Lacey, of Nottingham, and was born 11th June, 1777. He was brought up as a veterinary surgeon, and, in the year 1800, succeeded to the business of the late Mr. John Mills. In 1809 he joined the 1st Regiment of the Nottinghamshire Militia, of which corps the present Ichabod Wright, Esq., of Mapperley, was then Colonel-Commandant. Mr. Lacey's commissions therein were—Ensign 1809. Lieutenant 1810, Captain 1813. He was afterwards for many years a Lieutenant in the South Notts Yeomanry Cavalry. On his retirement from each of these respective regiments he was presented with a handsome piece of plate, in testimony of the estimation in which he was held by his brother officers. He continued in the practice of his profession up to the year 1827, when he turned his attention to agricultural pursuits, occupying a farm under the late Mr. Musters, at Colwick. In 1834 he removed to his late residence at Adbolton, which place he with much taste rendered one of the most gentlemanly and compact residences in the neighbourhood.

Mr. Lacey was through life much attached to sporting as well as agricultural pursuits. He was the owner of two excellent mares, Miss Craigie, by Orville, out of Marchioness, and Stella, by Sir Oliver, out of Scotilla. From the former he bred Birmingham, by Filho-da-puta, (winner of the St. Leger in 1830, when 27 started), Wolverhampton, Boscobel, and several others. From Stella he bred Independence, Colwick, (both considerable winners), and two or three more. He also bred Ludlow, and divers other winners. He was for a lengthened period clerk of the course at Nottingham, a commissioner of sewers for the county, and a trustee of several of the turnpike roads in the county. To him the public are mainly indebted for the bridge over the railway on the Flood Road. The crossing of that great and important thoroughfare on the level had, by means of the extraordinary influence then possessed by Mr. George Hudson and his railway allies in the House of Commons, been

actually sanctioned by that body, but chiefly by the energetic exertions of Mr. Lacey, as the Chairman of the Flood Road Trust, that outrage was repudiated by the House of Lords, and the erection of the present bridge made compulsory on the Midland Railway Company. With one exception, Mr. Lacey was the oldest member of the Royal College of Veterinary Surgeons who was present at the dinner given in honour of the President in May last, when he was personally complimented by his Royal Highness the Duke of Cambridge. In his social habits Mr. Lacey will be long remembered. Punctilious and gentlemanly in his deportment, he did his best to promote harmony and cheerful feelings among all around.

His active habits continued to the last. He had, as was his custom, risen early on the morning of the 9th ult., and after riding round his farm, had nearly reached his house, when, in endeavouring to fasten a gate, his saddle turned, and he fell and broke his left arm near the elbow joint. The consequent confinement and the shock which he received disarranged his whole system, and he survived the accident only four weeks. In the discharge of the several duties thrown upon him, through a long life, he was punctual, diligent, and accurate, and there are few men in his sphere who will be more missed in his neighbourhood than Mr. Lacey.

We have to record the death of Mr. George Williams, of Bath, and have received the following particulars relating thereto from his son :—

"It appears that he dissected the head of a glandered horse shortly before his death, but in addition to that, he had one or two glandered and two or three farcy cases under his care; and after injecting the nostrils of one of the horses, the animal snorted in his face, which he simply wiped away with his handkerchief."

Mr. Williams was an old member of the profession, having passed his examination February, 1820.

ERRATUM IN NO. 335.

Page 636, line 17, *for* than him, *read* than he.

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